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# THE MOTOR CYCLE

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July 4th, 1912.

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York  
 PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.;  
 Melbourne (Victoria) Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.),  
 and Launceston (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd.; Wellington, Auckland,  
 Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 132, Bay Street, Toronto. SOUTH  
 AFRICA: Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

### A Junior T.T. in the Wet.

**L**AST week we mentioned that there was a strong probability that wet would be experienced in this year's T.T. races. It was so in the Junior event, and, all things considered, it has been a blessing in disguise, for, as we expected, troubles were more pronounced, and those that made themselves evident would have been absent if the roads had been dry. Naturally we refer to belt transmission, and the absence of properly designed mud shields. Some really excellent specimens were used, though in many cases the riders dispensed with these necessary fitments, and no doubt the race has taught valuable lessons in this respect. The fact is that the small engine pulley of the average Junior machine is the weak point of its transmission. Efficient as these pulleys are on dry surfaces, all sorts of troubles crop up on wet roads. Effective magneto and plug covers must also some day be standard; fully twenty stops were recorded through absence of these protectors.

In comparison with last year's race over the same course the average speeds were slower. When we consider that the winner stopped eight times in all, the poor comparison is explained, especially when it is taken into consideration that the state of the roads was very bad in places, especially early in the race. Beyond Ramsey, for example, much water lay upon the course, and those of the competitors who were not wise enough to take the path suffered either belt or magneto troubles. The splashing of the water on the belts caused violent belt slipping, and the sousing of the magnetos naturally produced short circuiting.

The silencing question was not well dealt with this year. Silencers are, of course, out of place in a race,

but as this is a race for touring machines silence ought to be taken into consideration, though we realise the difficulty of fixing a standard of silence. The organisation was excellent, and the scoring board was splendidly arranged. The weather, though bad at the start, became magnificent, and the race as a whole was a great success. The industry was excellently represented among the spectators, and while the number of ordinary sightseers was considerable, the race was a trifle slow at times, and at the starting and finishing point there was little excitement, but this was only to be expected as there were comparatively few competitors and the course was a long one.

As regards reliability under racing conditions, eleven finished out of twenty-one who started. This is about the average of previous races, but hardly good enough we think. It is the pace which kills, as the old proverb says, and we think it would be wise before the industry decides not to give further support to such contests to seek first to improve these averages, for it is doubtful whether standard machines run at their highest speeds over the same course and under the same conditions would behave any better. It should be remembered that previous Tourist Trophy races have been invariably favoured with fine weather and dry roads, therefore the trade has perhaps been led to think that the lessons to be learned from road racing have lost their importance. Last Friday's contest, however, proved that roads and weather, which would have little or no effect on the reliability of a motor cycle at ordinary touring speeds, found out the weak spots when the machines were urged to their utmost limits. The results are a distinct score for the multi-cylinder engine and counter-shaft transmission.





## A WEEKEND EXPLORING EXMOOR.

*Some Notable Gradients Discovered* ————— *By L.W. Spencer*

(Concluded from page 707.)

Descending Beggars' Roost would provide a tip-top braking test, especially if the A.C.U. would make it a timed descent with a maximum time.

We then followed the Ilfracombe Road for about one mile, when we took a turn to the right opposite a little railway bridge where signposts point "To Martinhoe" and "To Lynton Golf Club." Going straight along this lane, we went across the Lynton Golf Links. The surface of this lane was very rough and stony, and in places overgrown with grass and several gates had to be opened. After passing the third gate, four cross-roads were reached; here we took the right-hand turn to Martinhoe, and followed this for about half a mile, when three roads were reached. Turning to the right here, where the signpost points "Woody Bay," we followed the road right down to the sea through the most charming scenery imaginable. Halfway down we found a closed gate across the road and a notice "Motor cars not allowed." Being on the more humble motor cycle we opened the gate, closed our cut-outs, and went on down hill until the road all but disappeared. Clambering the last few yards over the rocks on foot, we once more found ourselves at sea level.

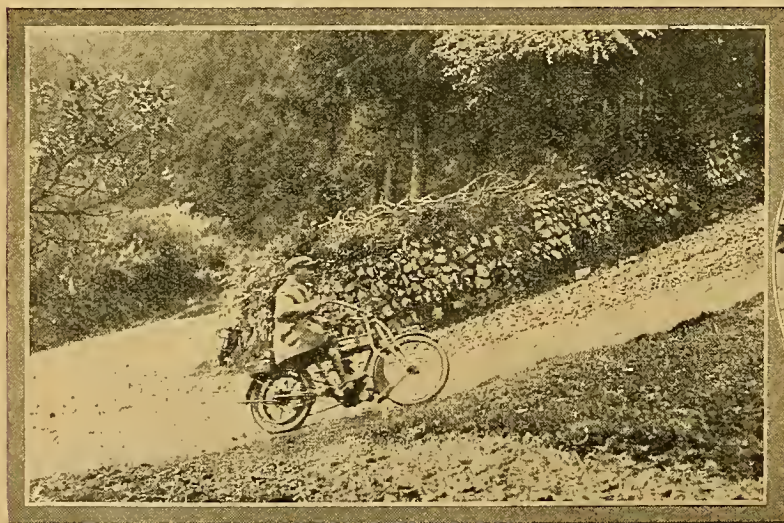
### A Dangerous Fence.

Then we started the long climb up again, and a long climb it was on low gear with cut-outs shut! After repassing through the gate where the notice had been placed, we took the road to the right that could be seen winding along round the cliffs. What with hairpin corners, great gutters across the road, and stretches of

loose rock and stones to boot, there was no T.T. work on this bit. Moreover, the road is nearly on the edge of the cliff, where sometimes it seemed that only a skid would be required to pitch you into the sea hundreds of feet below, and, in the most dangerous places, there is a "fence" to "save" anyone from falling over, but I should not like to see a sparrow risk its life by sitting on it.

### Hunters' Inn to Trentishoe.

The road then wound right round Highveer Point, turned in again by the side of the R. Heddon, until we suddenly found ourselves at Hunters' Inn, one of the most charming and secluded retreats in Britain. Passing right across the front of the inn, we bore to the right and followed the road for half a mile until we reached two cottages, where a little lane turns up to the right and a signpost points "To Trentishoe." At the top, we were told, was Trentishoe village and church, but that we should never get up there, as no motors had ever been up before. This was too tempting, and we set off up at once. Riding for a few hundred yards over rocks, stones, and watercourses that nearly pitched us off the machines, we wondered what would happen next. However, after several bad corners and a terrific climb, at last some cottages and the church hove in sight, but with the road still going up. Holding on for dear life, and thinking that we were up, what was our dismay when the road suddenly shot up still steeper and disappeared round a hairpin corner to the left.



The writer on the first hairpin bend Hookway Hill between Carsford and Porlock.  
The machine is a three-speed Rover.



Removing a cover after undergoing a severe test on Hookway Hill, where the surface was of the worst.



**A Week-end Exploring Exmoor.—**

On went the throttle, and slowly we wound up and round that tortuous bend, and with huge delight found ourselves actually at Trentishoe. The cottagers all came rushing out to welcome us, and assured us we were the first motorists who had ever ridden up. After obtaining some bread and cheese off a kindly dame, we set off down again and safely emerged once more at Hunters' Inn. Thus was Trentishoe added to the trophies of the chase.

**Hunters' Inn to Martinhoe.**

Still anxious for fresh worlds to conquer, we then tried the road up to Martinhoe opposite the inn, before proceeding to Combe Martin. This proved to be a very bad rise, known as Mannicott Hill, about one mile long, with the usual acute corner, but we surmounted it quite easily. It was, however, a very long trying climb, and would prove a real terror with a fixed gear. Dropping down again to Hunters' Inn, we took the Combe Martin Road, leaving the now conquered Trentishoe on our right. Soon we were once again climbing, the road reaching 1,000 feet above sea level in a very short distance. We found it a comparatively easy rise, although a 1,000 feet climb is never to be despised.

Reaching four cross-roads, we took the un-directed road to the right instead of the usual Combe Martin Road. This un-directed road keeps to the top of the moors, and falls into Combe Martin by a long winding hill of a severe character, but the views obtained from it are far grander and more impressive than those from the usual route in the valley.

Turning to the right at Combe Martin, we very soon traversed the few remaining miles to Ilfracombe, which seemed an enormous size after the tiny villages to which we had become accustomed. On the return journey, for a change, we took the main road back through Parracombe, and safely arrived in Lynton without incident.

This is another section of the Six Days' Route, part of which will be taken both ways. If it is wet special caution should be exercised between Ilfracombe and Parracombe, as when wet I have found this road more skiddy than anything it has been my ill luck to strike elsewhere. There is a special surface of chalky, limy slime which will strike terror into the heart of the smooth tyre brigade!

The double Parracombe dip up and down should give no real trouble. There is a nasty right angle turn on the one up to Lynton, and a bad turn to the left on the one to Ilfracombe, otherwise it is plain sailing.

Calling later at a postcard shop we happened to mention the fact that we had climbed Porlock, Lynmouth, Beggars' Roost, and Trentishoe. What was our surprise when we were told that we had not yet conquered the worst of all, namely, Station Hill, this being the main road up to the station from Lynton. It seemed incredible that there could be another hill higher yet, but it was only too true.

**Station Hill, Lynton.**

Turning to the right down a very steep pitch opposite the lift, we traversed a couple of streets and sure enough found the road darting up again in a most extraordinary manner. The gradient got steeper and steeper, and the surface beyond description, until on almost the worst bit there was only loose shale to ride over. Still, we did it, and Station Hill was added to the list of our victories. Though I had visited Lynton many times never before had I ever heard of this hill. The gradient must rival Beggars' Roost, and the sur-

face is incredibly worse, and the machine that will climb it will do anything. Lynmouth and Porlock are child's play to it. Calling at the Post Office on our way back we were delighted to find a little package awaiting us in the shape of two brand new B. and B. racing model variable jet carburettors.

A little later and we were once more safely in the "Blue Ball," talking over the struggles of the day, and wondering what the morrow would bring forth, and whether we should yet find our Waterloo.

The next day we set off with light hearts and our new carburettors fitted, to explore the Oare and Doone valley

district, and pay a proper visit to Porlock Hill.

**Hookway Hill.**

Leaving Lynmouth by the Watersmeet Road we followed it to Hillsford Bridge. Turning to the right we took the new motor road to Simonsbath as far as the top of the hill, but then followed it right round instead of turning off to Simonsbath, until we reached the Brendon signpost. Taking the road indicated, two steep pitches down brought us to Brendon and so on to Oare. The usual thing to do then is to turn off opposite Oare Church, when a well-made road and easy hill bring you to the top of Exmoor and the Porlock Road. This is the easy way out of Lynmouth where Countisbury Hill presents any difficulty. However, being out for the worst that could be found we followed the bottom road on past Oare Church to Oareford, when we discovered another steep ascent known as Hookway Hill, leading up to the Porlock Road. It is a typical Devonshire rise, with awful sur-



Des ending Hookway. Observe the stony surface.



### A Week-end Exploring Exmoor.—

face and a heart-breaking corner. We climbed it, however, with the same steady success that now seemed inevitable.

It is a much more difficult hill than Porlock or Lynmouth, and so far as we could ascertain we were the first motor cyclists to climb it. Reaching the Exmoor Road, a short run of a mile or so brought us again to the renowned Porlock, up and down which we went with the greatest of ease, so as to get a few snapshots and to measure its length. From the Ship Inn, where the hill begins, to the junction of the new and the old road, it was just over three miles, and to the top of the worst part, *i.e.*, just past the second corner, just over one mile.

### A Race with a Red Deer.

We then proceeded quickly to jog along back to the Blue Ball. Suddenly from out of the wood leisurely stalked a wild red deer. The moment it emerged

from the hedge it sighted us, leapt on to the road, and darted off like the wind. Here was fine sport indeed! I dashed the throttle open and leaned over and opened the jet as the engine crashed over with its answering roar. Faster yet and faster still, until I knew I was gaining. But the corners came thick and fast, and how that animal took the corners "all out" was a revelation. I lost heavily on each one, but with a few bits of straight going, including one mad rush down hill, I began to gain fast until I was but a few yards behind. For over a mile we tore along at over forty miles an hour by speedometer, now gaining a bit and now losing a bit, and never but a few yards between us. Then came a succession of bad corners, and I was hard put to hold my own until the road opened out down a little hill again. "Ah," I said, as I pushed the throttle over, "now's my chance to win my first race." Away thundered the Rover, and I drew closer still, when suddenly the road swerved to the left and for an instant I saw my quarry in the air as it leapt a wall and disappeared in the forest. Thus ended the hottest race I have ever run, and few indeed must be the motor cyclists who have been paced by an Exmoor deer!

The next day we regretfully turned our faces homeward; first running up Lynton and Station Hill for some photographs. From Lynton we made for Beggars' Roost, which we took on the run, and thus reached the Watersmeet Road again and followed it to Porlock, *via* Brendon, Oare, Oareford, and Hookway.

### Dunkery Beacon.

Now was to come the tit-bit of our tour. Poring over the map in the Blue Ball the night before, we had decided to attempt a climb of Dunkery Beacon,

the highest point on Exmoor, 1,707 feet above sea level. Leaving Porlock by the Minehead Road, we took a right-hand turn to Horner, about a mile out. Following the lane round through the village of Horner, and past an old mill, we reached four cross-roads. Here we took the Cloutsham Road, which at once began to rise to the moors. About a mile further on we reached a junction of two roads, when we took the left-hand turn which we could see wandering away in the distance up towards Dunkery. At the cross-roads we had found we were only about 300 feet above sea level, but there soon commenced a telling climb. The road was narrow and shockingly loose, with a terror all its own in the shape of little gullies cut right across the road every hundred yards or so for "drainage" purposes.

Sometimes the road would shoot up from these gullies in an appalling manner, but no "rushing" was possible, only a long slow grind on low gear. Such a bumping I've never had in my life before, and how the frame and forks stood it is a marvel. Suddenly the engine roared round, and for the first time in my life I found I had broken a Forward fastener. And no wonder! A replacement was but a matter of a moment or so, and once more I was speeding up.

After 1½ miles of this gruelling, during which we had climbed over 1,000 feet, we had to leave the road, which, after reaching 1,453 feet above sea level, goes on over the moors to Cutcombe. A man in a



Dunkery Beacon, showing the kind of loose stones which had to be ridden over. This point is about 1,707 feet high.

waggonette here appeared on the scene and assured us we were the first motorists ever seen on the Beacon. He pointed out a path leading off the road to the right which we could see winding its way to the summit now in view. My chum looked at the path with dismay and said it was useless to attempt it. It looked more like the bed of a river than a path, and in places there was not a foot to ride on. However, it was unthinkable that we should be baulked now. Go on we must. With some trepidation we let in the clutches and mounted the bank up to the path, and set off on this last lap. This was about the worst ride it has ever been my lot to tackle. It was not the gradient that troubled us but the indescribable nature of that "path." Stones and rocks lay about its narrow way, with yawning pot-holes galore. The bumping on the road was bad enough, but this lot beggared description. Tossed about like corks on the sea we slowly and laboriously made our way up until at last we were at the foot of the great mound which forms the summit. Once more the throttle went over, and with a roar of triumph and delight the engine bore us right up to the very foot of the cairn itself. Dunkery Beacon was conquered. Just as we were starting to devour a picnic repast a gentleman and his wife and



**A Week-end Exploring Exmoor.—**

child appeared, who had come up on foot, and this gentleman kindly gave us his name and address as a witness of our feat.

**The Start for Home.**

After a few photographs had been taken, we once more set out for home and civilisation. Regaining the road we reached Cutcombe and pulled up at the "Rest and Be Thankful" Inn. Here we made further enquiries, and found we were indeed the first motorists up the redoubtable "Dunkery." Leaving Cutcombe, we travelled by lovely and secluded by-lanes through Luxborough, Kingsbridge, and Roadwater to Washford on the main Minehead Road. Here we raised our gears, and then made a fast and uneventful ride to Gloucester, which was reached at 7.30 p.m., the only incident worth recording being the fact that I easily registered over sixty miles an hour on the level by Cowey speedometer, with about 30 lbs. of luggage aboard. A no-trouble run back to London next day brought to an end one of the finest tours it has ever been my lot to accomplish. The distance covered was 514 miles. The petrol used about 6½ gallons. One puncture, the broken belt fastener, and one stop to adjust the belt with a spare link, were my only mechanical stops during the whole run. My friend fared even better than I, only once adjusting his belt.

Not a nut was touched or a plug removed nor a nut lost or a spring broken. The Armstrong gear was beyond all praise. It never failed and gave no trouble. It was a complete revelation, and I am finally converted to the speed gear. A Dunlop belt was used throughout and looks good for thousands yet.

I have not had space to deal with the scenery and the many unequalled joys of North Devon. They must be experienced to be believed. At this juncture what better advice can I give than to join the A.C.U. and enter for the Six Days' Trial.

For those who do not know Devon and its joys this will be a fresh treat and a new experience.

Of the Blue Ball I have written before. The best of everything is its motto, and our bill for supper, bed and breakfast, for Friday, Saturday, and Sunday was only 12s. 9d. each, and a tip-top garage thrown in.

Lastly, I cannot close this article without taking off my hat to the 1912 three-speed Rover, which went so surely and so faithfully throughout.

(Unfortunately the actual photographs taken on the trip were not suitable for reproduction. Another run over the course was, therefore, made with *The Motor Cycle* photographer mounted on his Douglas, and one or two friends, for the purpose of securing some larger and better prints.)

## ENGLISH-DUTCH TRIAL.

### THE DUTCH TEAM.

**T**HE team to represent Holland in the English-Dutch Reliability Trial on August Bank Holiday has now been chosen, and we give the names of the selected riders below. It will be observed that British machines are well represented, the makes including Douglas, Rover, Rudge, Royal Enfield, James, and Humber.

**PRIVATE OWNERS.****CLASS A.**

G. Th. Arends (2 Vulkaan) | J. H. Nieuwenhuis (2½  
P. N. Jelsma (2½ Eysink) | Douglas)  
Reserves: Vict. Fonck (2 Vulkaan) and Ch. v. d. Bossche  
(2½ Douglas).

**CLASS B.**

J. A. v. d. Garde (3½ Rover) | R. J. Tellegen (3½ Rudge  
E. J. E. Maas (5-6 F.N.) | multi.)  
Reserves: D. de Roon (5-6 F.N.) and N. Ruyter (3½  
N.S.U.).

**CLASS C.**

H. Dieters (6-7 Phonomobil) | H. Daalmeyer (6-7 Cyclo-  
D. Croll (7 Indian sc.) | nette)  
Reserves: S. Eweg (4½ Minerva) and H. C. Dolk (5  
h.p. Peugeot).

**TRADE RIDERS.****CLASS A.**

Vulkaan Works (2 Vulkaan) | N. V. v/h. D. H. Eysink  
D. v. d. Mark (2½ F.N.) | (2½ Eysink)  
Reserves: M. Adler (2½ Humber) and J. Witmond (2½  
Royal Enfield).

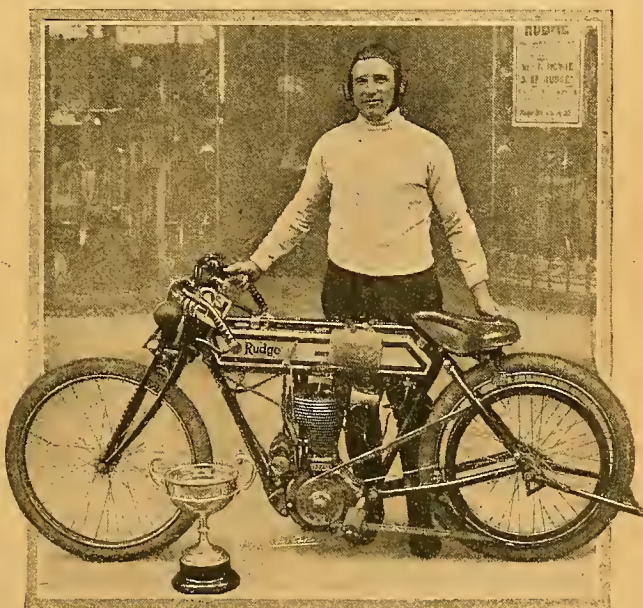
**CLASS B.**

R. S. Stokvis and Zn., Ltd. | P. J. Adrian and Co. (3½  
(3½ Rover) | Eysink)  
Hugo Smit Ezn (3½ N.S.U.) |  
Reserve: H. J. van Rynstra (5-6 F.N.).

**CLASS C.**

J. L. Geidt (6-7 Cyclo- | J. Boots (6-7 Coronamobiel)  
nette) | C. Witteveen (3½ James)

Of the foreign machines the Vulkaan and Eysink are Dutch built; the former use the Z.L. engine, the latter their own. The Cyclonette is made by the Cyklon-Maschinen Fabrik, of Berlin, and was exhibited at the last Olympia Car Show. It is a front wheel driving and steering tricycle, with sociable seats and twin-cylinder engine placed over the front wheel.

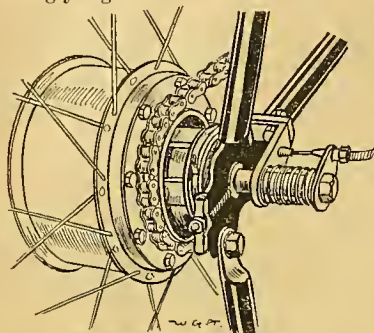


A. Howie and the T.T. Rudge, on which he won a road race from Orange Grove to Pretoria and back, sometimes called the "Motor-cycle Derby" of South Africa—Howie's time was 1h. 8m. 37½s.



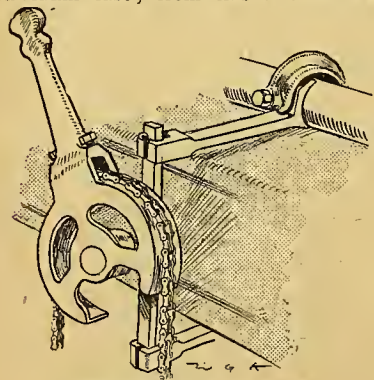
## Some Features of T.T. Models.

THE Alcyon machines have many interesting points. Chief amongst them is the engine, which has two inlet valves and two exhausts, the stems of the valves being inclined at an angle of  $30^\circ$  with the horizontal. The combustion chamber is in section almost hemispherical, and the plug is accommodated in the middle of the head. The tappets are carried in brackets held down by bolts direct to the cylinder head, and have large bearings. In common with those on most French engines the valves and valve springs are exceedingly light.

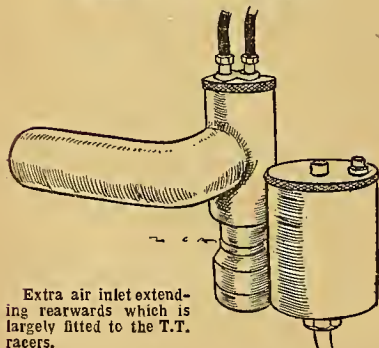


The Riviere two-speed hub gear.

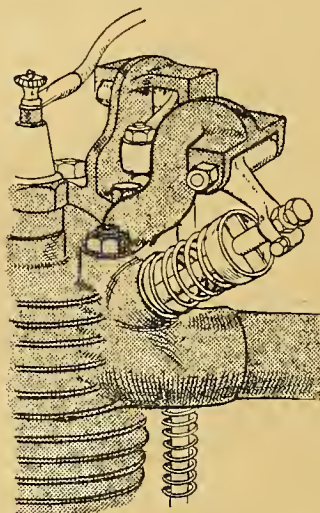
There are two separate long exhaust pipes fitted to Slatter's machine, but Stoeffel's has his short ones terminating in a box fitted immediately in front of the crank case. The bore and stroke of the engines are  $65 \times 105$  mm., the longest stroke used in the T.T. For all that, the engine does not look at all unwieldy. On the pulley side of the engine is a six to one reducing gear in an oil proof aluminum case; from this a cross shaft



Change-speed lever and chain of Bramoton's variable pulley gear.

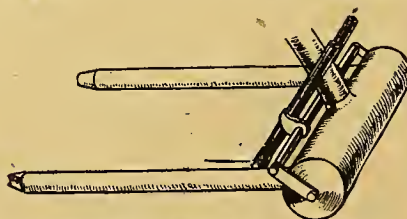


Extra air inlet extending rearwards which is largely fitted to the T.T. racers.

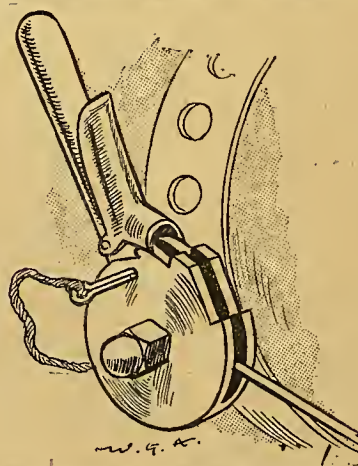


Valve mechanism of the T.T. Alcyons.

is taken through the bottom bracket, and the final drive to the back hub from the bracket is by chain. On Stoeffel's machine a kick-starter is fitted, consisting simply of a pedal and free wheel on the counter-shaft, and this seems to work very well indeed. The back hub contains a two-speed gear known as the Riviere. It is certainly a very neat and quite light-looking job, and works on the epicyclic principle. The brakes for this gear are entirely enclosed. The clutch is operated by a pedal on the left footrest, and the change-speed by a small lever on the handle-bar. The engine can be started with the back

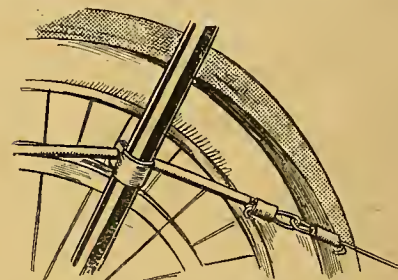


Scott silencer as fitted to the T.T. machines.



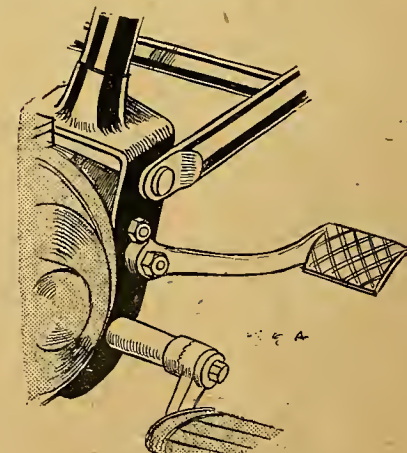
Safety peg on the Armstrong three-speed gear lever of R. Ellis's  $2\frac{1}{2}$  h.p. N.U.T.

wheel on the ground. The lubrication on Stoeffel's machine is combined drip feed and pump. A large oil tank is placed close by the saddle and discharges through an adjustable sight feed on the timing gear case to the crank-chamber. On Slatter's machine, pump feed only is fitted, and, indeed, it differs in a good many respects from the other. For

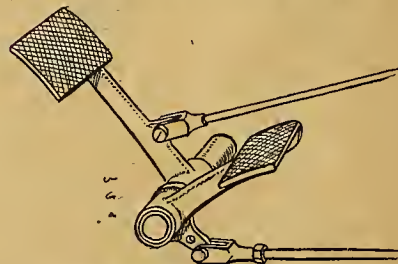


An effective type of rear brake.

instance, really good brakes are fitted, and an Amac carburetter. The accompanying sketch shows what a French racing man considers an ideal form of brake. It is simply a piece of copper tube bent into a circle threaded on a steel wire, attached *à la* aeroplane, and passed round a drum. The wire is connected direct to the pedal. As a means for pulling the machine up, this crude device certainly acts most effectually, but does not appeal to English motor cyclists. It is in matters of this kind that Mr. G. N. Higgs is so discriminating—he knows the little weaknesses of French manufacturers, and he takes good care that they do not figure on his Alcyons.



The pedal brake on J. R. Haswell's Triumph.



The double brake pedal on Hugh Mason's  $3\frac{1}{2}$  h.p. twin Matchless-Jap.



# Ascending Bwlch-y-Groes (Dinas Mawddwy side)



Noel Brown (2½ h.p. Hazlewood) half-way up the Pass.

AS mentioned last week, about thirty members of the Liverpool A.C. recently attempted Bwlch-y-Groes. The start was 200 yards below the hairpin bend, which proved too much for about half the riders, and most of the remainder were stopped by the loose stones near the top. In addition to those already mentioned as having made successful climbs, C. Hobbs, riding Philpott's 2½



A 7 h.p. two-speed Indian, with passenger on the carrier, one-third of the way up.

the cover of the magneto contact breaker, and had to tie the spring down with string.

Eleven solo riders have now accomplished the climb—those previously mentioned and also F. W. Newsome (Triumph), S. Wright (3½ h.p. Humber), A. S. Lloyd (Triumph), and M. Glasgow (Triumph). Two sidecar drivers have also been successful, R. Lord (6 h.p. Rex sidette) and J. Mills (6 h.p. Epfield sidecar).

We are, of course, referring to ascents of the Bwlch-y-Groes pass on the more difficult side, viz., that nearest Dinas Mawddwy. The climb begins in the Dovey Valley near Pont-y-Pennant, and rises nearly 1,200 feet in about two miles.



S. W. Philpott (2½ h.p. twin Humber) above the hairpin corner

twin Humber, also made a clean ascent, and J. Edge, who borrowed a similar machine and rode 100 miles to the hill, did the same, but unofficially. Noel Brown (2½ Hazlewood) took a passenger up on his carrier for about half the distance, stopped and dropped his passenger, and then successfully completed the ascent without assisting his engine in any way, but time did not permit a solo attempt being made, in which the feet must not touch the ground during the climb if the rider is to qualify for a silver medal.

Mrs. Baxter, the only lady to attempt the ascent, rounded the bend successfully, but failed to reach the top. On going down for a second attempt she lost



## OCCASIONAL COMMENTS.

By "IXION."

**The Future of the T.T.**

Nobody can doubt that the T.T. races still play a very valuable function in the design of motor cycles. A prolonged road race provides more information both in regard to theoretical design and practical metal-  
 rigry than any other kind of test; and if we were able to consult the interests of the pursuit, viewed either as a sport or as an industry, the future of the T.T. would be assured.

As a matter of practical politics, however, the future of the T.T. is primarily a financial question. Few can seriously criticise the trade for signing an abstinence bond. The expense of competing is extraordinarily heavy, and the race withdraws the cream of a factory testing staff from headquarters at a time when their presence is urgently needed.

Several firms have a long start of the rest in racing experience, and only the winners can hope to recoup themselves for their outlay. Price competition is excessively keen nowadays, and shareholders have to be considered.

The real question is whether the expenses of future races can be approximately balanced without the aid of sixty or more heavy trade entry fees; and the answer lies with amateurs; partly with the racing amateur, who is willing to compete at heavy expense to himself (I rule out the shamateur), and partly with the tourist amateur, who is willing to subscribe a guinea or so to assist the evolution of the industry, and to provide himself and his friends with a very sporting spectacle.

Shamateurism can only lead to a stiffening of the trade bond, or other restrictive measures; paucity of public subscriptions will saddle the A.C.U. with a heavy loss. The repetition of the race is certainly in jeopardy at present; and I should not be surprised if a 1913 race were made dependent on large guarantees from the motor cycling public. I imagine there must be a deficit on the 1912 races; that the trade will again formally abstain in 1913; and that the A.C.U. cannot continue to make a loss indefinitely.

**Handle-bar Control of Clutch and Gear.**

Wherever motor cyclists meet, there has lately been much controversy about the proper location of clutch and gear controls. From every point of view opinions appear fairly unanimous, that if the gear be foot controlled it should be of a type where the clutch is embodied with the gear, as at starting it is helpful to "leg" the machine, both to ease the pick-up with a poor clutch or uphill, and to balance the machine.

I see no reason whatever why all separate gear controls should not be immediately transferred to the handle-bar. There is nothing I loathe more than having to dive under the flaps of my waterproof jacket to find a gear lever, while I am simultaneously hard pressed to keep the machine vertical on a stony hair-pin, and to set the carburetter levers accurately for a clean pick-up round the bend. Moreover, there is very little strain on the control of a well-designed modern gear; old-fashioned gears certainly required some pressure and a great range of lever travel, but the up-to-date gear is usually no more awkward to operate than an ignition switch.

It appears to me inevitable that before long all separate gear controls will be on the handle-bar. The question of the clutch control is less simple. There is invariably a severe strain on the connections, and a very substantial lever and bracket would be necessary. I have had heartrending experiences with flimsy h.b. clutch controls which stripped, twisted, broke, and stretched wires. I very much prefer the h.b. clutch control for starting, but for momentarily freeing the engine when negotiating a bad bend the pedal is more suitable, as any manipulation of a handle-bar lever requiring some strength is apt to upset the steering. On the whole, my vote would be given at present to hand control for the gears, and foot control for the clutch.

**A Needed Legal Reform.**

No doubt many motor cycle journalists desire a small reform in the registration laws, the need of which is frequently brought home to me. Manufacturing concerns are continually sending me machines on loan asking my opinion on some engine, frame, carburetter, or gear. The registration laws forbid them to provide me with trade numbers.

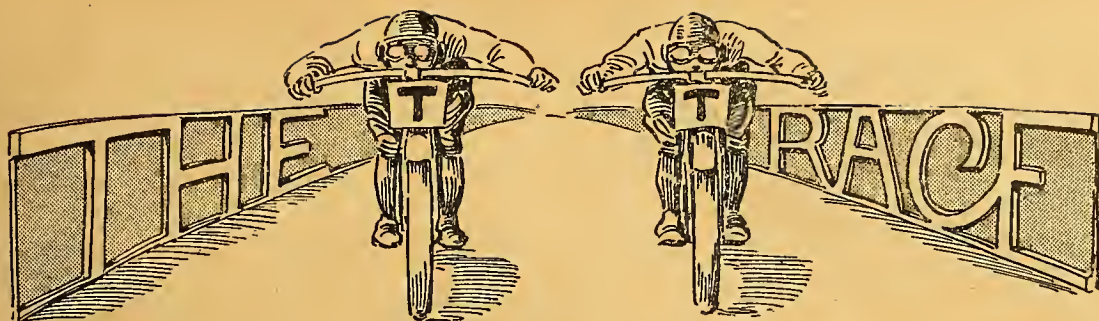
The factory tester brings the machine with red numbers clipped over black blank plates; arriving at my house he leaves me numberless, slipping the red plates in his pocket. I am not supposed to use my private numbers for two different machines; either simultaneously or consecutively, but it is absurd to ask me to register a machine that is lent to me for a week.

Consultants and journalists surely require a special clause in the registration orders, permitting them to hold an "omnibus" number at a slightly increased fee, so that they can attach it to any machine temporarily entrusted to their hands.

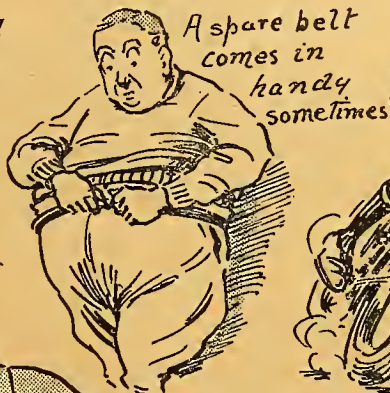


Pte. H. H. Wardle (34 h.p. Rudge), a despatch rider attached to the Shropshire Yeomanry.

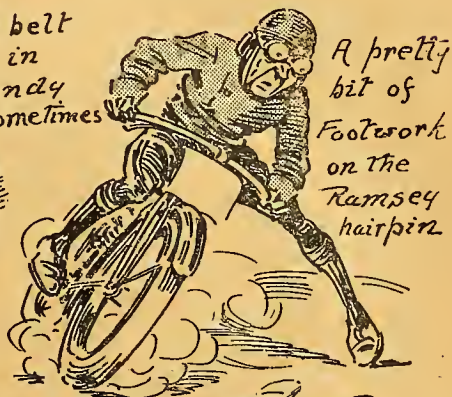




Taking a bend  
and a risk.



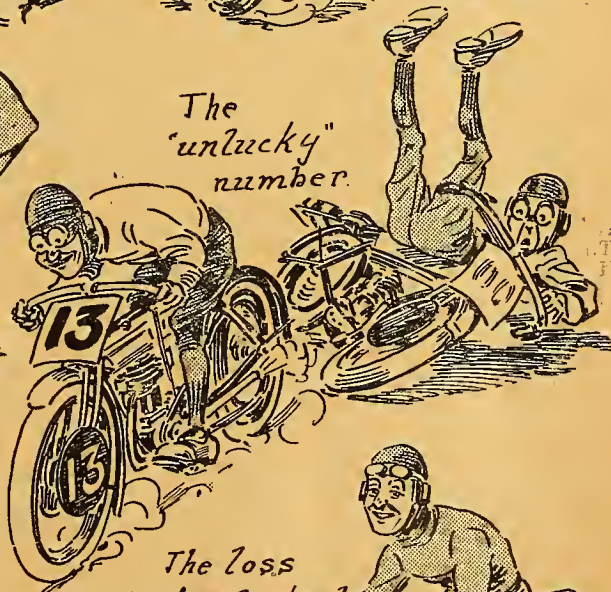
A spare belt  
comes in  
handy  
sometimes



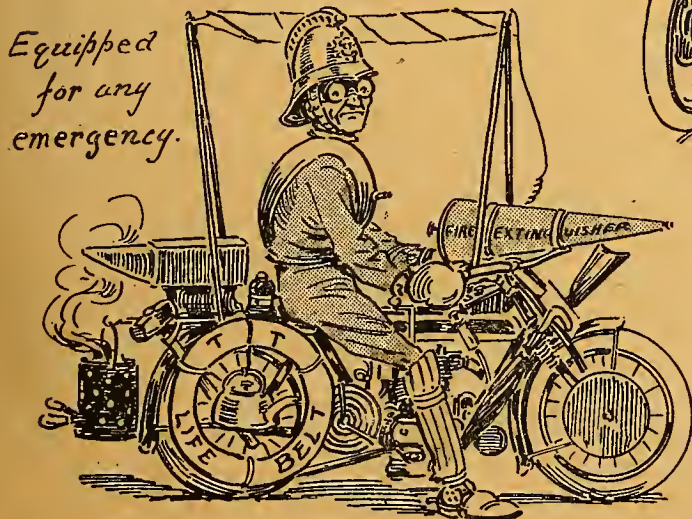
A pretty  
bit of  
Footwork  
on the  
Ramsey  
hairpin



Critics



The  
"unlucky"  
number.



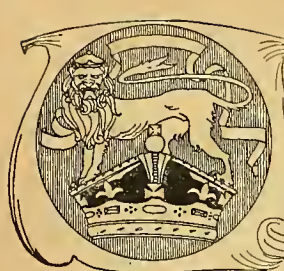
Equipped  
for any  
emergency.

The loss  
of a front wheel  
need not  
stop you  
if you have  
a number  
plate.

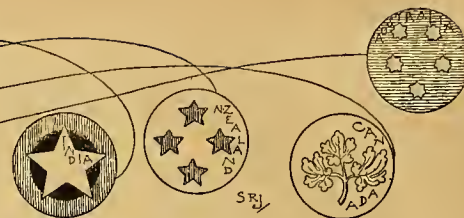


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# CURRENT CHAT



## TIME TO LIGHT LAMPS.

July 4th	...	9.16 p.m.
" 6th	...	9.15 "
" 8th	...	9.14 "
" 10th	...	9.13 "

## Police Traps.

Motor cyclists riding on the road between Manchester and Huddersfield are advised to go very carefully through Failsforth.

## No Motor Cycles at the Paris Salon.

Motor cycles will not be exhibited at the Paris Salon this year. At the conclusion of a long article, in which it voices its displeasure upon this deplorable state of affairs, *La Revue de l'Automobile*, an important French technical journal, says: "We have touched upon almost virgin soil, on which we have worked and fertilised, and have sown with good seed, full of promise for the harvest; now the fruits are ripe, we retire hat in hand before the English, who come to gather in the results of our labours. Poor France!"

## Grand Prix de Turin.

The results of the above Italian 100 kilometres road race, held on the 16th ult., are:

Class I. (250 c.c.).—Luschi (S.I.A.M.T.), 1h. 48m. 41½s.

Class II. (250 to 334 c.c.).—Rava (S.I.A.M.T.), 1h. 29m. 53½s.

Class III. (334 to 500 c.c.).—D. Ferrera (Ferrera), 1h. 11m. 15½s.

Class IV.—Bellorini (Ferrera), 1h. 16m. 36½s.

The team prize, awarded to the fastest complete team, was gained by Scales, and two Italian riders on S.I.A.M.T.'s. Mr. Scales is the son of the manager of the London agency for this machine.

Thirty-nine started, and the fastest time gives a speed of 52.33 miles per hour.

## Auto Cycle Union Notes.

**THE DEFINITION OF A PRIVATE OWNER.**  
—This matter is receiving earnest consideration at the hands of the Auto Cycle Union. One rider whom the Union has reason to believe is not a *bona-fide* amateur will be, in future, refused entry to competitions as a private owner, and a meeting will be called in the Midlands shortly at which manufacturers and club secretaries will be invited to attend to discuss this important matter thoroughly.

**MEMBERSHIP.**—Since the last meeting of the committee, twenty full members and 395 touring members have been elected. 148 members have been brought in by clubs newly affiliated, and 256 through increase of membership of clubs already affiliated. This makes a total increase of 819.

## Scottish Auto Cycle Union and the A.C.U.

Formal notice is being given to terminate the agreement between the A.C.U. and the Scottish Cyclists' Union, and an agreement will shortly be entered into between the Auto Cycle Union and the new Scottish governing body.

## Stolen Machines.

The two Rudge multis mentioned last week as having been stolen from a garage at Stamford Hill have been recovered. They were traced to a stable at Edgware, and the thief has been arrested. Two other motor cycles were found with them.

## British Motor Cycles in Canada.

British motor bicycles scored heavily in the Toronto Motor Cycle Club races, on the half-mile dirt track at Toronto, Canada, on Saturday, June 8th, which were witnessed by 11,000 people.

N. Newport (Triumph) captured two events, a five mile private owners' race

FUTURE EVENTS	
July 6.—Dublin M.C.C. Open Hill-climb	
" 15.—Irish Open End-to-end Reliability Trial.	
" 18.—Oxford M.C.C. Open Speed Trials.	
" 20.—B.M.C.R.C. Race Meeting.	
" 20.—Liverpool A.C.C. Open Speed Trials.	
" 20.—South Wales A.C., and Cardiff M.C. Open Hill Climb at Caerphilly.	
" 27.—R.A.C. Associates' Gala Day at Brooklands.	

and a five mile "Tourist Trophy" contest. Triumphs also finished second and third in the former race, while in the latter Newport won from several American mounts. Newport's best time was 7.13m.

A feature of the meet was the riding of Bob Barton (Rudge), who travelled exceedingly well, but whose chances were spoiled by spectacular spills. Barton found it rather difficult to negotiate the turns on the small oval, but showed considerable nerve and skill nevertheless.

The first sidecar race ever put on in Canada, was run off at this meet, the result being entirely in favour of British motor cycles. Percy Barnes (Triumph), the winner, rode the three miles in 5.03m., with A. F. Astley (Triumph) second, and M. Amoss (Rudge) third.

The big twenty-five mile race was won by Harold Cole, the seventeen-year-old Canadian champion, on an Excelsior. Cole rode twenty-five miles in 30m. 54½s., establishing a new Canadian record

## SPECIAL FEATURES.

## TOURIST TROPHY RACES.

Detailed Illustrated Description.

## EXPLORING EXMOOR.

## Proposed Amateur Motor Cyclists' Association.

A meeting will be held at the A.C.U., 89, Pall Mall, W., to-morrow evening, Friday, at eight o'clock, to discuss the question of the formation of an amateur motor cyclists' association. Mr. H. P. Harding will be in the chair. Further particulars can be obtained from Mr. C. C. Cooke, Rose Cottage, North Mumps, Hatfield, Herts.

## Army Manœuvres, September, 1912.

At the request of the War Office, the A.A. and M.U. (Motor Cycle Section) is arranging for sixty motor cyclists to serve as despatch riders with the Blue Force from the 14th to 20th September. The allowances, etc., will be as follows: (a.) Third class railway fares for cyclists and conveyance of their motor cycles between their homes and the manœuvre area. (b.) Cost of messing in camp, or a subsistence allowance at the rate of 8s. per diem (in lieu of payment of bills for food and lodging at hotels). (c.) Special allowance of 8s. per diem, not including days on which train journeys only are performed, to cover cost of petrol and upkeep of motor cycle, including insurance of machine against accidents. All motor cyclists who are willing to volunteer for service are kindly requested to send their names to the A.A. and M.U., Caxton House, Westminster, S.W., as early as possible.

## Paris-Liege Run.

A sporting French newspaper, *L'Aero*, and the *Journal de Liège*, are organising a 250 miles run from Paris to Liège on the 7th inst., under the auspices of the Moto-Club Liégeois, and under the general rules of the A.C.F. A hill-climb will take place at Bouillon, which will be decided on A.C.U. formula. Every competitor who reaches the destination with full marks will receive a gold medal from *L'Aero*. Several other cups and prizes are offered. The route (which must be ridden in a day) is: Rheims, Sedan, Bouillon, Paris, Laroche, Aywaille, and Liège. The entries stand as follows: N.S.U. (eleven machines), Sarolea (eight), F.N. (seven), Alcyon (four), Rudge-Whitworth (three), Scaldis (one), New Hudson (one). Seventy entries are expected.

The minimum speeds for sidecar machines have been reduced from 36 to 32 kilometres an hour, so as to give the 3½ h.p. machines a chance. Special arrangements are being made to enable foreign competitors to take part without the necessity of paying Customs deposits.





## THE JUNIOR RACE.

### Examination of the Machines.

### Meeting of Competitors and Officials.

ON Thursday morning the competitors in the Junior Race met at Woodlands, where in a field adjacent to the main road the machines were arranged, each with its back wheel opposite a post bearing its number. The duty of making the examination was vested in a committee of officials who had agreed to undertake this work. This committee consisted of Messrs. L. A. Baddeley, A. V. Baxter, S. W. Carty, H. W. Fortune, G. A. Gregson, F. Scriven, and A. H. Priestley, under the leadership of Capt. A. H. Davidson, R.E. But of this number only the chief examiner and Messrs. Priestley and Baxter turned up; consequently the whole of the work fell into the hands of these three, who were aided by Mr. E. P. Greenhill. In all cases save two, the front and back wheels and frame were sealed, the two exceptions being the Alcyons, the

engines of which bore no number. Besides the N.S.U.'s the only absentee was Hugh Mason's  $2\frac{3}{4}$  N.U.T., fitted with the only  $2\frac{3}{4}$  overhead twin J.A.P. engine in existence. Mason had finished his practice successfully, and on his way to the garage his frame came to grief.

In the evening there was the usual meeting of competitors and marshals, who were addressed by Mr. J. R. Nisbet, the clerk of the course. In addressing the former, Mr. Nisbet urged them to turn up punctually and to drive with due consideration for one another. He pointed out that only one helper was allowed to each machine at the depots, who might only give assistance in the distribution of oil, petrol, water, covers, or tubes. Spare belts, if wanted, had to be carried. A post at Keppel Gate, though apparently not really dangerous, had been painted white.



Scene at the start. P. J. Evans ( $2\frac{1}{2}$  h.p. Humber), last year's winner, the first to start. He suffered ill-luck.



### The International Motor Cycle Tourist Trophy Races.—

He also announced that competitors would be despatched singly at one minute intervals. A few questions, asked by competitors, were satisfactorily answered. The marshals then received their instructions. A question concerning the size of the Douglas engines was brought up during the afternoon, as the capacity, worked out on the dimensions given (61 x 60 mm.), gave a slight excess over 350 c.c., but it was pointed out that 61 mm. was the nearest metrical equivalent and that actually the cylinders were to size. The engine sizes could, if necessary, be verified after the race.

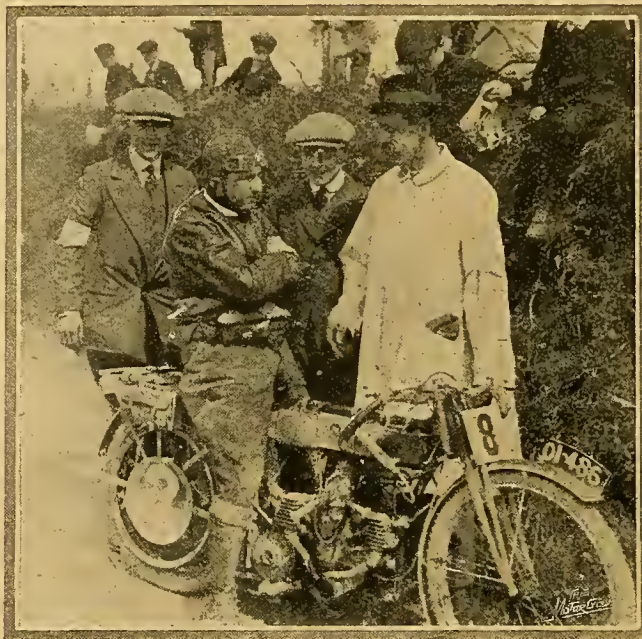
### The Day of the Race.

Friday morning was beautifully fine, and the weather looked distinctly better. The sun shone through the clouds and a light westerly breeze was blowing. There were mist and rain on the mountains, however, and it looked rather threatening to the westward. Later on, just as the men were lining up for the start, there came a torrential downpour which looked like lasting, but ere the lap was completed it cleared up, and remained beautifully fine for the rest of the day. Petty and O'Donovan were the first riders on the course. The arrangements were excellent. The depot close to the timing box was provided with two heaps of sand and two shovels in case of fire. Every facility was given to the press, the scoring board was admirably worked by Mr. A. H. Priestley, while it goes without saying that Mr. J. R. Nisbet made an excellent Clerk of the Course. It might almost be said he was better than usual, as, thanks to the excellent secretarial work done

by Mr. T. W. Loughborough and Mr. H. P. Beasley, his assistant, the clerk of the course was able to throw his whole energy into the duties he was specially appointed to carry out. As the time for starting approached, the competitors were arranged in order of starting in Selburn Road, just off the course. The police exercised their duties in a tactful and excellent manner, while one constable was seen pinning a badge on a competitor. Col. Madoc, the Chief Constable of the Island, who watched the race from the timing box, first went round the course, taking with him Mr. A. H. Cubbin, secretary to the Highway Board, who told us he had found the roads in quite good condition, except in one or two places. Stoeffel and Slatter were rather late arrivals, but both started. They were mounted on four-valve machines, and Stoeffel's engine had a Gobi carburetter, a new French make much patronised by aviators. These carburetters, Stoeffel told us, are automatic, and not sensitive to change of temperature.

As reported previously, there were four absentees—the three N.S.U.'s and Mason. Just before ten o'clock Mr. Nisbet and the two timekeepers, Messrs. A. V. Ebbelwhite and F. T. Bidlake, took up their positions in the pouring rain, and at ten precisely Evans, last year's winner, was given the word to go, amid the cheers of the spectators. His engine appeared to misfire at the start. Bailey, the hope of Australia, got away in splendid form. Kickham, another rider of a Douglas, Harrison Watson, and Newman also started well.

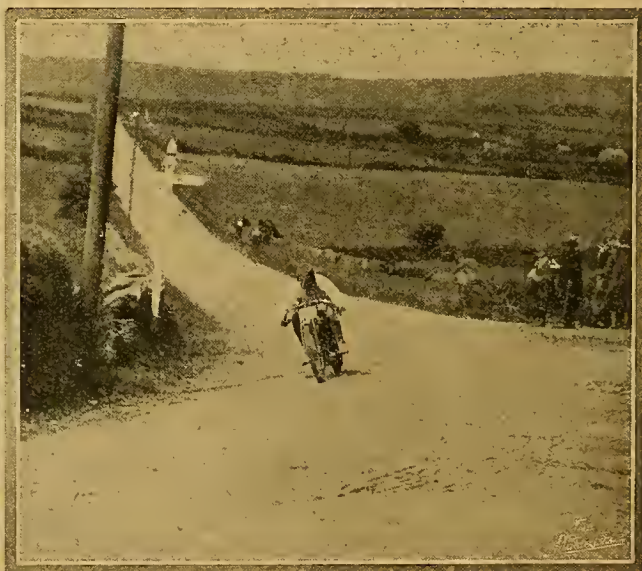
Ellis, while the timekeeper was counting out the seconds before he had to start, had his attention called to a loose terminal on his magneto, and he was still gazing at it when the word to go was given, consequently he lost two minutes. Having fixed the terminal, he went off with his stand down, and had to stop to fasten it up. Stoeffel came



James Stewart of Belfast (Douglas), fourth to finish, chatting with Noel E. Drury, an old T.T. rider, also from the Green Isle.



E Kickham (Douglas) on the bend at the summit of Bray Hill.



Robt. Ellis (2½ h.p. N.U.T.-Moto-Reve) after descending the mountain road.



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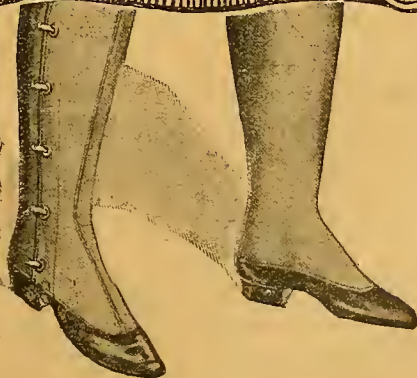
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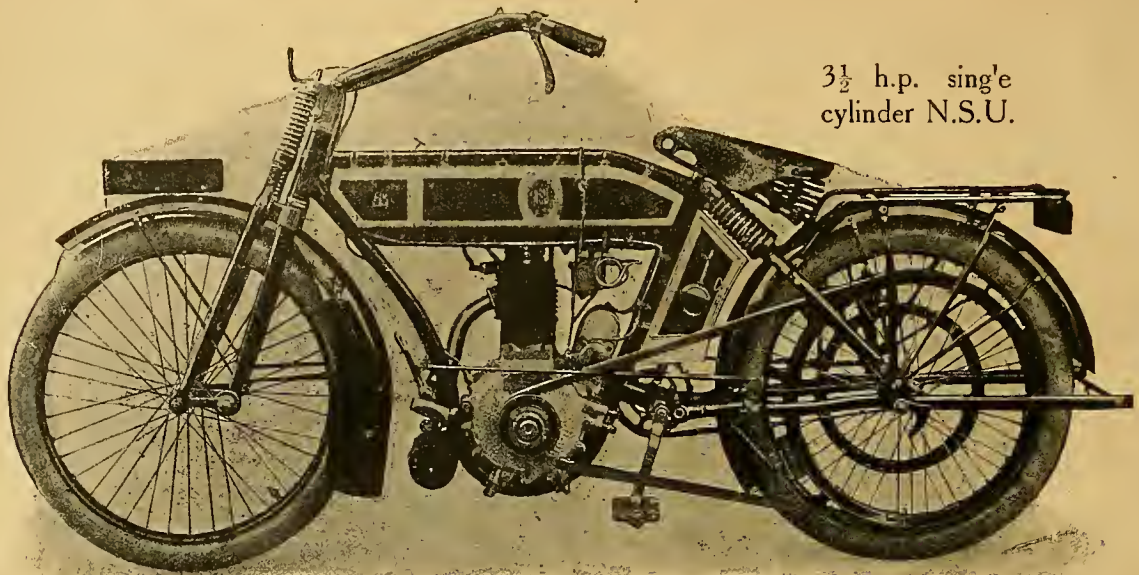
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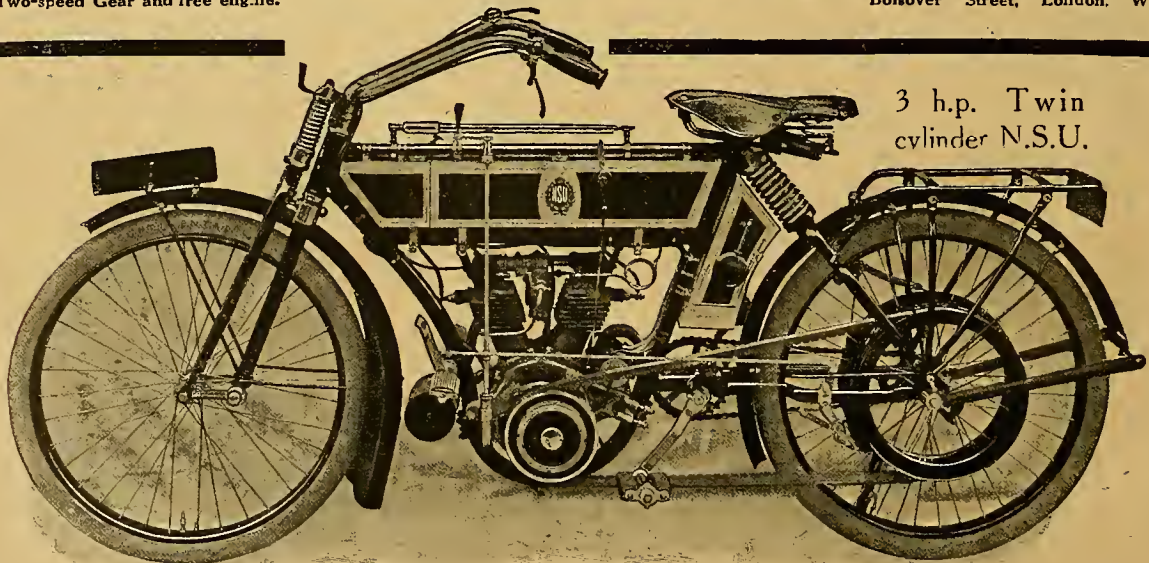
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**The International Motor Cycle Tourist Trophy Races.—**

up with a newspaper over his machine to keep the rain off. At the word "Go!" his carburetter caught fire, but J. Griffiths saved the situation with his cap. The healthy bark of W. H. Bashall's Douglas as he left the starting line was most remarkable, and the engine told its tune in no uncertain tones. Owen was late starting, as he had to tighten his belt. Creyton went off on one cylinder, and as he disappeared from view the rain stopped, much to everyone's relief, and the weather began to improve. After an interval news began to filter slowly through the telephone.

**Bailey Leads in the First Lap.**

At about 10.40 it was announced by Mr. Nisbet on the telephone that Bailey had passed Ramsey, while Kickham, Newman, Watson, and Bashall were not far behind. Then it was announced that Watson had broken a belt near the above named town, and a little later that Bailey, and after him Kickham, had passed the Bungalow. The excitement rapidly grew, and presently Bailey flashed by the timekeeper's box with a spare belt dangling dangerously from his luggage carrier. Kickham stopped at the depot for replenishments. This he did every lap, and thereby lost considerable time. Shortly after Bailey had gone by a clicking was heard in the timing box for several seconds.



P. W. Owen (Forward) at Hilberry Corner. He finished fifth.

Major Lloyd, who was acting as timekeeper's auditor, ticked out a lightning sum on his calculating machine, and announced that Bailey had covered the lap at a speed of 38.03 miles an hour. These announcements added greatly to the interest of the race, and were much appreciated by those who heard them. The times and speeds in miles per hour at the end of the first lap were as follows:

		Lap speed	
		h. m. s.	m.p.h.
1.	S. L. Bailey (Douglas) ...	59 10	= 38.03
2.	W. H. Bashall (Douglas) ...	1 2 10	= 36.19
3.	H. C. Newman (Ivy-Precision) ...	1 2 34	= 36.06
4.	E. Kickham (Douglas) ...	1 2 56	= 35.85
5.	H. J. Cox (Forward) ...	1 10 28	= 31.93
6.	D. O'Donovan (Singer) ...	1 11 54	= 31.29
7.	P. W. Owen (Forward) ...	1 12 22	
8.	R. Ellis (N.U.T.) ...	1 17 5	
9.	E. V. Pratt (O.K.-Precision) ...	1 17 18	
10.	H. Petty (Singer) ...	1 23 29	
11.	J. Haslam (Douglas) ...	1 25 35	
12.	J. T. Bashall (Humber) ...	1 32 51	
13.	D. M. Brown (Humber) ...	1 46 2	
14.	R. G. Mundy (Douglas) ...	1 58 34	
15.	P. J. Evans (Humber) ...	2 4 29	

Bailey was travelling so well, his chances of winning seemed to be of the brightest, while Bashall, H. C. Newman, Kickham, Cox, and O'Donovan, whose machine had one of the smallest engines in the race, were all making good per-



D. R. O'Donovan (2½ h.p. Singer) at Ballig Bridge. This is the point where the machines usually leap off the ground, but the jumps were hardly perceptible in the Junior race.

formances. An idea of how well Bashall was travelling may be gathered from the fact that he started fourteenth and passed fourth in the first round, while Kickham, who started eighth, passed second. The muddy condition of the riders showed that the roads were wet and greasy in the more shady places on the course.

**Hopes of Australia and Manxland.**

News presently came to hand that Watson and Creyton were walking home. Eventually both arrived together at the depot, and told how both their machines had come to grief near Keppel Gate—Watson through timing gear trouble, Creyton through a seized engine. Bailey had stripped his gears at the hairpin bend near Ramsey, and now the chances of Manxland and Australia were lost. Poor France, who supplied the only two foreign-made machines,



H. C. Newman (2½ h.p. Ivy-Precision) speeding along the road to Woodlands. He was among the first three for two laps, but burst a tyre on the third circuit.



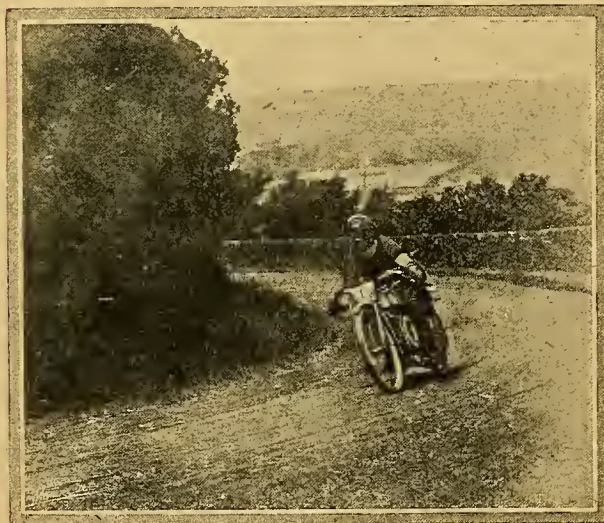
### The International Motor Cycle Tourist Trophy Race.—

was hopelessly out of it already, as neither Aleyon finished the first round.

The second lap order was as follows:

		Lap speed	
		h. m. s.	m.p.h.
1.	W. H. Bashall (Douglas) ...	1 59 1	= 39.58
2.	E. Kickham (Douglas) ...	2 1 59	= 38.10
3.	H. C. Newman (Ivy-Precision) ...	2 2 29	= 37.55
4.	H. J. Cox (Forward) ...	2 9 33	= 38.03
5.	P. W. Owen (Forward) ...	2 22 50	= 31.93
6.	R. Ellis (N.U.T.) ...	2 24 50	= 33.21
	E. V. Pratt (O.K.-Precision) ...	2 29 13	
	J. Stewart (Douglas) ...	2 30 1	
	H. Petty (Singer) ...	2 32 37	
	D. R. O'Donovan (Singer) ...	2 40 54	
	J. Haslam (Douglas) ...	2 52 6	
	J. T. Bashall (Humber) ...	2 52 14	
	P. J. Evans (Humber) ...	3 14 31	
	R. G. Mundy (Douglas) ...	4 24 21	

At this stage Kickham had his usual stop at the depot, but wasted no time there. Newman burst a tyre beyond Quarter Bridge, and then pushed and rode on the rim to Ballacrairie, thereby losing his third position. Ellis passed, going steadily. Then Stoeffel walked in, reporting he had



E. Kickham (Douglas) at the Gocseneck on Snaefell.

had a puncture and valve trouble. As the said valve took him two hours to dismount, he gave up. Slatter was reported to have had a fall. There was a long interval after the first three had come through.

The third lap results were:

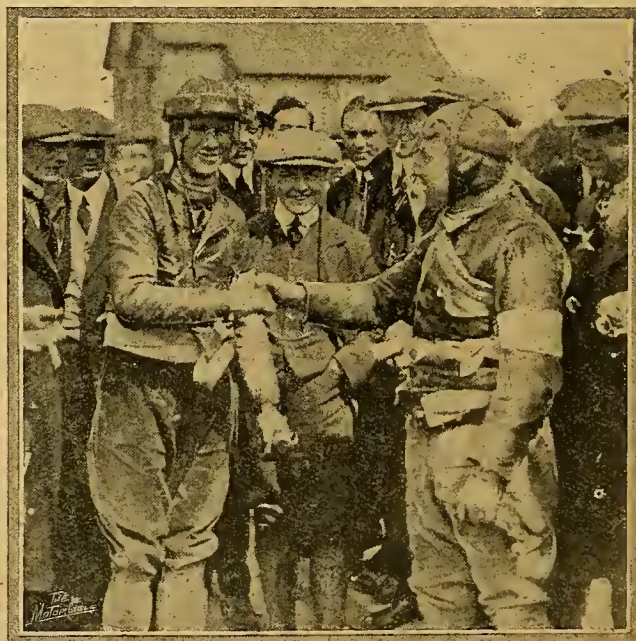
		Lap speed	
		h. m. s.	m.p.h.
1.	W. H. Bashall (Douglas) ...	2 53 1	= 41.20
2.	E. Kickham (Douglas) ...	2 57 43	= 40.37
3.	H. J. Cox (Forward) ...	3 9 31	= 37.52
4.	P. W. Owen (Forward) ...	3 28 45	= 34.13
5.	R. Ellis (N.U.T.) ...	3 30 28	= 34.28
6.	J. Stewart (Douglas) ...	3 30 41	= 37.09
	H. Petty (Singer) ...	3 39 16	
	J. Haslam (Douglas) ...	3 57 1	
	E. V. Pratt (O.K.-Precision) ...	4 3 25	
	D. R. O'Donovan (Singer) ...	4 9 51	
	H. C. Newman (Ivy-Precision) ...	4 24 44	
	P. J. Evans (Humber) ...	4 32 8	
	J. T. Bashall (Humber) ...	5 6 26	

This was J. T. Bashall's last appearance, as sooted plugs and lubrication trouble, followed by a burst tyre on Bray Hill, which nearly resulted in serious consequences, put him out of the running.



Harold J. Cox (Forward) dropping down Bray Hill. The starting and finishing point is hidden among the trees in the background.

It was now time to expect the winner, and telephone messages from Ramsey, the Bungalow, and Willaston announced his progress, and that Kickham was close behind him. At last he came in sight and, going as well as ever, passed the line amid the cheers of the spectators, while Kickham came in second by 4m. 37s. The crowd immediately became somewhat too anxious to get on to the course, but the stentorian voice of the clerk of the course through the megaphone, followed by a sharp rebuke to the marshals to do their duty, incited the latter to act promptly and keep the people off the road. Just after he came in Bashall's machine was pushed off the course by Mr. Albert, followed by Captain Nicholl, to the examination yard, while



ALL SMILES The two leaders, W. H. Bashall and E. Kickham—both amateurs—shaking hands at the finish. They rode 2½ h.p. Douglas machines, and were separated by 4 min. 37 secs. only.

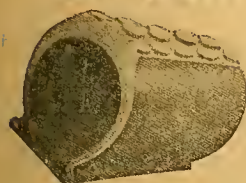


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Having purchased a manufacturers' stock of new Covers and Tubes, we are able to offer the following makes at greatly reduced prices.

Clincher A. Won rubber-studded covers, 26 x 2 1/2 in., 29/11, usual price 31/7. Westwood rubber studded, 26 x 2 1/2, 23/11, usual price 30/6. Westwood heavy tri-car, 26 x 2 1/2, 35/-, usual price 47/-; ditto, 26 x 2 1/2, 38/6, usual price 57/-. Clincher Inner Tubes, 26 x 2, 6/11, usual price 11/4. Westwood, 26 x 2 1/2, 7/3, usual price 9/9; ditto, heavy tri-car, 9/3, usual price, 11/9. All New Goods. Postage on covers, 8d. extra, tubes 4d.

## THE HUNT NEW MODEL COMPACT VALISE.



Length, 18in.; width, 11in.; depth, 6in. Manufactured of finest cowhide. Strengthened inside with strong hide-covered metal bands, and at the bottom with two wood batons which prevent bag being chafed by carrier. The inside is lined with a strong twill, and the outside is fitted with two spring lever locks and handle. The bag is strongly riveted throughout, and it is impossible for it to lose its shape. The handle enables it to be also used as a Suit Case. Fitted with two leather straps 48x7/16 in. for attaching to carrier. The motor cyclist can carry sufficient clothing inside this case to last him for a fortnight's tour. On arriving at his hotel, the bag can be taken to his room as an ordinary portmanteau. Finished in dark nut-brown leather. Price 30/-.

## THE WESTWOOD specially prepared Repair Bands.



For use on outside of cover after same has burst or been gashed. The outside edges are tucked inside rim, i.e., between rim and cover. Price 1/-, postage 2d. Ditto for inside, 8d.

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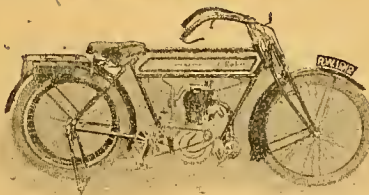
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By means of the compound action the stoutest spring is easily raised by a slight turn of the aligned nut, leaving both hands free.



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1912 3 1/2 h.p. Multi-speed Model, with free engine, multi-plate clutch, pedal engine starter, and multi speed gear; price £60 0

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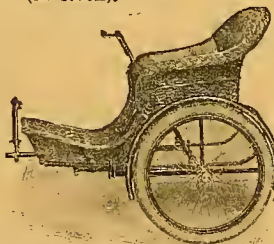
TRIUMPH.  
1912 3 1/2 h.p. Free-engine Model ..... £55 0  
DOUGLAS (in stock).  
1912 2\* h.p. Twin Model G ..... £41 0

SECOND-HAND MACHINES.  
Moto-Reve, 1911 model, 2 1/2 h.p., twin-cyl., fitted with the Villiers free-engine hub, complete with tools and spares; price 32 Guineas. Cost £60, condition as new

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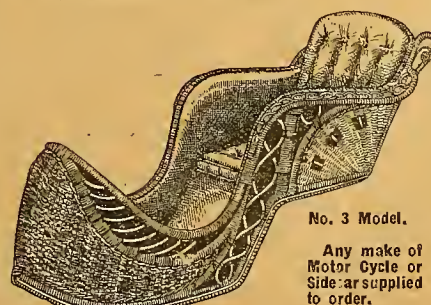
Upholstered wicker chair, cushion, detachable clips, 26 x 2 1/2 in. tyre. A strong and reliable sidecar at a popular price, stocked to fit all motor cycles.



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Any make of Motor Cycle or Sidecar supplied to order.

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Motor Cycle Box Spanners.

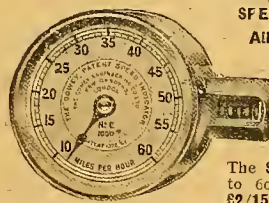
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## SPEED INDICATORS.

All Speed Indicators fitted free.



The Cowey registers from 5 to 40 and 10-65 miles per hour. Price £4/4/0.

The Stewart registers up to 60 miles per hour, £2/15/0, ditto with Trip Recorder, £3/10/0. The Jones registers up to 60 miles per hour, £3/3/0, ditto with Trip Recorder, £4/4/0.

"COVEROLE." For Repairing Leaky Petrol Tanks, Pipes, Unions, etc.



DIRECTIONS.

For Worn Unions.—Paint the treads and cone liberally with Coverole, screw up tightly, and give a final application to the outside.

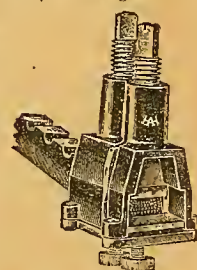
For Cracked Pipes, etc.—Smear a piece of paper, canvas, tape, or similar material with Coverole, and wrap tightly round the pipe. Price 1/- Postage 2d.

## THE H.H. HUNT BELT PUNCH AND CUTTER.

Both the cutter and punch are easily removable for sharpening, and either can be immediately renewed at the cost of a few pence—this is an advantage not to be obtained in any other punch.

Suitable for all size belts.

Price 5/- Postage 2d.



## THE HUNT TOOL BAG.

Size 9 1/2 x 5 x 4 1/2 in.

With Pockets for Oiler Plugs and Springs.

Price 7/6. Postage 4d.



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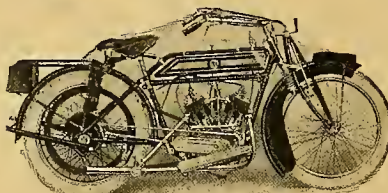



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In the 1912 REX-JAP motor cycle, we have endeavoured to produce a motor cycle that will give satisfactory service under all conditions—a motor cycle with the speed, power, hill-climbing ability, and reliability so essential for comfortable touring—and the letters of appreciation we are receiving every day from PRIVATE OWNERS prove that our effort has been successful.

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## THE DIFFERENCE BETWEEN PALMER CORD & OTHER TYRES

shows itself in the mileage. Read the following  
letter, which is a typical example of :: :: :: :: ::

# PALMER DURABILITY

Plymouth, March 7th, 1912.

Extract of letter from A. E. DYSON, Esq.

I have since done 8,000 miles, not 500 of which distance has been done without sidecar, and am only now fitting a new cover owing to a gash in wall of tyre through riding over a lot of unrolled stones in the dark. I have had about five punctures, and I should think, bar the gash, the tyre would be good for at least another 1,000 miles on back wheel. Anyway, experience is the best test, and in future you may depend my tyres will be Palmers. Bear in mind our Devonshire and Cornish roads are not level tarred roads as around London, but in the majority of cases are very hilly with a loose granite surface.

Write for Price List of 3 grades of Palmer Motor Cycle Tyres and the Privateer.

**The Palmer Tyre, Ltd.,**

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Motor Cycle Tyre Dept.: 103, St. John Street, Clerkenwell, E.C.

In answering these advertisements it is desirable to mention "The Motor Cycle."



## The International Motor Cycle Tourist Trophy Races.—

soon after Captain Davidson, the Rev. E. P. Greenhill, and Major Lindsay Lloyd, with the measuring instruments (which, by the way, are the invention of Mr. T. W. Loughborough), followed.

an excellent sportsman, and it is good to be able to record his win. He is quite impartial as to his choice of makes, as he rides all kinds of machines, and does not continually pin his faith to one firm. Of the two Forwards entered both finished, one third, and the other fifth, while Cox has



The winner, W. H. Bashall (2½ h.p. Douglas), crossing the finishing line. His average speed throughout was 39.65 m.p.h. The excellent lap scoring board is plainly discernible on the left.

Soon after it was announced that the victorious Douglasses did not exceed 350 c.c., which statement was received with cheers. To Kickham went the honour of having made the fastest lap, as he had covered the fourth round at the rate of 41.76 miles an hour, while Bashall's lap had been covered at the rate of 41.23. Truly we owe a debt of gratitude to Major Lloyd for bringing his calculating machine with him, thus enabling the speeds to have been so promptly given out.

The win was a most popular one. We are intimately acquainted with Douglas machines, both past and present, and are thus fully *au fait* with their worth. We have followed the progress of the firm since its earliest days. It has deserved success, and we are delighted that success has been obtained. W. H. Bashall is a keen amateur and

now held third place for two years running. Petty, on one of the smallest engines in the race, came in seventh, and his Singer was the first of the single-cylinders to finish. Newman had indeed hard luck, and but for his burst would have probably finished high up in the list. Evans, last year's winner, had more troubles than he could remember, but he stuck gamely to his task, and the fact that he finished earns him our congratulations. Ellis at one point during the race lost all the screws out of his timing gear case except two. He cut some wood plugs and fitted them in the holes to replace the screws that were missing, and the fact that he finished sixth is proof that he wasted no time. This is a very good example of British grit and perseverance.

## JUNIOR T.T. LAP TIMES AND RESULTS AT A GLANCE.

No.	Name.	Make.	No. of Cyls.	Bore and Stroke. mm.	Gear.	1st Lap.	2nd Lap.	3rd Lap.	4th Lap.	TOTAL. h. m. s.	Speed. m.p.h.
						h. m. s.	h. m. s.	h. m. s.	h. m. s.		
1	W. H. Bashall . . . .	Douglas . . . . .	2	61 × 60	Douglas 2-sp.	1 2 10	56 51	54 0	53 58	3 46 59	39.6
2	E. Kickham . . . . .	Douglas . . . . .	2	61 × 60	Douglas 2-sp.	1 2 56	59 3	55 44	*53 53	3 51 36	38.86
3	H. J. Cox . . . . .	Forward . . . . .	2	56 × 70	S.A. 3-sp. . .	1 10 28	59 5	59 58	56 58	4 6 29	36.51
4	J. Stewart . . . . .	Douglas . . . . .	2	61 × 60	Douglas 2-sp.	1 24 21	1 5 40	1 0 40	58 23	4 29 4	33.45
5	P. W. Owen . . . . .	Forward . . . . .	2	56 × 70	S.A. 3-sp. . .	1 12 22	1 10 28	1 5 55	1 3 9	4 31 54	33.10
6	R. Ellis . . . . .	N.U.T. . . . .	2	53 × 78	A.T. 3-sp. . .	1 17 5	1 7 45	1 5 38	1 1 58	4 32 26	33.03
7	H. Petty . . . . .	Singer . . . . .	1	69 × 80	S.A. 3-sp. . .	1 23 29	1 9 8	1 6 39	1 3 3	4 42 19	31.88
8	J. Haslam . . . . .	Douglas . . . . .	2	61 × 60	Douglas 2-sp.	1 25 35	1 26 31	1 4 55	1 3 4	5 0 5	29.92
9	E. V. Pratt . . . . .	O.K. Precision .	1	70 × 90	S.A. 3-sp. . .	1 17 18	1 11 55	1 34 12	1 12 14	5 15 39	28.51
10	H. Newman . . . . .	Ivy-Precision . .	1	70 × 90	Brampton . . .	1 2 34	59 55	2 22 15	57 43	5 22 27	27.91
11	P. J. Evans . . . . .	Humber . . . . .	2	60 × 60	A.T. 3-sp. . .	2 14 31	1 10 12	1 17 27	1 11 13	5 43 21	26.21
	D. O'Donovan . . . .	Singer . . . . .	1	69 × 80	S.A. 3-sp. . .	1 11 54	1 29 0	1 28 57	Six plugs gave out, also inlet valve trouble		
	J. T. Bashall . . . . .	Humber . . . . .	2	61 × 60	A.T. 3-sp. . .	1 32 51	1 19 23	2 14 12	Lubrication and tyre troubles, sooted plugs.		
	R. G. Mundy . . . . .	Douglas . . . . .	2	61 × 60	Douglas 4-sp.	1 58 34	2 25 47	Puncture on mountain road			
	S. L. Bailey . . . . .	Douglas . . . . .	2	61 × 60	Douglas 2-sp.	59 10	Retired at Hairpin, stripped gears				
	D. M. Brown . . . . .	Humber . . . . .	2	60 × 60	A.T. 3-sp. . .	1 46 2	Pulley bearing				
	J. H. Watson . . . . .	Humber . . . . .	2	60 × 60	A.T. 3-sp. . .	Timing gear trouble, Keppel Gate					
	N. D. Slatyer . . . . .	Aleyon . . . . .	1	65 × 105	Aleyon 2-sp.	Gear trouble, Crosby					
	M. Stoeffel . . . . .	Aleyon . . . . .	1	65 × 105	Aleyon 2-sp.	Valve broke, took two hours to dismount it					
	W. Creyton . . . . .	Humber . . . . .	2	61 × 60	A.T. . . . .	Retired, seized engine, Keppel Gate					

REFERENCE TO GEARS.—S.A. 3-sp. = Sturmey-Archer 3-speed; A.T. 3-sp. = Armstrong-Triplex 3-speed; Brampton = Brampton variable pulley.

\*Fastest lap.



## IMPRESSIONS OF THE RACE FROM QUARTER BRIDGE.

**L**AST year Quarter Bridge was considered to be the most difficult and dangerous corner on the course, as it possesses a right-angled bend immediately following a fairly steep descent from Woodlands. Lately the Manx Highway Board have at considerable expense widened the road over the bridge, and though competitors in practice had taken liberties as a consequence, the cornering at Quarter Bridge was conspicuous for the care displayed. A big crowd assembled at this point.

**The First Fall.**

In the very first lap M. Stoeffel (Alcyon), who, by the way, could not speak a word of English, dashed up to the corner without slackening speed and fell heavily. This was surely a bad start less than a minute from the word "Go," especially as his machine caught fire momentarily at the start, and he was very slow in getting away by means of the clutch. Bailey (Douglas), who started favourite, Harrison Watson (Humber), Newman (Ivy-Precision), Cox (Forward), and Harry Bashall (Douglas) were among the best corner men. J. Stewart (Douglas), the Irish rider, and Robert Ellis (N.U.T.-Moto-Réve) took matters very steadily, and did not encroach beyond the centre of the road—which perhaps was a good fault.

excitement naturally ran high among a little party consisting of the Messrs. Douglas, Armand, and others at Quarter Bridge.

Cox was going splendidly, but his riding position, with back almost erect, caused some comment. One could hardly believe that Bashall could have stopped six times and yet obtained second position. An idea of the wet state of the roads was gained by the bespattered condition of the competitors and their machines. There was again a long interval, and great surprise was evinced at the absence of the Humber team. These riders, it was subsequently learned, were the victims of extraordinarily bad luck, Evans, for instance, the most fancied rider, having a number of stops for plug, belt, and tyre troubles.

**A Long Wait.**

Then followed four or five riders, but the thinning of the ranks had robbed the race of a great deal of interest, and the ordinary spectator was getting bored. This state of affairs got worse as time progressed, for the gaps became longer and longer, and the riders still in the running fewer and fewer. The crowd became somewhat careless, and resented the appeals to keep the course clear whilst no rider was in sight. Bailey was anxiously awaited, as the time he was due passed by but Kickham had gained the lead.



Harry Bashall (2½ h.p. Douglas) at Quarter Bridge, where a big crowd collected. Observe the condition of the road on the first two laps.

Most of the three-speed riders changed to the middle gear on approaching the corner, mainly in order to get away more quickly on releasing the valve lifter.

**Where Some Riders Failed.**

Some were very tardy in picking up speed, and undoubtedly the majority were too anxious to get in the top gear. The winner was a notable exception; he kept his low gear in and raced his engine until it attained a continuous buzz; certainly the speed would be 30 m.p.h. before the high gear went home.

Reports came to hand that Stoeffel had stopped again near Braddon, and a mile or two further Slatton had an enforced stop. There was a long period of waiting after all the starters had gone by, and in some ways it was unfortunate that the course was so long and the competitors so few. At last the riders came round again, but in much slower time than had been expected. The sticky state of the roads between Quarter Bridge and Ramsey troubled them a great deal. Bailey, the Australian, was first round, having passed Evans, the Junior T.T. holder; then followed Kickham, who started eighth and had stopped at the Woodlands depot; Newman, on the single-cylinder Ivy-Precision, and Bashall, the fourteenth; and, after a gap, Cox (Forward). Douglas riders had thus gained an early and convincing lead, so

hotly pressed by young Newman, whose reputation for winning hill-climbs had gained him many admirers. Next came Bashall, Cox, Petty (Singer), Ellis (N.U.T.), Stewart (Douglas), and Owen (Forward).

**Speed and Reliability of the Twins.**

The twins were demonstrating their speed and reliability thus early, for only two single-cylinder riders were now in the running.

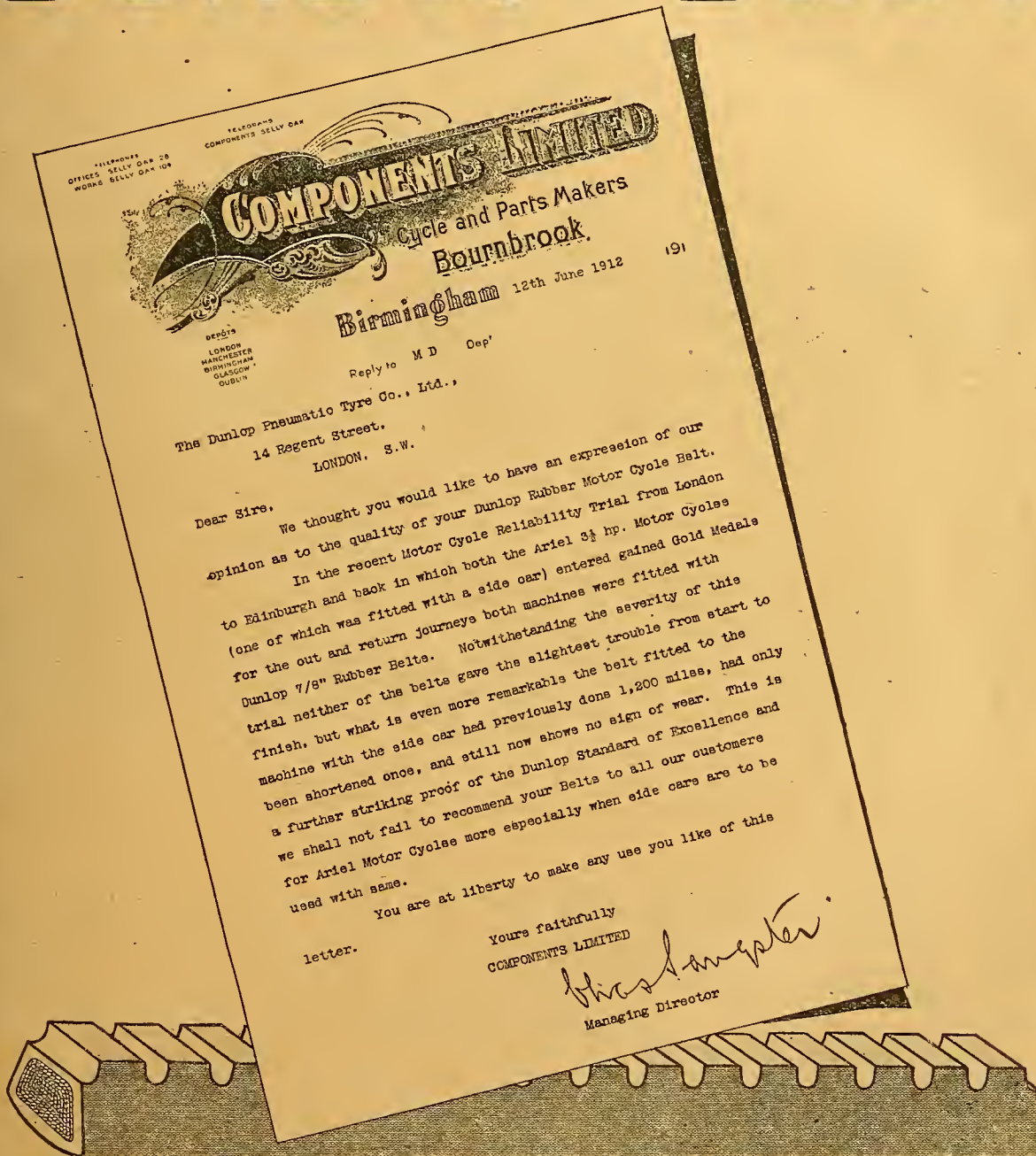
The order on the third lap was unchanged, with the exception that Newman had to give up his duel with Kickham, as he dropped back considerably owing to a burst tyre, and Ellis (N.U.T.) had overtaken and passed Petty (Singer), and Owen (Forward) had crept up a place. How slowly the time passed for those who with pent-up feelings watched for the survivors on the last lap of the thirty-seven and a half miles course can be better imagined than described. When again Kickham, Bashall, and Cox passed in the order named, it was seen that these three would count the winner among them.

Bashall started after Kickham, and had 6m. in hand. Three private owners fighting out a battle of their own is indeed a new feature of T.T. races, and each is deserving of the greatest credit. Their success was most popular.

G.S.



# EXPERT OPINION OF THE DUNLOP BELT



DUNLOP BELTS are made in five sizes:  $\frac{1}{2}$ ",  $\frac{3}{4}$ ",  $\frac{1}{2}$ ", 1", and  $1\frac{1}{2}$ " lengths, from 7' 6" to 9'. Prices from 1s. 9d to 3s 1d. per foot. Full particulars of tyres, belts, etc., in catalogue, post free.

The DUNLOP PNEUMATIC TYRE CO., LTD., Aston Cross, BIRMINGHAM;  
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Branches—London, Nottingham, Manchester, Newcastle, Bristol, Leeds,  
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# Douglas

# Douglas

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## OBSERVATIONS AT CREG WILLEY AND CRONK-Y-BODDY.

**A**T 8 a.m. I made a start for my allotted position on the course (Creg Willey's hill), and on my way out, though no rain was falling, some very dangerous patches of grease had to be traversed, especially under the trees and round sheltered corners. I selected a point on the sharp right-hand bend to watch the corner work, and almost directly afterwards a heavy rainstorm came on, which continued till most of the competitors had passed on their first lap.

At a quarter past ten exactly, the roar of a perfectly-tuned twin was heard approaching, and immediately afterwards Bailey shot by on his Douglas. He took the corner fast and close in, and disappeared up the hill with a final roar. Next came Petty's Singer, which was naturally not quite so fast, as it was handicapped by its engine size. Both Petty and O'Donovan (also on a Singer) had serviceable looking belt guards, which must have proved particularly useful on the first lap. Then came Stewart and Kickham on Douglases, the latter going particularly well, followed in quick succession by Newman (Ivy-Precision), Cox (Forward), and Brown and Watson (Humbers).

Brown stopped before the crest of the hill to shorten his belt and tighten up a plug terminal. This, however, did not take him long, and he was off again in a few minutes. The next few machines passed at longish intervals. W. H. Bashall was particularly noticeable on account of his pace. Evans came along in the twelfth position, and when he passed his engine was missing fire, owing to plug trouble which dogged him all day. Mundy, who was riding the new four-speed Douglas, came up the hill on rather too high a gear, and the engine never attained its maximum revolutions.

**A Well-tuned Engine.**

Pratt (O.K.-Precision) was travelling well, and his machine had a clean healthy bark, denoting a well-tuned engine. By this time the sun was shining brightly, and with the help of a good stiff breeze the road surface was rapidly improving.

Moving to the fast stretch of road which lies between the top of the hill and Cronk-y-Boddy, I caught the sound of a racing single approaching. Could it be Petty's Singer, worked up to first place in the second lap? There was quite a flutter of excitement amongst the little crowd of spectators gathered at the cross roads, near the village, as a head and shoulders appeared over the crest of the hill. It turned out to be Stoeffel on his Alcyon, still on his first lap. He came down the straight very fast, but wobbled slightly. A few minutes after he had passed, Bailey flashed by again at a great speed, his spare belt dangling dangerously behind. However, he appeared to be quite conscious of the fact, for he looked round and continued on his course. After an interval of about ten minutes Kickham came by, also travelling very fast.

There was a strongish wind on this section of the course blowing at the riders' backs, which considerably improved their speed. Newman ran third in this lap, the speed of his single-cylinder machine astonishing everyone. W. H. Bashall came fourth, and he cheerily waved his hand as he rushed by and disappeared on the down slope. He had picked up five places, and was going particularly strongly.

Cox came next, the quietness of his exhaust giving one the entirely fictitious idea that he was travelling slowly. Then O'Donovan went by, his little Singer engine (one of the smallest in the race) turning over at a wonderful speed. Ellis (N.U.T.) had gained six places, and appeared to be travelling fast and quietly. Petty was still well up, but had dropped a place or two. Pratt was going well, and Evans passed with his engine still missing fire.

The competitors had now spread out a good deal, and it was not long before Kickham passed on his third lap, followed, after a short interval, by W. H. Bashall. These two, followed by Cox, had now taken up the positions in which they finished, Bashall winning on the difference of starting times. What had become of Bailey? Had his spare belt got in the back wheel and given him a nasty spill, we wondered? There was some anxiety shown, and we were quite relieved when we heard that he was safe and sound, though hung up with gear trouble on the mountain road.

**A Piece of Bad Luck.**

The race now became decidedly dull from a spectacular point of view as the riders passed singly and at long intervals. This decided me to make a move, and by following devious byways, chiefly noticeable for their entire lack of surface and awful grease, I eventually arrived at Ballacraire corner in time to see the seventh competitor pass on his third lap. This proved to be Owen (Forward), who took the corner carefully and got away in style on the up slope. O'Donovan followed, and then, after a longish interval, came Newman, riding very slowly and wobbling terribly, and it was soon evident that his back tyre was flat. He pulled up at the corner for repairs, and having hastily removed the rear wheel, he repaired the damage and made a fine effort to catch those who had passed him. This, however, he was unable to do, as a burst tube takes some time to repair. This was a piece of extraordinarily bad luck, as he was running third, and but for the accident would undoubtedly have been the first single-cylinder rider to finish. As it was, this honour fell to Harold Petty, whose little Singer performed extremely well.

**The Pick-up of a 2½ h.p. Twin.**

Haslam (Douglas) took the corner carefully, but shot away directly he had got round. It is a noticeable fact that in these days of variable gears and change speed devices corners can be taken with more caution and yet without the loss of valuable time, for the pick up of a modern 2½ h.p. machine on a low gear is nothing short of marvellous. Kickham held the lead at Ballacraire Corner on the last lap, followed by W. H. Bashall, both going as well as on the first circuit. Next came J. T. Bashall (Humber) still on his third lap, and, as usual, Pratt's yellow O.K.-Precision attracted our attention. Time was now getting on, and as I particularly wished to see some of the finish I rushed off again, and after more execrable side roads reached Douglas just after the first three machines had finished. I saw very little trouble, and fortunately no accidents. What incidents I did see were almost entirely confined to belts at Creg Willey on the first lap, and poor Newman's burst tyre.

H.D.T.

## THE RACE AS SEEN FROM THE RAMSEY DEPOT.

**T**HE Ramsey depot is not usually regarded as one of the most interesting points from which to view the T.T., but it was very promising at the start of the Junior Race this year. The main road from Sulby to Douglas runs through the centre of Ramsey in the form of a soundly macadamised loop, but the racing course takes a short-cut via a private road, which has never been properly metalled. This year the private road (some 300 yards in length) was in truly execrable condition, great pools of water three or four inches deep alternating with sludgy puddles and hard ridges. It is impossible to imagine a more diabolical bit of going for racing purposes.

About 9 a.m. the roadmen set to work to sweep the water off the road with heavy brushes, but towards 10 a.m. a great storm, which had been hovering over Snaefell, burst upon us, and the only possible plan was to telephone across to Douglas that the men might ride on the footpath. This

permission introduced a certain gymkhana element. The cinder path (4ft. 6in. wide) had to be mounted at an angle, where a formidable stone wall awaited the unlucky Jehu who miscalculated his swerve off the road; then it flattened out to cross a by-street, and where it began again was well guarded by pools and sludge. Then it ran for 200 yards along some iron railings, through which daring urchins constantly thrust their heads, and finally the riders had to charge down off the path again on to the road at the start of a sharp uphill curve.

As we stood patiently in the driving rain, waiting for the first arrivals, prophecy ran riot, and the general opinion was thus early in favour of a Douglas win, as their combined drive employs a large counter-shaft pulley, and so minimises belt slip. Consequently, we were not surprised when the first distant rattle proved to be Bailey, who roared past at a great speed with his spare belt trailing in the



### The International Motor Cycle Tourist Trophy Races.—

mud, having covered his first twenty-five miles in 35 mins. This was equal to a 52½ minute circuit, and was very creditable considering the perilous road conditions; some twenty miles out of the thirty-seven were bad enough to excuse an expert's side-slipping at touring speeds.

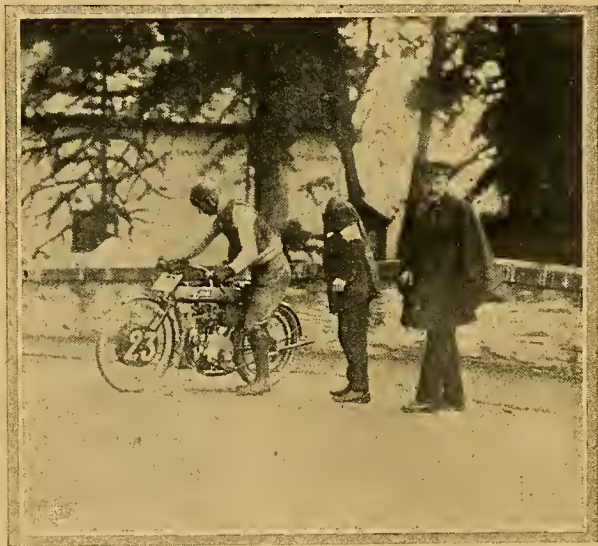
Kickham was the next man through, his nett time being half a minute better than Bailey's, and the Douglas backers were already shaking hands. As the procession roared through, W. Bashall and Rex Mundy (also on Douglas machines) were lying third and fourth, with Newman (Precision) and Creyton (Humber) fifth and sixth respectively. We could hear the shrill reverberating rattle of the exhausts dying away up into the mountain for a good three minutes after a machine had passed, and, judging by ear, W. Bashall, Newman, and Kickham were travelling best above the hairpin.

### Dodging the Bunkers.

Meantime there was plenty of sensation under our very noses. Harrison Watson pulled up with a dead taut belt of large section absolutely refusing to grip, and lost five minutes drying out. Cox preferred the road to the path, and got through in clouds of spray with a racing engine and much plunging in the sludge. Petty quitted the footpath too soon, and had to stop just as he struck the hill, for his belt was swamped and his plugs flooded. O'Donovan came through very slowly, and managed to dodge all the bunkers. J. T. Bashall pulled up sadly, and cleaned both his plugs. When engines are racing continuously for twenty-five miles (as most straight-through belt drives did on the first lap) it is difficult to lubricate with accuracy. W. H. Bashall made an electrifying transit, narrowly missing the wall as he mounted the footpath.

Creyton, like several others, shorted his plugs and got his belt slipping in the "water jumps"—at one time there were five or six men stalled with drowned machines, but they all got away by mopping the wet off the porcelains. Slatter was the only starter who never reached us, though Evans, Watson, Brown, Stewart, Haslam, and Stoeffel were all very late. The latter's clothing was all cut about.

On the second lap Bailey shot through faster than ever, and made a magnificent recovery from a hair-raising wobble



M. Stoeffel (2½ h.p. Alcyon) fell at his first attempt to round the corner at Quarter Bridge. He is seen straightening the handle-bars.

when he dropped off the footpath. As we afterwards learnt, he stripped his gears whilst changing up just above the hairpin. W. H. Bashall was now neck and neck with the Australian on nett time, and the latter's misfortune prematurely ended a most promising duel.

Bashall took the footpath more cautiously than on the first round, but the sun was now shining again, and, aided by a strong wind, the roads were drying fast. Newman and

Kickham were pressing the leaders hard, but this quartet had drawn well away from the field. Nobody got stuck in the sludge and water on this round; quite half the men kept in the centre of the road, but they took their bath at touring pace, instead of racing into it as before.

Two or three men replenished their tanks at the depot, and Pratt on the O.K.-Precision overhauled his compres-



S. L. Bailey (Douglas) taking the Gooseneck at speed.

sion thoroughly, renewing his valve cap washers, and adjusting his exhaust tappet. He had lost half his front brake clip, and as his rear brake shoe was glazed he was finding the corners anxious work.

Evans explained his requiring 2½ hours for the first sixty-two miles by saying he had stopped seventeen times, chiefly due to constant belt troubles and the wet state of the roads. Bailey, in spite of his speedy running (63 miles in 94m.), stopped three times in the first round and twice in his incomplete second. The Australian looked bitterly disappointed at his hard luck.

### A High Speed Reliability Trial.

On the third lap W. H. Bashall and Kickham were quite out by themselves, and as the conditions had improved, the remaining forty-nine miles resolved themselves into a high speed reliability trial between the two Douglas cracks, with Cox hanging doggedly on, ready to avail himself of any slackening. Nobody was within fifteen minutes of these three. J. T. Bashall wobbled in over the Sulby grease to retire with his back tyre punctured, but was more than consoled when he heard that his brother had a cosy lead. Ellis came in quite coolly, and managed to take a huge bite out of a wad of sandwiches, even in the act of restarting. The marshals were uneasy at seeing him take a dirty belt on board, which he claimed to have left behind on the first lap.

News now came in that "Duggie" Brown's pulley bearing had given out on the mountain, and that Newman's absence was due to a tyre burst (place unknown). Stewart again took the water jumps too fast, and sustained a stop on the awkward slope, where restarting was exhausting. Pratt's engine was once again compressionless and blowing through at its joints, but he was uncommonly smart at replacing the washers, and his yellow machine barked away again in good form.

We now settled ourselves to watch the final of the Bashall-Kickham duel, and the excitement was intense when they rounded the wide sweep into the town almost simultaneously. Bashall pulled up, waving frantically, while Kickham shot through along the footpath, crouching so low that he almost disappeared into his tank fillers. Bashall only wanted a can of oil emptied into his tank, and shot away again after a lightning stop with practically the whole of his starting allowance (six minutes) in hand of Kickham. This was nearly enough to ensure a win if he had to coast down from



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Snaefell Summit, and when the telephone announced that the pair had passed the Bungalow within two minutes of each other, we knew that a double-barrel Douglas win only depended on the correctness of their engine dimensions.

Cox was nearly fifteen minutes behind, and the disqualification of the leaders was, therefore, his only hope. This comparatively little known man is a really fine rider. The

others were miserably tailed out, and, as usual, the concluding stages excited very little interest.

A visit to Sully Bridge proved that for once this ill-omened corner occasioned no excitement, except for Mundy's belt coming off when another rider was on his heels; while the solitary thrill enjoyed by the crowd at the hairpin was Bailey's mournful *coup de grâce*, received when he looked like a winner. B.H.D.

### CONCERNING THE WINNER AND HIS MACHINE.

It was our pleasant duty to congratulate an old friend upon winning the Junior T.T. W. H. Bashall, of Ockham, Surrey, is an amateur motor cyclist and car driver, and has had a most varied experience of all forms of motor vehicles. This was his fifth appearance in F.T. races, a previous success being second position in the 1908 race, when he rode a 5-6 Bat-Jap. Bashall is a rider of fine physique and scales 13 stones, so that the manner in which his little Douglas sped over the ground is all the more remarkable.

We were astonished to learn that he stopped six times in the first lap, due to mud being thrown on to the back plug by the belt. Despite this handicap, he was second on time. He stopped again in the second lap to fill up with petrol and oil at the Woodlands depot, Douglas, his only other stop being for oil at Ramsey on the last lap. His chances of the trophy were almost jeopardised by this shortage of lubricating oil, which caused him to resort to the low gear for five miles. The gear ratios, by the way, were  $4\frac{1}{2}$  and  $7\frac{1}{2}$  to 1. He was not aware of his position until at Ramsey on the last lap, where Alec Ross told him that Kickham was leading him by a minute. After that, Bashall told us, he rode as he had never ridden before in any T.T., which will be best understood by those who know his dash and daring. He further confided to us that the 350 c.c. Douglas was as fast as his last year's 585 c.c. Senior twin.



Harry Bashall, the winner, being carried shoulder high by W. W. Douglas and A. J. Sproston.

It is an interesting fact that, although he dashed through the mud and grease, he experienced no sign of belt slip whatever—a testimony to the big driving pulley.

Bashall related one or two amusing incidents of the race. He started with his breeches pocket full of tools, but these

chafed on the tank, wore a hole through the cloth, and one by one dropped out on the road. Once when he stopped to clean a plug the rag he was using burst into flames. Another incident of his eventful ride was when dropping down the mountain road at a mile a minute speed.

He was gradually overhauling P. J. Evans on the Humber, who was responding to the appeal of the Frenchman, Stoeffel, for an inner tube, and just as Evans threw it overboard, Bashall, dashing along in the rear, caught it on his toe and carried it along some distance. As regards the running of his horizontal twin, it behaved faultlessly throughout, and if anything was faster at the finish than at the start. It is safe to say that there has never been a more popular winner of any Tourist Trophy. The enthusiasm was tremendous, and Bashall was lifted shoulder high as soon as he dismounted his faithful Douglas. In the evening

the scenes of enthusiasm at the Palace, Douglas, when the trophy was presented by the Clerk of the Rolls will be remembered for a long time to come. The winner's Douglas had an Amac carburetter, Hutchinson tyres, Bosch magnet, Lyso belt; whilst Pratt's spirit and Price's oil were also used.

### THE GYMKHANA.

On Saturday afternoon a gymkhana was held on Belle Vue Racecourse in aid of the Isle of Man hospitals. There was plenty of fun, and everybody enjoyed himself to the full. The first event was a to-and-fro race. 1st, Verron Taylor (Rudge). In the hfebelt event, Vernon Taylor was again first in the foot race, but only finished second in the belt fixing. In the cigarette-lighting race the competitors had to race over an allotted distance to ladies, who provided cigarettes and matches, and had to light the former. In this Taylor was first, Fenn second, and Woodhouse third.

The next item on the programme was a potato planting race, in which ladies in sidecars had to put potatoes in flower pots. J. Jones (Bradbury sc.) was first, Eric Myers (Scott sc.) second, and Hugh Gibson (Bradbury sc.) third. Myers was riding a new Scott sidecar, beautifully sprung and extraordinarily comfortable. The writer had a ride in it round the track, and found it the most comfortable in which he had ever sat.

Next came a duel on the track, W. G. McMinnies (Triumph) versus W. Douglas (Douglas), in which the Triumph proved an easy victor. The track was of grass and very soft and rutty in one corner.

During the afternoon the Douglas riders, who turned up in red caps and red sashes, were persuaded to run a one-design race. Early in this Stewart had a bad toss and

rolled over and over, but with better success than A. H. Priestley, who before the gymkhana started had a nasty spill, and dislocated his shoulder. W. H. Bashall held the first place all through, and finished first with Bailey second, but both had a tumble after passing the finishing line. Quite an amusing event was the three-mile motor-paced cycle race, Alec Ross (champion of Scotland 1880) v. George King (six hours' record holder 1887). Ross was conspicuous for what he did not wear and King for what he did. Ross came in an easy winner. The gymkhana closed with a tug-of-war, single-cylinder riders *versus* twins, in which the twins were victorious. Twenty pounds, it was said, were cleared for the hospitals.

A most regrettable accident occurred during the practising on the Thursday. John Gibson, a sportsman of the best type, had travelled down Bray Hill at a good speed on his Trump-Jap, when a car driver unexpectedly backed out of a side road across his path. Poor Gibson did his best to avoid the car, but unfortunately hit the front wing. He was taken to hospital where it was found he had a fractured skull and other minor injuries. He has been steadily improving, we are glad to say, and his condition on Tuesday gave hopes for recovery.



# THE SENIOR RACE.

## HIGH SPEEDS. FINE RIDING.

THE morning of the great race was none too promising as regards weather. A cold north-westerly wind was blowing, it had rained in the early morning, and mist hung heavy on the mountains. Fortunately, however, greasy patches were comparatively few in number, and the strong wind was in favour of the com-



Lining up for the start. No. 1, J. R. Haswell (Triumph); No. 2, J. R. Alexander (Indian) and W. Heaton (Dot-Jap). In the foreground is Mr. J. R. Nisbet, clerk of the course; at the extreme left Mr. T. W. Loughborough, and next to him the timekeepers, Messrs. F. T. Bidlake and A. V. Ebbelwhite.

petitors up from Ramsey and down from the Bungalow. The preliminaries were much the same as on Friday last, the only difference being an increased number of spectators and the better preservation of order on the course. The competitors were roped off from the crowd, and marshals with two ropes—one each side of the road—kept people from encroaching on the men at the start.

Haswell (Triumph) was given the word "go" punctually at 10 a.m. J. R. Alexander (Indian) got away well, and so did Heaton (Dot), who was the oldest rider in the race. N. F. Holder's (Blumfield) engine fired immediately and had a clean, healthy bark. Hart-Davies (Triumph) had a gummy and refractory engine, which required a long, strong push to make it fire. Applebee (Scott), with his father looking proudly on, essayed a start on low gear from a standstill, but in his haste he stopped the engine; it restarted at the second kick. Philipp (Scott) was more successful, and got away in excellent form. Garrett (Regal-Green) was the funny man among the competitors. He, as also did Woodhouse, wore an elaborate blue garter on the left knee. When Franklin (Indian) got away just before him, accelerating splendidly, with his engine emitting a healthy roar, Garrett facetiously complained of the noise, and later, when he had a stop during the race, he shook hands with a spectator and wished him good-bye.

Bolton's Rudge was in absolutely new condition and looked wonderfully smart. Griffith, on Watson's Humber, looked too lightly clad for a long race on a cool morning, wearing a leather waistcoat, flannel trousers, and no gloves.

Petty next came up with his Singer with its musical release valve, at which someone remarked, "Hence the machine evidently derives its name." Ware (Zenith) started on one cylinder, but the other quickly chimed in. By this time news came to hand that Haswell, J. R. Alexander, Applebee, Philipp, Blumfield, Heaton, Garrett, and Franklin were at intervals passing Ramsey. Next Bailey, calmly smoking a cigarette, came up to the start. The brothers Collier went off amid the hearty cheers of the crowd. Then came Mundy (Singer), and last of all started Jamieson (Singer) and Kickham (Douglas).

## ANOTHER BRITISH SUCCESS.

Just after the latter had left, Haswell was announced to have passed the Bungalow, up to which point no one had overtaken him. Soon after he arrived, travelling splendidly, followed by the redoubtable Applebee, whose stand was trailing. All appeared to be going well, and among them Bailey's gallant little Douglas was conspicuous.

### Order of First Lap.

The order of the first six past the post on time was:

Rider and machine.	m. s.	Speed
		m. p. h.
1. F. A. Applebee (Scott) ...	46 31	= 48.37
2. F. Philipp (Scott) ...	45 54	= 47.87
3. J. R. Haswell (Triumph) ...	48 20	= 46.55
4. H. Mason (Matchless) ...	48 32	
5. S. F. Garrett (Regal-Green) ...	48 56	
6. H. A. Collier (Matchless) ...	49 0	

In the first lap procession Griffith passed with a broken footrest. News came to hand that Mason, who was fourth in the first lap, had had a fire at Ramsey, but had gone on. However, he was never seen again at Woodlands. A. S. Jones (Rudge) was reported to have left his machine at Hilberry and to be walking towards the finish. It was long before he arrived, and when he did turn up he told dire tales of a broken valve which had jammed in the cylinder and a broken plug.

### A Disqualification.

Mundy stopped near the timing box through lubrication troubles. The oil refused to flow into the crank case. Hart-Davies was reported to have retired at Ramsey owing to a seized engine, but, to the great astonishment of everyone, he turned up on the next lap and succeeded in finishing. He was disqualified, however, after the race as he took in petrol outside a depot. Bailey was announced to have had a broken chain near Ramsey, to have repaired it, and to have continued.

### The Second Lap Order.

Rider and machine.	h. m. s.	Lap speed
		m. p. h.
1. F. A. Applebee (Scott) ...	1 32 33	= 48.88
2. F. Philipp (Scott) ...	1 35 37	= 46.39
3. J. R. Haswell (Triumph) ...	1 36 26	= 46.87
4. C. B. Franklin (Indian) ...	1 37 11	
5. H. A. Collier (Matchless) ...	1 38 21	
6. H. Reed (Dot) ...	1 38 57	



J. L. Emerson (Norton) and J. B. Hart-Davies (Triumph) on the footpath at Ramsey, in order to avoid a bad stretch of road.





J. W. Blumfield (4 h.p. Blumfield) leaving Ramsey.

The two Scotts seemed to have established themselves as first and second, Mason had retired, and Garrett had lost his place. Franklin had got up to the fourth position, while H. A. Collier and Reed began to creep up towards the top of the list. Just about this point in the race, P. W. Owen (Norton), who had not been seen for the first lap, at last appeared, having taken 2h. 25m. 28s. to make one circuit. In the third lap, Applebee, whose stand was in position on the second lap, was again trailing this part of his machine on the ground.

Haswell rode close behind him. Hart-Davies appeared to be going well on this lap.

**Third Lap.**

Rider and machine.	h. m. s.	Lap speed. m.p.h.
1. F. A. Applebee (Scott) ...	2 18 4	49.44*
2. F. Philipp (Scott) ...	2 22 3	48.47
3. J. R. Haswell (Triumph) ...	2 22 52	48.47
4. H. A. Collier (Matchless) ...	2 26 33	
5. C. R. Collier (Matchless) ...	2 29 31	
6. C. R. Martin (Triumph) ...	2 30 38	

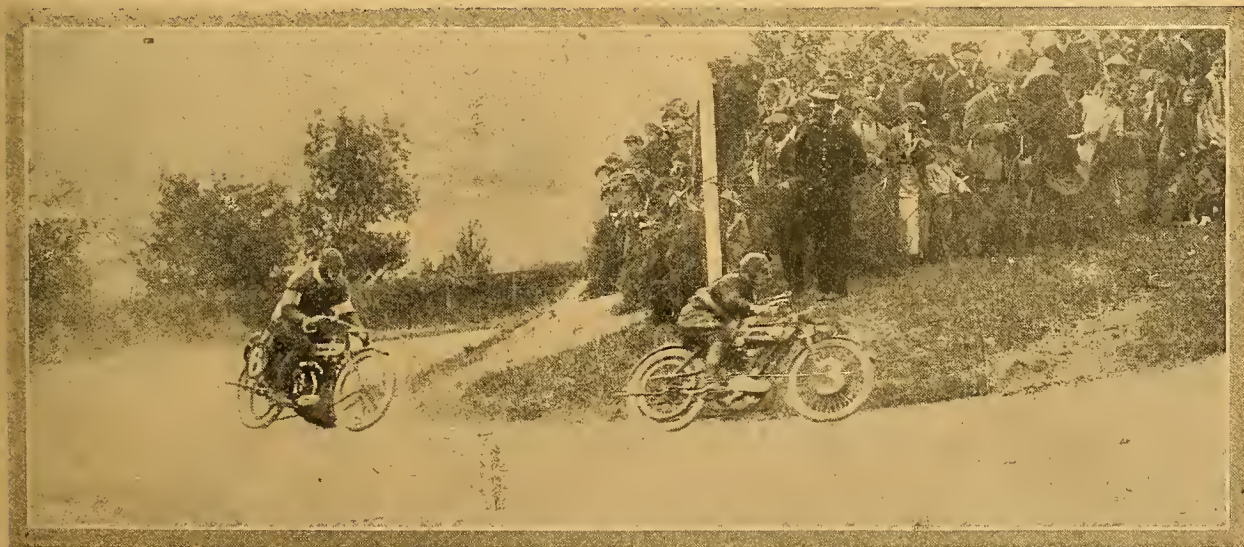
\*Fastest lap of the day.

The first three, it will be noticed, kept their places. Franklin dropped out owing to a buckled wheel caused by a fall on Bray Hill, and gave the fourth place to H. A. Collier, who was greeted with applause when he next passed the timing box. C. R. Collier also crept up into fifth place, with Martin (Triumph) sixth.

**Fourth Lap.**

Rider and machine.	h. m. s.	Lap speed. m.p.h.
1. F. A. Applebee (Scott) ...	3 4 40	48.97
2. F. Philipp (Scott) ...	3 8 55	48.01
3. J. R. Haswell (Triumph) ...	3 10 59	46.76
4. H. A. Collier (Matchless) ...	3 14 48	
5. C. R. Collier (Matchless) ...	3 19 15	
6. D. C. Bolton (Rudge) ...	3 20 38	

It will be seen that the order of the first five remains unaltered, but carburetter and other troubles put Martin back and gave the sixth place to D. C. Bolton, who had earned it by his consistent running. Bolton, however, retired later with a broken valve. Griffith (Humber) managed to complete four laps satisfactorily, and then ran out of petrol on the mountain and had to retire. The final results will be seen in the lap table on next page.



W. Heaton (3½ h.p. Dot-Jap) and I. B. Hart-Davies (3½ h.p. Triumph) at the hairpin on Snaefell.



## The International Motor Cycle Tourist Trophy Races.—

## A Well-deserved Victory.

Applebee carried off the trophy after a hard fight and well-deserved victory. Haswell showed by being beaten only by 5m. 54s. that the day of the single-cylinder is not yet over. Had not Philipp's tyre come off the rim at

Ballaugh Scotts would have finished first and second, but Philipp with an oval rim dropped from second to eleventh place. Applebee's win was most popular, and on his arrival he was lifted shoulder high, a position which he rapidly and modestly changed for *terra firma*. Hoffmann and Adamson placed two more Triumphs among the first six.

## SENIOR T.T. LAP TIMES AND RESULTS AT A GLANCE.

	Name.	Make.	No. of Cyls.	Bore and Stroke. mm.	Gear.	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	TOTAL. h. m. s.	Speed, m.p.h.
						m. s.	m. s.	m. s.	m. s.	m. s.		
1	F. A. Applebee	Scott	2	69.8 × 63.5	Scott 2-sp.	46 31	46 2	45 31	46 36	46 23	3 51 3	48.69
2	J. R. Haswell	Triumph	1	85 × 88	S.A. 2-sp.	48 20	48 6	46 26	48 7	46 58	3 57 57	47.28
3	H. A. Collier	Matchless	2	70 × 64.5	Matchless	49 0	49 21	48 12	48 15	47 8	4 1 56	46.50
4	C. R. Collier	Matchless	2	70 × 64.5	Matchless	50 39	50 13	48 39	49 44	48 22	4 7 37	45.43
5	J. A. Hoffmann	Triumph	1	85 × 88	S.A. 2-sp.	50 30	50 48	50 15	51 8	50 8	4 12 49	44.46
6	J. W. Adamson	Triumph	1	85 × 88	S.A. 2-sp.	51 13	53 55	50 37	49 42	48 35	4 14 2	44.29
7	A. Kirk	Triumph	1	85 × 88	S.A. 2-sp.	52 14	54 48	48 58	49 34	48 33	4 14 7	44.29
8	J. R. Alexander	Indian	2	70 × 64.5	Indian 2-sp.	51 27	49 56	50 16	51 29	59 19	4 14 27	44.20
9	C. R. Martin	Triumph	1	85 × 88	S.A. 2-sp.	52 9	48 32	49 57	53 42	52 44	4 17 4	43.77
10	A. H. Alexander	Indian	2	70 × 64.5	Indian 2-sp.	64 11	56 18	46 53	47 5	46 34	4 21 1	43.10
11	Frank Philipp	Scott	2	69.8 × 63.5	Scott 2-sp.	46 54	48 43	46 26	46 52	76 39	4 25 34	42.45
12	W. Heaton	Dot	2	76 × 55	P. & M. 2-sp.	56.51	54 6	52 37	51 31	53 21	4 28 26	41.97
13	J. F. Sirett	Indian	2	70 × 64.5	Indian 2-sp.	64 10	50 10	50 18	50 28	54 18	4 29 24	41.82
14	Harry Reed	Dot	2	76 × 65	P. & M. 2-sp.	49 53	49 4	53 8	53 44	65 43	4 31 32	41.51
15	S. L. Bailey	Douglas	2	61 × 60	Douglas	49 36	52 10	63 27	52 49	57 28	4 35 30	40.90
16	Percy Butler	Triumph	1	85 × 88	S.A. 2-sp.	55 45	56 0	55 15	54 54	54 15	4 36 9	40.76
17	E. Kickham	Douglas	2	61 × 60	Douglas	55 28	52 9	53 32	65 45	52 47	4 39 41	40.33
18	S. F. Garrett	Regal Green	1	85 × 88	Brampton	48 56	55 1	53 50	52 40	48 46	4 49 13	38.96
19*	I. B. Hart-Davies	Triumph	1	85 × 88	S.A. 2-sp.	52 25	99 19	51 59	53 27	54 24	5 11 34	36.17
20	Blumfield, jun.	Blumfield	1	81.5 × 95	S.A.	64 32	69 47	61 54	65 18	73 26	5 34 57	35.73
	G. Griffith	Humber	2	60 × 60	A.T.	61 30	61 27	68 12	72 52	Ran out of petrol on the mountain		
	D. C. Bolton	Rudge	1	85 × 88	Multi	49 42	50 44	50 36	49 36	Retired, tyre troubles Ramsey		
	J. Emerson	Norton	1	79 × 100	S.A.	83 44	51 6	76 8	54 37			
	E. B. Ware	Zenith	2	76 × 55.5	Gradua	53 10	57 24	77 19	86 24	Timing gear broken Quarter Br.		
	W. Jones	Rudge	1	85 × 88	Multi	53 43	62 9	53 55	99 16			
	Q. Smith	Triumph	1	85 × 88	S.A. 2-sp.	61 12	49 43	58 11	51 15	Front wheel buckled after fall		
	C. B. Franklin	Indian	2	70 × 65	Indian 2-sp.	49 58	47 13	53 37	53 37			
	P. W. Owen	Norton	1	79 × 100	S.A.	145 28	71 28	77 47	77 47	Timing gear broken Quarter Br.		
	F. Dixon	Cleveland	1	85 × 88	—	55 39	79 47	159 15	159 15			
	N. F. Holder	Blumfield	1	81.5 × 95	Single	88 28	56 51			Lubrication troubles		
	H. Huckle	Zenith	2	76 × 55.5	Gradua	53 20	77 4					
	A. Hall	Rudge	1	85 × 88	Multi	56 26	203 45			On fire at Ramsey		
	R. Mundy	Singer	1	85 × 88	S.A.	72 9	70 43					
	C. W. Jamieson	Singer	1	85 × 88	S.A.	52 57	68 57			Retired, tyre troubles Ramsey		
	S. Perryman	Blumfield	2	61.8 × 83	S.A.	82 15						
	H. Mason	Matchless	2	70 × 64.5	Matchless	48 32				Fell on mountain road, and smashed machine		
	H. C. Mills	Regal-Green	1	85 × 88	Brampton	49 39						
	H. Petty	Singer	1	85 × 88	S.A.	55 1				Valve broke and jammed in cylinder		
	J. Woodhouse	Regal-Precis	1	85 × 88	S.A.	53 48						
	A. S. Jones	Rudge	1	85 × 88	Multi	58 0						

\* Disqualified for taking petrol outside a depot.

REFERENCE. Gears: S.A. Sturmev-Archer three-speed; A.T. Armstrong-Triplex three-speed; Brampton, Brampton variable.

## THE RACE FROM DIFFERENT POINTS.

THE ideal way of seeing a T.T. Race is to vary one's position. Perhaps a balloon or aeroplane would provide the best means, but, in the absence of these, I resolved upon a plan to see the Senior Race from different points. Assembling with the competitors at Woodlands gave me an opportunity of finally examining each rider's machine, and I was particularly disappointed to learn that Harry Bashall had decided not to ride. He was over persuaded, and regretted it before the race was over. Monday broke dull, and there was a boisterous wind accompanied with fine rain at 7 o'clock, and at 9 clouds obscured the summits of the hills, so that the outlook at the commencement of the proceedings was not of the best.

The crowds assembling on the course were noticeably larger than on Friday. Haswell told me that the grease on the mountain was very treacherous (he had been staying at Ramsey as usual). How workmanlike and clean the brothers Collier keep their Matchless machines! The Indians were all ready for the fray, every detail having received attention, the petrol pipes being wrapped up with insulation tape to prevent leakage in case of a fractured pipe. W. H. Wells had told me to watch A. H. Alexander who had shown great promise

in practice. The Scotts which, on arrival, were immediately surrounded by a big crowd, had two sparking plugs to each cylinder. Plugs have caused this make considerable trouble in the past. Applebee and Philipp started favourites. C. R. Martin was reported to have the fastest Triumph.

## Excitement at the Start.

The manner of starting was interesting to watch. Some undoubtedly got flurried and did things which they would never do in the ordinary course.

J. R. Alexander went off at a big rate on his Indian, a strong wind assisting the competitors.

Hoffmann made the best start of the Triumph riders. The Regal-Green riders were joking everlastingly, and seemed not to be too seriously concerned in the race. Ware started with one cylinder firing, but soon made up lost time at the start by means of the Gradua gear. C. R. Collier was another who made a poor start, and Mundy had to stop and flood the carburettor before finally getting away.

Hardly had the last and fortieth man started—Kickham (Douglas)—than the telephone announced that Haswell had passed the Bungalow first, so it was clear he could hold his





Percy Butler (Triumph) leaping over Ballig Bridge.

own with most of the twins following him. J. R. Alexander (Indian), Applebee (Scott, seventh to start) were the second and third riders announced, and Martin (Triumph, No. 17) next. This order was maintained past Hilberry and Willaston corners, and also past the starting line.

It is strange, after past experience, that such a common trouble as trailing stands should befall T.T. competitors at this stage, but a number were troubled in this wise. J. R. Alexander's stand bumped on to the ground every twenty yards as he flashed past the scoring board, with F. A. Applebee on his heels.

After rounding Quarter Bridge the Scott was much quicker in picking up than the Indian, and so Applebee had overhauled four competitors in little more than one lap. Next Hart-Davies's burly form loomed in the distance, his leather waistcoat inflated like a balloon by the wind. Already the race had proved far more interesting than the Junior event, the waits being much shorter and less frequent. As on Friday, the riders exercised great caution at the corners, but I was impressed by the fact that the Triumph riders approached the bends much faster than the majority, relying absolutely on the efficiency of their brakes in the last fifty yards to steady their breakneck speed.

#### Private Races.

The times were faster, in my opinion, by reason of the duels being fought out on the course. I noticed Adamson

doing a steady 50-55 m.p.h. along a favourable stretch, and an Indian twin overhauling him, and immediately Adamson realised this he found some more speed somewhere, and these two riders disappeared side by side. Up to the fifteenth competitor the only three missing were the Blumfield riders, but they appeared later, and it was a noticeable feature of the race that of the forty starters all completed the first lap.

Kirk (Triumph) was going in fine style, having passed a number, but we hardly agree with him waving to friends at mile a minute speeds. Petty's Singer was more of a touring machine than any; it was moderately quiet, too. Huckle, who had had innumerable falls in practice on his Zenith, was going steadily and well. Griffith, on a 2½ h.p. twin Humber, was travelling wonderfully fast, but I noticed his right foot rest bent. Harry Collier had passed his brother, but he only led by half a minute or so. These veterans received a cheer each time they passed, for the Colliers are wonderfully popular on the Island. I have a firm conviction that the Colliers little thought that they were to be beaten, for a number who saw them at different points of the course confirmed my belief that they did not seem to be exerting themselves. I was not aware at the time that C. R. was having trouble with his ball bearing pulley.

Bailey (Douglas) passed, having completed a fast lap, despite a fall on the Ramsey hairpin. Harry Reed (Dot) had kept his place, but Perryman (Blumfield) was very late. The scene at the Kirk Braddan depot was interesting.



Frank Philipp (Scott) running on to the pathway at Ramsey.

I watched several replenish, and Garrett (Regal) adjust his float needle. News reached here that Mason's Matchless had momentarily caught fire while being filled with petrol, and the wonder is that more were not ablaze considering the way the spirit was bundled into the tanks and slashed over the hot engines.

#### At Willaston.

I then moved to Willaston Corner, and Haswell passed, having still retained his premier position, his machine being bumped about badly on the uneven surfaces. Sirett (Indian) was close behind endeavouring to kick his stand up. Applebee was gaining on the No. 1 man, and had time to wave and smile. Evidently his position had been signalled to him.

Alexander (Indian) followed Philipp (Scott) going faster than ever. There were longer gaps now as the ranks were gradually being thinned. A noticeable feature of the race was the fine running of the eight Triumphs. Almost regularly as clockwork they came round each lap until the fourth when Quentin Smith, the Manxman, was delayed by a burst tyre.

The little Douglasses sounded much like the Scotts in the distance and they were going splendidly.

As the power of the sun increased it made matters much more pleasant, but the wind did not appreciably lessen in its strength. There was a short period of suspense at Bray Hill as the inevitable dog ran into the road as a racing machine was heard approaching. It was chased by excited officials, and eventually left the course.



J. Woodhouse (Regal-Precision) and E. B. Ware (3½ h.p. Zenith) travelling towards the Gosceneck on the mountain road.



## The International Motor Cycle Tourist Trophy Races.—



The winner, F. A. Applebee (Scott), filling up at Ramsey. With the assistance of O. C. Godfrey (last year's winner), he replenished in the record time of 14 secs

## CREG WILLEY AND CRONK-Y-BODDY.

THE sound of the first competitor reached me on the bend of Creg-Willey, ten miles from the start, at 10.13 a.m. As the noise increased, Haswell (Triumph) appeared, and taking the corner fast, but a shade too close in, vanished up the hill at a fine pace. He was followed by J. R. Alexander (Indian), who seemed to change a little late; his machine, however, picked up rapidly on the low gear. Holder's Blumfield shot up next, the sharp crackle of his water-cooled engine being particularly noticeable. Hart-Davies's Triumph did not seem worried with its 13 stones odd rider, and took the rise in style. Applebee's Scott ran fifth, both he and Philipp (Scott) creating a very favourable impression by their speed, silence, and fine cornering.

Perryman's Blumfield passed, going well, but got hung up within a mile by a burst tyre, which caused a stop of nearly half an hour. Franklin's Indian came up well. Garrett (Regal-Green) came very fast, but took the corner too wide and nearly hit the bank. After an alarming wobble he made a fine recovery, but as he disappeared his engine was misfiring slightly. Quentin Smith (Triumph) changed into the high gear too soon and had to change down again. P. W. Owen on a long stroke Norton tore by, but his engine began to misfire badly, and he stopped to change a plug. Hall's Rudge was travelling slowly, something which we could not discover being obviously amiss. Bailey's Douglas roared by, and seemed to be going much faster than several of the larger machines.

The Collier brothers were going well up to their usual fine form, C. R. just leading, and Harry Reed (Dot) went by like a flash. The competitors passed wonderfully close to their starting order.

## Applebee Gaining.

At the conclusion of the first lap I moved up the hill to the long undulating straight. There was a very short interval before Haswell passed on his second round, followed by Applebee, who had run up into second place. J. R. Alexander came next, and then Philipp. David Bolton went by at a great speed, having picked up five places; his Rudge appeared to be in fine fettle. C. B. Franklin had worked up four places and seemed very fast. A. H. Alexander brought his Indian along fast, but had dropped several places, and Harold Petty (Singer) had passed five men. Ware and Huckle on Zeniths went by, one behind the other. Woodhouse (Regal-Precision) was exceptionally fast, as also was W. Jones (Rudge).

The Collier's passed together again, but H. A. had taken the lead, and I afterwards learnt, maintained it all through

Emerson (Norton) wobbled badly as he hit a lump in the road while descending Bray Hill. The two Nortons were extremely fast, and the two riders of this make must have had trouble or they would have been in the running. Petty (Singer) shed one of his number plates, but he was going so fast it is doubtful if he knew it.

## A Record Breaker Checked.

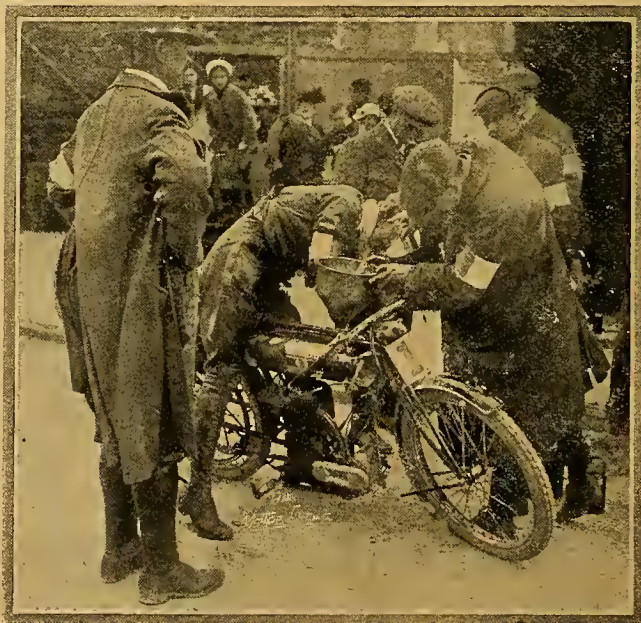
C. B. Franklin (Indian) fell heavily at the Bray Hill corner, but he jumped up, and without stopping to examine his machine shot off again, his front wheel wobbling dangerously. D. C. Bolton was travelling best of the Rudge trio. Again I noticed H. A. Collier only half bent over his mount and looking about unconcernedly.

There were not many spectators at Willaston. Here I found Geo. E. Roberts telephoning news to the start. I also learned that Hugh Mason had fallen at Hilberry corner and damaged his knees, and had been taken to Douglas by a lady motor cyclist on a Scott sidecar. A police whistle denoted the approach of a competitor at this corner. Harry Reed was most cautious here, partly as he had already fallen and cut his hands. Haswell, Applebee, and Philipp were still leading, but nearing the completion of the fourth lap Applebee had passed Haswell, though the single-cylinder rider hung on tenaciously. He was much slower at Willaston corner, however. The interest here was very ordinary, so I wended my way back to Bray Hill and the finish, in time to see Applebee flash over the line as the winner, closely followed by Haswell. But Philipp was an absentee, and no news of him was obtainable on the telephone. Eventually it was learned that he had burst a tyre, which let in Harry Collier to third place. G.S.

the race. Bailey and Reed were both noticeably fast. There was a stiff head wind blowing down this section of the course, which had a considerable effect on many of the high-g geared machines, and thus the infinitely variably-g geared mounts scored, as they were able to reduce their gears till their engines were running at the most efficient speed.

In the third lap I moved just through the village of Cronk-y-Boddy, so as to get a view of the long downhill slope. Though the riders reached a great speed here, they were impeded by the curves, which, though not acute, cannot be taken all out.

Haswell still passed first, but the gap between him and Applebee was perceptibly shorter. Philipp had run into third place in order of passing, thus changing places with



J. R. Haswell (Triumph) filling up at Ramsey. He finished second, and was the first amateur and the first single-cylinder rider, average speed 47.27 m.p.h





F. A. Applebee (two-stroke Scott) finishing a winner of the 1912 Tourist Trophy Race. Average speed, 48.69 m.p.h.

J. R. Alexander (Indian). Hoffmann (Triumph) was working his way up, and rode extremely well; in fact, the regular running of the Triumph machines attracted much attention. The Blumfield machines had suffered a series of mishaps which put them out of the running. They had, unfortunately, had little time for tuning up, though when they passed me their speed was extraordinary. The Colliers were together as usual, H. A. having overtaken twenty-seven competitors since the start. Reed was going strongly, and when he went by seemed to be the fastest.

In the last lap Applebee took the lead, though he was hard pressed by Haswell, whose Triumph was none the worse for its gruelling. Philipp went by third, and I had no time to see more, but rushed off to the finish. On examination, the engine sizes proved well within the limit.

The Indian team were unlucky in losing their crack man Franklin, who, when well in the running, was put out by a buckled front wheel the result of a spill. The Colliers, who probably had most supporters in the Island, finished third and fourth, and the Triumph had scored an extraordinary team performance, being second, fifth, sixth, seventh, ninth, sixteenth, and nineteenth.

This is the first time that a two-stroke engine has won the classic event, and it remains to be seen what effect the win will have on popularising the principle. Finally, the capabilities of the modern Junior machine were demonstrated by Bailey and Kickham, whose Douglas machines finished fifteenth and seventeenth respectively. H.D.T.

### AT THE RAMSEY DEPOT.

IT was early evident that the Senior riders were not to be troubled with belt slip. True, Snacell was wearing its mist cap, but the old salts in the harbour asserted that with a nor'-west wind rain was improbable, and they were true prophets. On Sunday night, I walked down with the Triumph team to inspect the atrocious 400 yards of private road, christened the "water jump" by the Junior riders. We found the week-end's wind had evaporated most of the water, but the deep troughs remaining were too formidable to be risked. The first trough would set up a bad front wobble, and before it could be corrected, the machine would encounter the succeeding troughs, each of them a long pot-hole 5ft. or 6ft. across, and from 2in. to 6in. in depth. So we turned our attention to the footpath, and kicked down the ruts on it with our heavy boots, for Manx mud dries hard like cement. To show the pains some riders take, men like Haswell and Hart-Davies mapped out their track within a few inches all along this 400 yards of path.

On Monday morning it seemed strange to see men like Godfrey and Hugh Gibson lounging in the depot with attendants' badges on their arms; Godfrey in particular scented the air, gauged the wind, and eyed the track like some old racehorse turned out to grass. He was dogmatically confident that his business partner, Frank Applebee, would win outright, and events justified his certainty.

Ramsey depot is twenty-five and a half miles from the start, and as there is no real climbing along this section the best men came very near averaging 60 m.p.h. over it. At 10.23, J. R. Haswell (No. 1) was heard cutting out, with marvellous spitting and crackling, for the Ramsey corner, and he tore past at a truly frightful pace, taking the footpath past the bumps, and following to a hair's



E. Kickham (Douglas) at Balg Bridge. It will be noticed that both his wheels are off the ground.



## The International Motor Cycle Tourist Trophy Races.—



D. C. Bolton (3½ h.p. Rudge-Multi) rounding the Gooseneck.

breadth the line he had sketched out on Sunday night. J. R. Alexander presently followed, having thus early surrendered some two and a half minutes to the Triumph expert; we wondered already whether the Indian engine had been materially slowed by shortening its stroke. Let me here say that the Junior Race was child's play compared to the Senior. Some wiseacres opined that Bailey and Kickham on their Douglas machines would outstrip half the Senior entry, but on the first lap the fastest Seniors cut out such a pace that they ran perilously near the kerb entering the depot, and they passed by much faster than Bashall did on Friday.

By our rough timing thirty-two riders covered the first twenty-five and a half miles within a range of from twenty-seven to thirty-three minutes, Frank Philipp being the fastest. The Blumfields seemed to be touring. One or two men, notably Hugh Mason, Bolton, Martin, and Alister Kirk, rashly eschewed the footpath, and, rushing the bumpy road at speed, did involuntary "long-arm balance" on their handle-bars, simultaneously correcting frightful front wheel wobbles. A number of spectators wisely skeddaddled behind an iron fence. When all the men were through on their first lap (except Muddy, whose tyres delayed him), we made comparative notes, and found that the Scotts and Triumphs were fractionally faster than the Indians, while the two Colliers were already headed by several riders, and somehow or other Harry had managed to pass Charlie. Of the outsiders, the two Regal-Greens were travelling with most promise. No. 22 (Griffith) was a trifle late, and paused to pick up an inner tube. No. 23 (A. H. Alexander, riding Godfrey's victorious machine) came through misfiring, but went straight on up to the mountain, trusting to an automatic remedy. The two Douglas machines emitted such a continuous "hum" that many people mistook their approaching exhaust for the Scotts. When the crowd was past, the patriots rejoiced in the backward running of the red Indians, and voted for a Triumph win if the Scotts failed to last, while Godfrey vowed that Applebee's Scott at any rate was sure of a mechanical non-stop.

**Mist on the Mountain.**

We knew the second lap would be interesting, because the Triumph, Scott, and Matchless teams were due to take up petrol at 1½ and 3½ laps. The starting order was now becoming disarranged, and the men arrived in this order: Haswell, Applebee, J. Alexander, Philipp, Mason, etc., etc. Those who stopped told us the mist on the mountain was very trying, and that speeds over 20 m.p.h. were as perilous as they were inevitable. Suddenly cries were heard at the filling station, and a pillar of flame shot up from Mason's Matchless. Instead of mounting and "riding the flames out," as I saw Creyton do two years ago, he flung the machine down in the road. The sand was on the far side of

the depot, and there were no spades or buckets, but an army of marshals dashed sand upon the Matchless with their hands, and off it went little the worse. Meantime the furious procession kept roaring through, and by our timing the two Scotts were leading, Haswell lying third, with Franklin and the Colliers close up. Quite a crowd of machines, including most of the Triumphs, two Indians, Garrett's Regal, Bolton's Rudge, and Bailey's Douglas, were within five minutes of Applebee. Hoffmann, as he passed, caused great gloom by crying that Haswell had seized his engine on Creg Willey; but we guessed he must mean Hart-Davies. Blumfield had to reinflate his back tyre. Garrett and Bolton once more took the bumps all out, their bodies being jerked several inches up in the air. Quentin Smith's rear brake was missing—quite the most awkward *contretemps* imaginable in such an event.

**Jockeying for Positions.**

Great excitement was caused by six riders all arriving in a clump, and the jockeying that ensued to gain the footpath and the vantage round the bend into the mountain road was worth seeing. News of incidents began to filter in—a visit to the Hairpin showed that all the men were being sensibly cautious. Only Bailey sustained a fall there, and presumably until his first replenishment stop, he imagined that victory was possible for a 2½ h.p. by taking all risks.

Hart-Davies toured in looking very disappointed. He reported that his engine had seized six times in sixty miles, and finally his petrol union came loose, and his tank running dry, he had to replenish at an unauthorised point. He was about to retire when we pressed him to finish at all costs, even though he were afterwards disqualified, and off he went again. Petty walked in festooned with rent tubes; his back rim had been so kinked by a large stone that the cover refused to remain in position. Tyre troubles were unduly numerous, and a rumour went round that some malicious person had strewn the road near Sulby with nails. What principally surprised me in the depot work was the fact that some half-dozen of the epicyclic hubs required a most trivial adjustment, and that not one of the riders knew how to perform it. They fumbled and abused the hub until Hugh Gibson or some other bystander explained how the work should be done. Such reckless ignorance in a race is simply astounding!

The third lap lacked incident, except when Applebee and Jamieson entered Ramsey alongside, and the Scott deftly snatched the inside berth in time to dodge the bumps. Bolton again very foolishly preferred the road to the path and lost a lot of time. On the first lap eight of the forty starters took the road, thereby losing many seconds, but by the fifth lap everybody had learnt sense. It was already clear that only an accident could let up an Indian or a Matchless into first place.

The fourth lap was crammed with incident. The judges 'phoned through that we were to stop Franklin at all costs,

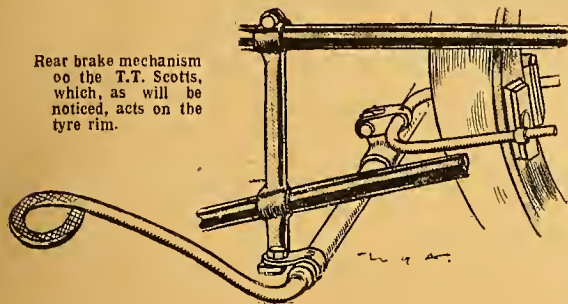


J. L. Emerson (Norton) on the twisty ascent of Snaefell mountain. The gradient hereabouts is 1 in 9.



## The International Motor Cycle Tourist Trophy Races.—

Rear brake mechanism of the T.T. Scotts, which, as will be noticed, acts on the tyre rim.

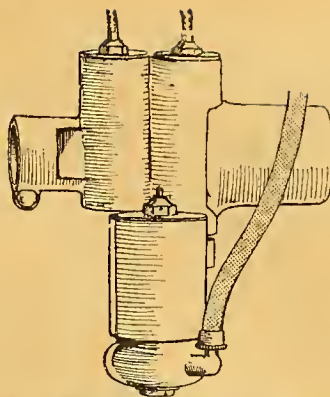


as his front wheel was dangerously loose, and a marshal stripped a child of a Red Riding Hood coat and waited at the corner for a long time, but Franklin never came round again.

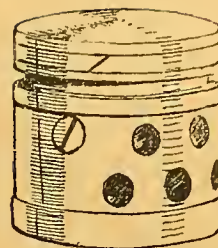
## Nearing the End.

The Triumph men drank hot Bovril when they stopped. Martin hurled a broken belt at us and nearly lassoed a marshal. Hall reported an hour's stop with his tyres. Jamieson passed with his stand trailing. Petty after a stay of an hour went off with a fearful squeak in his engine. P. W. Owen reported using up nine sparking plugs. Hart Davies had seized his engine on two further occasions. Mundy walked in with his back tyre right off the rim. And so on. There was plenty of trouble about.

Our information as to the faster men's positions was as complete as could be had at Douglas, thanks partly to the telephone and partly to the accurate timing and lap-scoring of several officials. As we waited for the men's fifth and last appearance a motor cyclist brought in word that Applebee had passed Haswell just above the Gooseneck. This can hardly have been true, for presently they crashed through at a tremendous pace, Applebee leading and taking all risks, with Haswell fifty yards behind doggedly hanging on. Nobody else was quite so speedy as these two, and since Applebee had six minutes' starting allowance in



Petrol filter under float chamber, and rubber covered pipe on J. R. Haswell's Triumph.



The Douglas piston. The absence of the second ring will be noticed.

hand, we knew he had only to reach the mountain top to win. The telephone messages soon came in "7 and 1 passing Bungalow." "7 and 1 reached Douglas," and chief honours were secured for two immensely popular men. "What price Godfrey and Applebee shares now?" was the slogan. From observations made, we know Applebee could not have been ignorant how he stood, yet he was not sitting on his lead and riding quietly to finish, but fighting as though somebody were a minute in front. He nearly came over in this last transit of Ramsey.

We could not feel sure of the placings until the Colliers were through, as nobody would be seriously surprised if Harry and Charlie Collier did a lap at 60 m.p.h. in an emergency, but before long Harry passed through well behind, shaking his head mournfully, and Philipp sang along at his heels, signalling that back tyre troubles had delayed him. C. R. Collier passed through quietly four minutes later, and except for waiting to see whether all the Triumph team could finish, the interest was now over. The victory was tremendously popular in Ramsey, as the Scott and Triumph teams were staying there, and Applebee and Haswell made hosts of friends.

B.H.D.



A. H. Alexander (Indian) leaning over at a great angle on the S bend at Kirk Braddan.

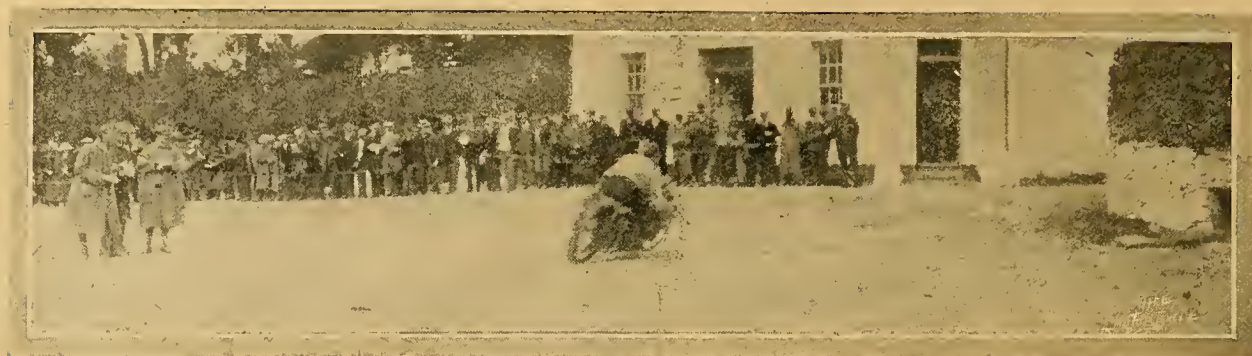
## IMPRESSIONS AT QUARTER BRIDGE AND BRADDAN DEPOT.

THE spectators at Quarter Bridge were treated to the finest exhibition of corner work they have ever seen or are likely to see for some twelve months or so. The difference between the methods employed by the various riders to get round the somewhat awkward bend at this point was most marked, and although some were more skilful than others, the design of the machine in many cases made it far easier for the rider. For example, the Scotts ridden by Applebee and Philipp clung to the road in the way only a Scott can. The Douglases were only slightly inferior in this respect, closely followed by the Indians. The Colliers' style is almost unique; apart from any question of design in connection with the machines, the Colliers

take no risk. C. R. Collier raises his valve lifter and holds it up until he has slowed sufficiently to get round safely; when he is well round, he drops his valve. H. A. Collier adopts practically the same method, but is inclined to hesitate slightly in comparison with his brother. Those who kept close to the kerb got round best, because the new and wider portion of the roadway is banked in the wrong direction for fast corner work, and those who rode on to it through travelling too fast and not keeping close in either made a bad turn or fell.

At Quarter Bridge, very few men used their feet as an aid to getting round; in fact this was quite noticeable by its absence.





E. B. Ware (3½ h.p. Zenith) at Ballaeraine corner.

G. Griffith (twin Humber) was the first to fall, but as he only had a short amount of practice with this machine it is excusable. He was up and off in a moment, and in departing shouted, "I am very sorry."

The first hearty cheer to be raised was for C. R. Collier, and as he came thirty-seventh in the order on the programme it is surprising that those who preceded him gained no great amount of applause. At this juncture a diversion was created by a spectator falling into the river—fortunately quite shallow at this point. The second loud cheer greeted the burly Butler (Triumph), who, by the way, is 4 lbs. lighter than last year.

The Douglasses were the nearest approach to the Scotts in their continuity of exhaust note, thereby showing what a high number of revolutions these engines can attain.

The second time they passed Quarter Bridge, Applebee and J. R. Alexander (Indian) had a dust up along the straight towards Braddan Depot; the Scott easily got away. Franklin (Indian) and Garrett (Regal-Green), who were the next two to make a race of it, disappeared riding almost neck and neck.

#### At Kirk Braddan Depot.

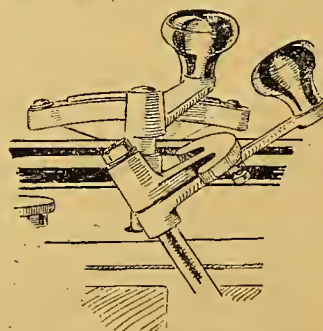
Here we found more interesting incidents occurring, peace only being marred by a wordy warfare between the marshal in charge and a local journalist over a breach of the regulations. The marshal kept his ground, and the Manx penman is probably still unconvinced.

Woodhouse (Regal-Precision) treated us to one of his electric thrills on the S bend at Braddan, and soon after came to grief somewhere on the mountain road. C. R. Collier passed with his engine making a weird grating noise that sounded ominously like timing gear troubles or rubbing brakes, and one or two spectators looked anxious: whatever it may have been, it was cured on the next round.

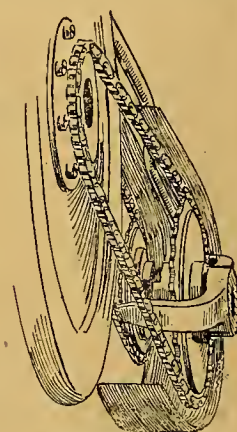
A number of riders took too long to replenish, and it was quite interesting to watch the difference in the way the

attendants handled the petrol and oil. What struck us more than anything was the expeditious methods employed by the Indian attendants, who were by far quickest.

It is little use having large filler caps and special funnels if the orifice of the petrol can is not equal to that of the funnel and tank. It is also quicker and better to squirt all the oil into the tank with a pump than to spill half of it over the tank sides. Jamieson (Singer), when he stopped, reported a partly seized gear as he could not use the lower ratios. Sirett (Indian) dashed up and gasped one word "tube"; he barely stopped and flinging the tube round his waist was off. Among others who took up fuel, etc., at this depot were Bolton (Rudge), Dixon (Cleveland), Hall (Rudge), Heaton (Blumfield), Garrett (Regal-Green), Ware (Zenith), and Reed (Dot).



Douglas four-speed double control levers.



Douglas four-speed gear, showing outer chain and dog clutches.

Bailey (Douglas) was loudly cheered at this point in the third round, and right well he deserved the applause. Franklin's front wheel was noticed to be wobbling badly as he left the depot; it was not observed by the officials as he rode in, or he would probably have been stopped.

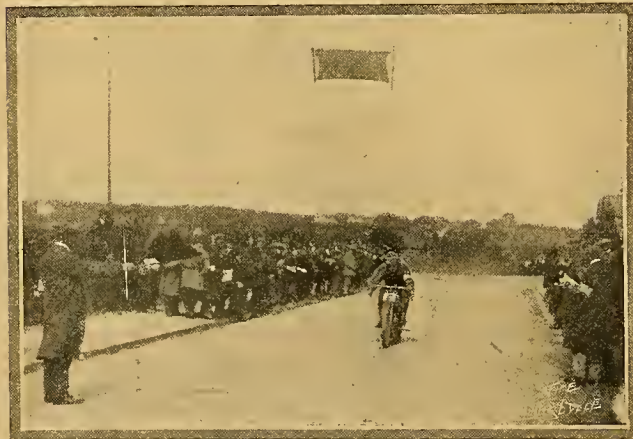
A. H. Alexander (Indian) showed evidence of a spill, his left knee being plastered with mud; luckily he was wearing leathers.

Emerson (Norton) arrived during the crackling of a particularly noisy single, which shall be nameless, and startled the attendants by sirging out his number with a lusty voice. The attendant jumped, and well he might, for no previous competitor had had to shout his own number; there were too many ready and willing to do it for him.

On enquiry C. R. Collier quietly remarked to the officials at Braddan that his engine pulley bearing was giving him trouble, but he might easily have been referring to something of much less importance, so calmly was the statement made.

Returning to Quarter Bridge we met Dixon (Cleveland) pushing his machine, having experienced trouble with the timing gear. A little further on Kickham and Bailey rode past together; on the previous round they were separated by six minutes.

W.G.



H. A. Collier (Matchless) finishing in third place, average speed 46.5 m.p.h.



## THE VICTOR AND HIS MOUNT.

IT was a few minutes to two when F. A. Applebee finished a winner of the Tourist Trophy of 1912, having covered the course of 187½ miles in 3h. 51m. 3s., or an average speed of 48.69 m.p.h., i.e., 1.14 miles an hour faster than O. C. Godfrey, last year's winner. The machine he rode, a two-stroke two-cylinder two-speed chain-driven Scott, shod with Continental tyres, had a capacity of 486.6 cubic centimetres, the smallest engine in the race, excepting the three Junior machines.

Chatting with the winner immediately after the conclusion, he told us that his machine had run faultlessly throughout except for a brief period of misfiring in the first lap. Twice he stopped to replenish his tanks at Ramsey, and with the assistance of O. C. Godfrey clocked the record times of 15s. and 14s. respectively. On two occasions his stand fell, but he managed to kick it up on the run. He knew his position every lap, as he had arranged with his father, F. W., to signal to him. "There were no incidents at all," Applebee said in response to our query. It was a case of "sit fast and hold tight" throughout. Still, judging by the way the Scotts held the road, thanks to their low centre of gravity and smooth running engine, there was less difficulty in holding on than in the case of most of the other leading competitors.

Applebee once ran on to the footpath at Willaston corner, but he did it purposely to avoid the gutter. His radiator was only just warm at the finish, proving the efficiency of the water-cooling apparatus. Surely Godfrey and Applebee are ideal partners, winners respectively in 1911 and 1912.

Mr. Alfred A. Scott, the designer of the machine bearing his name, saw Applebee's performance, and was naturally highly delighted. In face of strong opposition, Mr. Scott was brave enough to abstain from signing the manufacturers' bond, and his independence of spirit has brought his machine the finest advertisement it could possibly have had.

Questioned as to whether the gear-driven rotary distributor valve would eventually find a place on the standard machine, Mr. Scott said that it certainly improved the flexibility and general running, but he did not like what he called the "abominable gear wheels." Eventually, however, it might be

adopted. The Scott pistons were noticeably clean. Three diagonally cut rings, two above and one below the gudgeon, were used. The gear ratios were 3 and 4.8 to 1.



First and second to finish, F. A. Applebee (Scott) and J. R. Haswell (Triumph).

## THE FIRST SINGLE-CYLINDER RIDER.

JAMES R. HASWELL, of Crick, near Rugby, put up a magnificent ride. By reason of his many records at Brooklands, he was regarded by many as having a splendid winning chance, and his opening laps confirmed the belief. Haswell rode fearlessly and cornered in true racing style, several times hitting his right foot-rest on the ground owing to laying over at an acute angle.

## Practically a Non-stop Run.

He enjoyed a non-stop run except for two halts to replenish at Ramsey, although bothered by a stretched exhaust lifter wire. His Dunlop tyred Triumph was standard throughout except for the Starney-Archer two-speed gear and also a detail in connection with the carburettor, which had a receptacle underneath the float chamber containing a gauze filter. He used a rubber petrol pipe. The engine was in wonderfully good condition at the finish, the domed-top piston having only one step cutting at the top and drilled with oil holes. Gear ratios of 4 and 6 to 1 were used.

## AT THE PALACE.

Motor cyclists attended in their thousands at the Palace on Monday evening, when the Clerk of the Rolls handed over the trophy to Applebee, who was cheered to the echo. Much amusement was afforded when efforts were made to persuade Applebee senior and Haswell to make speeches. Major Lloyd said he hoped that a more strenuous and more interesting T.T. would be held early in June next year. (Cheers.) The awards were then announced as follow:

F. A. Applebee (Scott) the Tourist Trophy, £40, and a gold medal.

J. R. Haswell (Triumph) £20 and a gold medal.

H. A. Collier (Matchless-Jap) £10 and a gold medal.

J. A. Hoffman (Triumph) Private Owners' silver cup.

Gold medals were awarded to C. R. Collier (Matchless-Jap), J. A. Hoffmann (Triumph), J. W. Adamson (Triumph), J. R. Alexander (Indian), C. R. Martin (Triumph), A. H. Alexander (Indian), and Alister Kirk (Triumph).

The consolation prize presented by the proprietors of the Palace to the favourite (decided by vote) who did not finish first was awarded to Frank Philipp (Scott).

## CLUB NEWS.

## Evesham M.C.

Result of reliability trial: 1, D. Young (8 Morgan Runabout); 2, F. I. Willmott (8 Morgan Runabout); 3, F. Sharp (3½ B.S.A.).

## Stockport and District M.C.C.

A reliability trial was held on the 23rd ult. over a course of 115 miles. Results:

SIDECAR CLASS (h.p.s. 100).—1, H. Greenhalgh (Matchless), 97 marks; 2, J. Collier (Clyno), 89; 3, F. T. Lees (Rex-Jap), 86.

SOLO MACHINES (h.p.s. 100).—1, H. Marsden (5 h.p. Matchless), 88 marks; 2, J. Harding (6 h.p. N.S.U.), 86.

## Birmingham M.C.C.

The open reliability trial for passenger machines will be held on the 20th inst. Particulars may be obtained by application to Mr. H. J. Cox, 21, Stirling Road, Edgbaston.

## Wisbech and District M.C.C.

A club has recently been formed in Wisbech under the above title. Various social runs and competitions have been held, amongst them the following:

May 29th.—Flexibility hill-climb.—Single-cylinder class: 1, Brown (3½ Triumph); 2, Brooks (3½ Triumph). Open class: 1, Clayton (2½ Douglas).

June 19th.—Petrol consumption trial on formula: 1, Mott (8 Bat), 90 m.p.g.; 2, Crabtree (3½ Rover), 140 m.p.g.

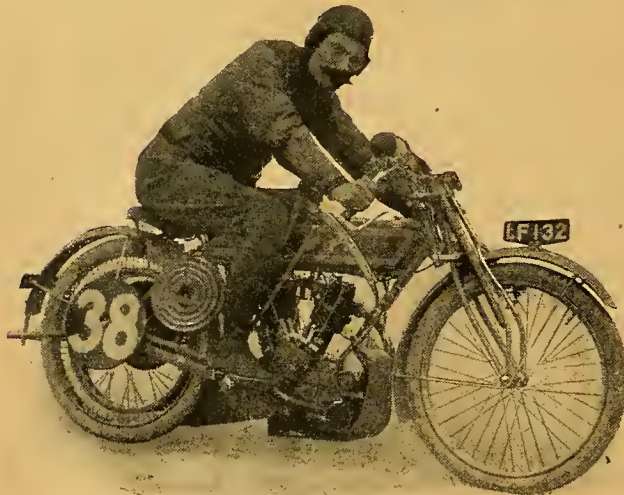
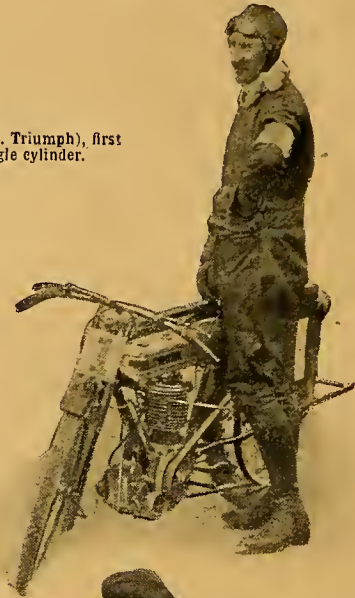


## THE VICTORIOUS COMPETITORS AND THEIR MACHINES.

F. A. Applebee (two-stroke Scott), the T.T. winner.



Second, J. R. Haswell (3½ h.p. Triumph), first private owner and first single cylinder.



H. A. Collier (Matchless-Jap), third in order of speed.



Fourth, Charles R. Collier (Matchless-Jap).

## T.T. TRIFLES.

Some of the Junior twins accelerated perceptibly better after a corner than most of the Senior singles

It is unusual for Franklin to fall. He had two on Monday—one at the Bungalow, and again at Bray Hill, which buckled his front wheel so badly that he was stopped.

The Triumph gear ratios were 4 and 6 to 1 (the bottom gear being disconnected), and the riders changed down at every corner to obtain rapid acceleration.

E. C. Paskell's happy and original idea of entering a Junior machine in the Senior Race on behalf of the Colmore Depot provided most excellent results for comparison. Owing chiefly to non-delivery, there were actually three Junior machines in the Senior Race—two Douglases and a Humber.

David C. Bolton is ever unfortunate in T.T. races. This year he rode magnificently on his Rudge-multi and had gained fourth position on the fourth lap. Everybody was sorry when it was learned that he had broken a valve at Sulby Bridge on the last time round.

A. S. and W. Jones were the two first men to turn up at the start, both with lady passengers on the carriers.

After the Douglas win several leading manufacturers resolved to standardise the belt-cum-chain drive for 1913.

S. F. Garrett (Regal-Green) started with the unlucky No. 13. He started well but, singularly enough, finished thirteenth. He had at least two tumbles.

The binding with insulating tape of all the likely parts to shake loose, such as mudguard stays, etc., was a smart move on the part of the Indian competitors.

The Singer tank cushion and knee grip combined was a good little fitment; it prevented any vibration of the tank against the top tube.

Geo. Griffith's little Humber showed up well in the Senior Race. He told us that he passed more than one Senior competitor on the level stretches, and in contrast to the belt troubles experienced by the riders of this make on Friday, his Pedley belt was untouched throughout.



## Club News.—

## Essex M.C.

The annual twenty-four hours ride from Woodford to York and back will take place on August 30th and 31st, when the moon will be at its full. The route will be *via* Cambridge, Huntingdon, Grantham, and Doncaster.

## Westmorland M.C.C.

A petrol consumption competition was held on June 20th over a course of thirty-six miles. Result: 1, C. Cumpstey (New Hudson); 2, H. B. Harrison (Rudge); 3, T. O'Loughlin (Rover).

## Middlesbrough and District M.C.C.

Ten competitors completed the course in the annual 200 miles reliability trial. The route was a difficult one and comprised Ormesby Bank, Birk Brow, Whitby, Scarborough, York, Harrogate, Ripon, Bedale, and Northallerton. Result: 1, J. Dale (3½ Triumph); 2, W. Armstrong (3½ James and sc.); 3, J. Gilchrist (3½ Zenith); 4, E. Young (3½ Scott).

## Chorley and District M.C.C.

A hill-climb was held on the 19th ult. at Rivington, on a private road, by permission of Sir W. H. Lever. Results: Solo Class.—1, J. Cowsill (3½ Rudge), time 49s.; 2, T. Bentley (3½ Triumph), 66s.; 3, J. Leach (3½ James), 70s.

Sidecars.—1, T. Bentley (3½ Triumph sc.); 2, J. Cowsill (3½ Rudge sc.); 3, J. H. Yates (3½ J.W.C. sc.).

## North-west London M.C.C.

The members' hill-climb was successfully run off on Saturday, June 22nd, at a new hill near Dunstable, which provided good sport.

The results on formula  $\frac{C \times T}{W}$  worked out as follows:

## 350 C.C. AND UNDER.

	Fig. of merit.	Time.
1. G. E. Purchase (2½ Douglas) ...	18.5	20½
2. J. Gibbs (2½ Humber) ...	18.7	18½
3. F. L. B. Dyne (2½ Douglas) ...	22.3	27

## 500 C.C. AND UNDER.

1. J. Gibbs (2½ Humber) ...	18.7	18
2. E. L. Buchanan (3½ Norton) ...	20.0	13½
3. W. C. Knight (3½ Triumph) ...	20.1	13

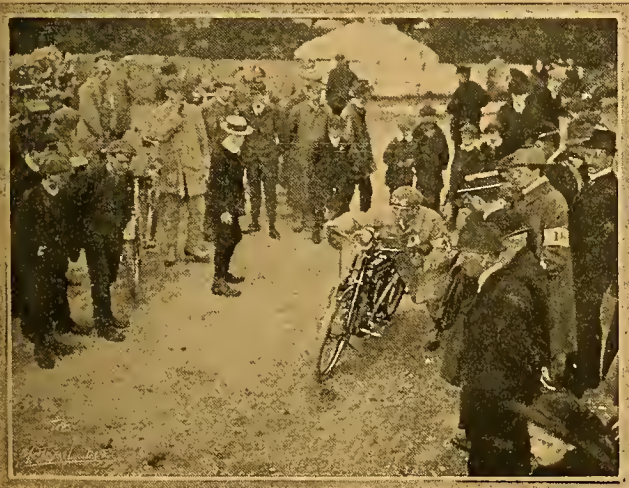
## OVER 500 C.C.

1. W. Cooper (3½ Bradbury) ...	23.0	14½
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## PASSENGER MACHINES.

	Fig. of merit.
1. A. J. Dreydel (5 Ivy-Precision and sc.) ...	29.4
2. F. J. Wilmott (8 Morgan Runabout) ...	31.7

The French tour will start on August 2nd, and a second party will be arranged for August 3rd if necessary. The Circuit du Rhone Race is to take place on August 11th, over a very sporting course of about 120 miles.



Dublin and District Motor Cycle Club Novices' Trial  
P. Beattie (3½ h.p. Rudge) leaving Inchicore.

## Dewsbury M.C.

This newly formed club held a knock-out hill-climb on the 25th ult. The winner of the handicap turned out to be Captain G. J. Newsome (3½ Rover and sc.), 28s. start. Results on time; 1, F. H. Dunston (3½ Rudge), scratch; 2, C. Sydney (3½ Bradbury), scratch; 3, W. J. M. Sproule (3½ P. and M.), 6s.



W. Woods (Triumph) and N. O. Sresby (Rudge) starting in the class for Standard Singles in pairs at the Chesterfield and District M.C.C. hill climb, held on the 26th ult., at Stone Edge.

## Leicester M.C.C.

On the 20th ult. members and friends, numbering altogether about thirty, paid a visit to Birmingham for the purpose of inspecting the Armstrong Gear Co.'s works.

## Daimler M.C.C.

The annual reliability and speed-judging contest will be held on July 13th. Competitors will be required to make four circuits of a course at a speed of twenty miles per hour, the total distance being about 100 miles.

## Surrey M.C.C.

The results of the reliability trial for the Triumph challenge cup, held on the 18th and 19th of June, from Guildford to Exeter and back, are as follows: 1, H. Mitchell (3½ Premier), Triumph cup and Bates tyre; 2, J. H. Sparks (3½ Trump-Jap), gold medal; 3, R. E. Eley (3½ Bradbury), silver medal; T. G. Meeten (3½ Rudge and sc.), special gold medal for passenger machines. P. Kork (3½ Triumph), S. Holbrook Crow (3½ Zenith), E. Cox (3½ Zenith), H. R. Owtram (3½ Triumph), C. R. Nash-Worham (6-8 Zebra), and C. J. Feeny (3½ Triumph), bronze medals.

## Doncaster and District M.C.C.

Some good sport was witnessed at the recent hill-climb. Results:

Class 1 (touring lightweight singles).—1, J. A. Bassett (2 Humber); 2, G. Brenchley (2½ A.J.S.).

Class 2 (touring lightweight twins).—1, F. Roberts (2½ Humber); 2, B. Crouch (2½ Humber).

Class 3 (T.T. single-cylinder, fastest time only).—1, E. Goult (3½ Rudge); 2, D. Gill (3½ Calthorpe); 3, T. Durant (3½ Norton).

Class 4 (standard touring single-cylinders).—1, L. Baker (3½ Rudge); 2, G. Brenchley (2½ A.J.S.); 3, F. Dunstan (3½ Rudge).

Class 5 (twins up to 1.100 c.c.).—1, J. H. Wilkinson (5 Matchless), fastest time of the day.

Competitors who made fastest time in Classes 1, 2, 3, 4, and 5 ran off for the final for the Humber gold medal, and were handicapped according to the difference of their previous fastest times. The competitors who rode were J. A. Bassett, F. Roberts, E. Goult, T. Durant, and J. H. Wilkinson. F. Roberts was the winner of the medal on his 2½ h.p. Humber.



# LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

## Hill-climbing.

Sir,—If some of your readers want to try a mountain climb let them attempt Moel Fawmau, near Mold, Flint. This was ridden up some years ago by J. Edge, of Liverpool. It is 1,820 feet high.

MOLD.

## Motor Cycle Insurance.

Sir,—My attention has been drawn to the paragraph in your issue of June 20th respecting the recent improvements in the A.C.U. policy which may have given the mistaken idea that the A.C.U. have on their staff an insurance manager. This is not absolutely correct.

Mr. A. H. Priestley, of 199, Piccadilly, W., is not on the staff of the Union, but he is the originator of our insurance scheme, and he renders valuable assistance to the Union by dealing with all enquiries on insurance matters in his official capacity as West End manager of the Liverpool Victoria Insurance Corporation, Ltd., who issue our recommended policy.

T. W. LOUGHBOROUGH, Secretary A.C.U.

## Dangerous Driving.

Sir,—With reference to the letter from "C 5546" in the issue of June 20th it is a little difficult to understand your correspondent's point of view, as he is apparently one of the first victims of the increased activity of the Cheshire police, referred to by "Within the Legal Limit." The latter was protesting against the reckless driving of a few motor-cyclists, which is likely to bring trouble upon all riders, the majority of whom no doubt drive with due care and consideration. It would therefore appear that he should be supported by all who have the true interest of the pastime at heart.

"C 5546" makes some sweeping assertions about the nature of the traffic on the Saturday in question. The danger on the part of the Manchester Road referred to lies in certain cross roads, which appear to those driving along them to be main roads, and I presume "C 5546" is not prepared to assert that there was no traffic along these.

M.

## Should Ladies Race?

Sir,—One more word, please, to appease the mind of Mr. Holmes on a few subjects on which he apparently feels sore. Firstly, my letter was not intended to give offence—in fact that is my way of being pleasant—and I do not liken pram pushing to motor cycle racing. I use the simile as a form of contrast; he really should read a letter through twice before answering. My "racing career" evidently worries him. My only entry was at the Coventry and Warwickshire M.C.'s hill-climb last September, where I finished among the "also ran"—fifth out of five. If the same club have a ladies' class this year, I hope again to enter, and maybe shall finish last. And now Mr. Holmes, anything else?

(Miss) MAY WALKER.

Sir,—May I explain the difficult points of my letter to Miss May Walker. The allusions to the Suffragettes and coal strikes are not shots but analogies. It is not suggested that ladies racing has anything to do with either. I am not a minor, I only wish I was. "The usual thing" was a quotation, that is why it was in inverted commas. The object of these illustrations was to show how difficult it is to please all parties in these days. Even in Æsop's time a man tried hard but failed. Perhaps if Miss Walker had read my letter twice she would not have missed these rather obvious points.

ACTON HILL.

B18

## The M.C.C. Team Trials.

Sir,—I was an interested spectator at the M.C.C. team trial at Daventry on June 15th, and am fully in accord with your praise of the way it was managed. Might I, however, with all the humility of one who does not know the difference between an internal cam and a carburetter, make a suggestion for similar future events? Would it not be better if all members of the competing clubs who were not themselves taking part in the trial were debarred from travelling over the course while the contest was on?

Suppose a reserve, riding with fruit for his friends, meets his club team on a quiet stretch of road. Suppose he knows by his watch that they are so much too fast or so much too slow, even a good sportsman would be tempted to speak. Why not forbid him to go on the course and remove the temptation.

H. S. TWELLS.

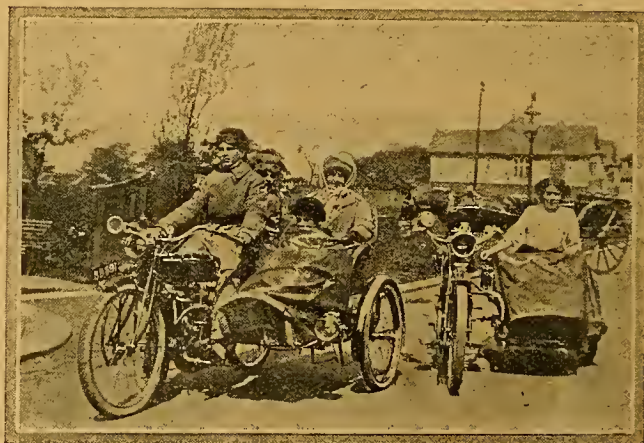
## Petrol Consumption.

Sir,—I have often checked the consumption of my 1910 Triumph (fixed engine) by the distance run on a measured amount contained in a special drum. I never have any difficulty in running 95 m.p.g. in undulating country out here. I cannot say that I have ever checked it on long hill-climbs. I did 138 miles on a full tank one day, and then there was a small amount over; that works out at 112 m.p.g.

Punjab, India.

R. D. E. DARELL.

Sir,—I enclose photograph of my Indian and sidecar containing mother and two brothers (not counting luggage). We have two Indians in our house. What I wanted to write you about was petrol consumption. I ran with above load to Berwick on May 24th, 1912, not attempting to economise in the least (Berwick to Newcastle is something over sixty-



The writer of the accompanying letter with Indian sidecar and passengers.

nine miles). I ordered one gallon of petrol at a garage in Berwick, expecting the tank would take 1½ gallons, but it would not take a gallon. That is to say that it ran on less than a gallon nearly seventy miles! I am only sixteen years old, and have had four machines, including one 2½ and one 3½ New Hudsons, but prefer chain drive for sidecar work.

BAXTER ELLIS.



**The Price of Petrol.**

Sir,—The letter of A. W. Gamage, Ltd., in your issue of June 20th is very interesting, but if the suggestions contained in it are carried out it appears to me it can only be at the cost of eliminating the ordinary dealer and creating a monopoly for a few of the large houses. The ordinary dealer, especially in the country, is at the mercy of the manufacturer or his wholesale agent, and it is impossible for him to dream of fighting them. Every increase of price in the supply to him means that same increase, plus an extra percentage for profit, to the itinerant motorist. It is doubtless hard on the motorist, but the retailer is obliged to live, except, of course, motorists grant the monopoly to such establishments as A. W. Gamage, Ltd., and knock the retailer out altogether. DEMOS.

**Another Road Danger.**

Sir,—Some additional legislation with a view to the proper regulation of heavy traffic on country roads is urgently required.

On the 22nd ult. while driving a motor cycle with sidecar from Buxton towards Bakewell, I overtook three heavy motor charrs-à-banc. After considerable trouble, I managed to pass them, but was immediately afterwards blocked by a herd of cattle and had to stop my engine. The gradient was fairly stiff, and before I was able to start again, all three vehicles were again ahead. As there was a good deal of low gear work still before me, I decided to let the engine cool down and give the cars of Juggernaut an opportunity to get well ahead. I hoped that they would turn off somewhere, but half an hour later a dust storm in front indicated that my hopes were in vain.

The road was now level or slightly down hill. I was going well and decided, justifiably I think you will admit, to pass. I gave several warnings with the horn, and noted with satisfaction that the omnibus drew slightly to the left. The passengers in the rear had seen me, and I judged that the driver had been informed of my approach. I had drawn level with the front wheel when the driver, who afterwards blamed some of the passengers for talking to him, seemed to let his wheel follow his eye to the right, with the result that my sidecar was struck and lifted right over the bicycle. I found myself on the road, and my wife, who had made the longer journey over the bicycle, joined me an instant later. Had we been thrown the other way, the accident would almost certainly have proved fatal to one or both. As it is, my machine is a total wreck.

Now, sir, I think, as a result of my unpleasant experience, that something ought to be done to compel the owners of long noisy vehicles to have some responsible person at the rear. The driver declared that he could not hear my horn, and I believe that he was telling the truth; twenty yards behind I could not hear my own engine, and the cut-out was open.

I may add that, while a few of the passengers showed us kindly consideration, the tone of the crowd was distinctly hostile. D. H. MCCURTAIN.

**Overloading.**

Sir,—I was much interested in your leaderette in *The Motor Cycle* of June 20th on "Overloading" with which I heartily agree, but you mention the 2½ h.p. twin-cylinder machine as being the most suitable type for the average beginner. I venture to think that a 2½ h.p. single-cylinder is the best type of machine for a novice, as it is certainly easier to understand in the first place and simpler and less expensive to keep up.

As regards simplicity, there is nothing to choose between a 2½ h.p. single and a 3½ h.p. single, the chief difference being that a 2½ h.p. would be easier and lighter to handle and push about. Regarding the practice of overloading by passenger-carrying on the carrier, I am glad to read that you do not approve of it as a regular thing, but I think that the manufacturers themselves are partly to blame, as one cannot help noticing the photographs appearing in the advertisements depicting their particular make of machine carrying as many as six people up a steep hill. Well the individual motor cyclist is led to think that if the manufacturer advertises the machine in this way and appears to hold with it, surely there is no harm for him to carry only one person on the carrier.

I contend that the 2½ h.p. and 3½ h.p. motor cycles are made to carry one and not two or more, as the tremendous weight, imposed by passenger-carrying, is bound to tell on the machine in the end.

A 3½ h.p. motor cycle with a two or three speed gear is quite capable of taking a sidecar nearly everywhere as we all know, but the strain of a sidecar is, I think, less severe on the machine than continuous passenger-carrying on the carrier, beside being far safer. S. W. TURNER.

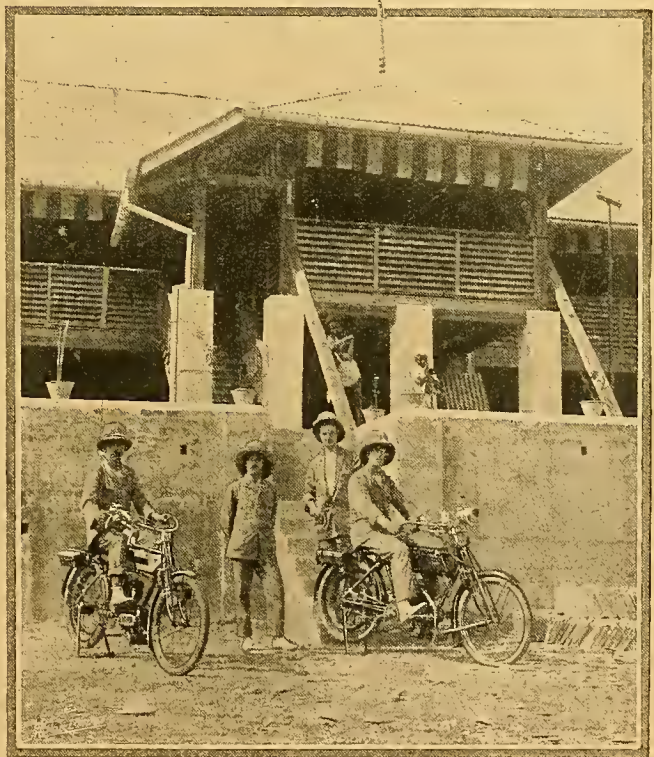
[We recommended for an unmechanical novice 2 or 2½ h.p. —Ed.]

**Motor Cycles in the Malay States.**

Sir,—It has occurred to me that a letter dealing with motor cycling as practised in this country might prove of interest to your readers.

This country, of which most people at home knew next to nothing a few years ago, has developed very rapidly lately, due to the "rubber booms," and, under a rich and progressive Government, not the least important direction this development has taken has been in the provision of a system of roads which are, for the most part, well-engineered and wonderfully good of surface considering all things. In consequence motoring has been eagerly embraced by all who were in a position to indulge in it.

Speaking for myself, I have had many enjoyable trips, both in friends' cars and on motor cycles, of which I have



A New Hudson and Lincoln-Elk outside the writer's bungalow.

owned two. My first mount was a 1909 Triumph, and very trusty and handy I found it. Recently I have invested in a 1912 New Hudson, 3½ h.p., with Armstrong three-speed gear, which I purchased through the local agents, Hock Leong Hin, Kuala Lumpur. I may say straightaway I could not wish for a mount more suited to the peculiar needs of this country. Even on the main roads, well engineered though they be, one constantly meets with sharp bends, nay, veritable "Devil's Elbows," in the middle of steep hills, and if one has to cross one of the many passes it means a succession of sharp corners, which can only be taken at a crawl, whether ascending or descending; these are nightmares to riders of single-g geared machines.

I always look forward with pleasurable anticipation to the weekly advent of *The Motor Cycle*.

Federated Malay States.

NEW HUDSON.



## Speedometers and Wheel Sizes

Sir,—With regard to Mr. C. R. Woolley's letter, which appeared in your issue of June 20th last, and the remarks put forward in the said letter referring to one of our speed indicators, we would like to remark that we have always recognised the fact that there is a difference between the actual and nominal size of a tyre. We proved this to be the case as the result of experiments which we conducted on the road before placing our motor bicycle speed indicator on the market, and in order to compensate for this difference we altered the ratio of our gearing.

We would add that we have found from experience that all tyres of a given diameter are not identical in size. This, combined with the fact that certain riders always run with their tyres inflated to a pressure which is either above or below the average, makes it exceedingly difficult to provide against slight inaccuracies in certain cases. At the same time, we are always willing to supply special gearing, exactly suited to the requirements of a particular machine, if, when ordering, the purchaser will give us the proper information. The most useful information to supply is the exact distance from the ground to the centre of the wheel with the tyre normally inflated and with a rider seated in the saddle.

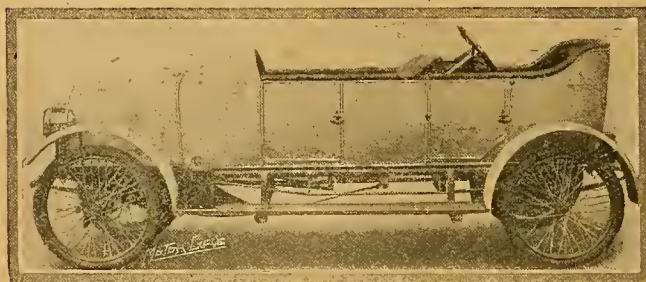
If your correspondent will be so good as to communicate with us in the matter of his speed indicator, we shall be only too pleased to forward him a gear wheel to replace that already attached to the spokes of his front wheel, which, when fitted, will correct the discrepancy which he has noticed in the readings of his speed indicator.

THE COWEY ENGINEERING CO., LTD.

Sir,—Under the above heading your correspondent C. R. Woolley comments on the variable reading of a speedometer due to the variation in tyre size. Although the remarks do not specifically refer to our Jones speedometer, we feel it incumbent upon us to point out that in our Jones speedometer, as in our Veeder cyclometer, allowance has been made in the gearing for the average compression of a pneumatic tyre actually correct to size, but it is, of course, well known that so-called 26in. tyres, for instance, vary considerably in their diameters, and, of course, the method of inflation will also have some bearing on the wheel travel. It would be obviously impossible to supply a speedometer that would automatically adjust itself according to the actual tyre diameter. It is, therefore, up to the party concerned to give the manufacturer with his order the actual, not nominal, diameter or travel of the tyres, and we have no doubt that our competitors, like ourselves, would be able to supply an instrument correctly geared to suit.

In the case of our Veeder cyclometer, which your correspondent touches on, it is true we have standardised actually a 27 $\frac{1}{2}$ in. cyclometer as for a 28in., as it was found in the stress of competition that the tyre manufacturers had gradually reduced the size of their so-called 28in. tyres, but these are not parallel cases. In the one you have a general cut down in tyre size. In the other, in the case of motor cycle tyres, the position is that such tyres may vary one way or the other, according to the make and design of the tread. One tyre may be as much over-sized as another may be under-sized. That, we think, is where the difficulty comes in. The remedy, therefore, rests with the party ordering the speedometer to be careful to state the actual diameter of the tyre, as we have endeavoured to explain above.

MARKT AND CO. (LONDON), LTD.



The latest type of Crescent Runabout with flush sided body. This cyclecar is now friction driven and can be supplied with tandem (as shown) or sociable seating.

## British Motor Cycles in Canada.

Sir,—As a constant reader of your paper, I take the liberty of writing you just to comment on a leader which appeared in an early May issue. From the address below you will note that I am located in the Far West, and so far as applies to Vancouver I wish to endorse your warning to the British motor cycle makers with regard to this important trade out here. One year ago motor cycles were few and far between in our streets, but a great change has come about, and there seems at present to be a perfect craze for these machines.

As an enthusiastic motor cyclist, and having been connected with the trade in the old country, I am surprised that so few British machines are seen amongst the hundreds that now throng our thoroughfares. Nine out of every ten are American so far as I can see, and this in spite of the fact that the British makers have a large preference in duty. On the occasion of my ordering an English machine of a well-known make I was informed that the home makers were so busy with home orders that I might have to wait a considerable time for my machine. Since then, through the courtesy of an agent, I have had my machine despatched, and I am hoping to be able to show some of my friends here that the British motor cycle can hold its own with anything.

There is a great future for the motor cycle in B.C., and this market is certainly worth looking after.

Wishing you every success with your up-to-date paper, which I never fail to have sent me.

Vancouver, B.C.

AUTO.

## Whose was the First Ascent?

Sir,—Having read with interest accounts of the various attempts to scale the famous Bwlch-y-Groes (Dinas Mawddwy) with a sidecar machine, my friend, Mr. J. Mills, decided to attack the hill with his 6 h.p. Enfield sidecar.

Accordingly, at 10 a.m., on Friday, June 21st, a start was made for Bala, the sidecar being occupied by George Yarnold, and I accompanied the party on a Triumph.

Bala being reached without incident, we pushed on and arrived at the summit of the Pass, both machines having climbed the "easy" side without difficulty.

The Triumph was then abandoned, and descending as far as the gate on the carrier of the Enfield I sat down to wait.

The machine disappeared from sight, round a bend, and after what seemed an age, could be distinguished returning up the steep gradient at a good speed.

The first attempt was, however, doomed to failure, for on reaching the steep section, after the gate, Mills, in his excitement, fouled his levers, and the machine stopped dead.

A fresh start was made, and this time all went well, the J.A.P. engine pulling wonderfully, and after the worst patch was covered, accelerating to the summit.

The latter portion of the climb was witnessed by a Mr. Hugh Morris.

I should like to say, in conclusion, that although this pass is without doubt an extremely steep and lengthy climb, we are of the opinion that the hill on the road from Llanfair Talhaiarn to Llansannan (the former village is five miles from Abergele) is considerably steeper, and the surface is much worse. This hill is about three-quarters of a mile long.

FREDERICK WELLS.

Sir,—Regarding my climb of Bwlch-y-Groes, I might say that when I was returning down the easy side after successfully climbing the pass, both Mr. Lord and myself stopped at the same spot and chatted together. I told him I had climbed the pass, and my friend, Mr. Fredk. Wells, has written you an account of the climb. He (Lord) was then going up with Mr. Owen, of Bala, in the sidecar, whom he afterwards successfully carried up the pass as a passenger.

Lastly I might mention my gears were standard, which are, I believe, 5 and 9 to 1.

JAMES MILLS.

P.S.—I think the above account proves that mine was the first witnessed sidecar climb of the pass.

## SUMMARY OF CORRESPONDENCE.

Mr. L. C. Wilks, whose letter on "The Danger of Uncontrolled Dogs" was inserted on June 20th, writes to say that he is not a member of the C.T.C., but that "The Dog's Black List" is under the control of the N.C.U.

Mr. R. H. Adams writes that the mileage mentioned in his letter of last week should read 11,000 not 1,100



# Bowdenism

(The Science of Simple Control.)

## Genuine Bowden Control Wire.

Beware of Cheap and Inferior Imitations.

THE True and Perfect Quality of BOWDEN WIRE MECHANISM attained only through fifteen years' experience is marketed under the following Trade Marks:

**BOWDENITE**—The popular style of black waterproofed wire used on all motor cycles.

**BOWDENSILVER**—Similar to the above but having an armoured wrapping of white metal ribbon to give further protection. This is also made with brass wrapping under the style of Bowdenbrass.

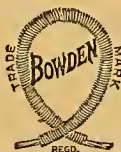
**BOWDENAMEL**—Used for work where protection from the ravages of weather is not essential. The wire has merely a coating of enamel.

**BOWDENOIR**—Same as above, except that the wire is oxydised.

**BOWDENSULO**—Similar to preceding, but with a "tinned" finish.

Having regard to the serious functions to be performed by BOWDEN WIRE, we *Refuse to Lower Quality.*

See the above marks on  
the Genuine Article.



Note—Genuine  
Trade Mark  
has no place  
name under it.

We shall be glad to send our  
1912 Catalogue on request.

**BOWDEN  
WIRE Ltd.,**

Pratt St., Camden Town,  
**LONDON.**



# **JUNIOR T.T. RACE—RESULTS.**

11 competitors finished, and out of these 9 used throughout the Race the new dark-rubber

## **“LYSO” BELT**

with the following wonderful results :

Finishing 1st.	W. H. BASHALL	on a DOUGLAS.
2nd.	E. KICKHAM	„ „ DOUGLAS.
3rd.	H. COX	„ „ FORWARD.
4th.	STEWART	„ „ DOUGLAS.
5th.	OWEN	„ „ FORWARD.
7th.	PETTY	„ „ SINGER.
8th.	HASLAM	„ „ DOUGLAS.
9th.	PRATT	„ „ “O.K.”
11th.	EVANS	„ „ HUMBER.

9 out of 11—How's that for “LYSO” RELIABILITY?

Always specify and use “LYSO” Dark-Rubber BELTS!

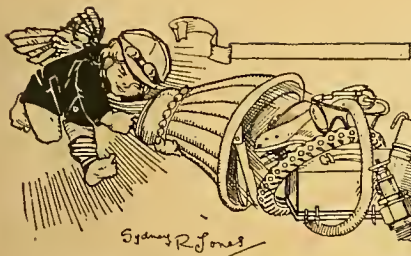
## **LYCETT'S**

**“The Saddlery” BIRMINGHAM.**

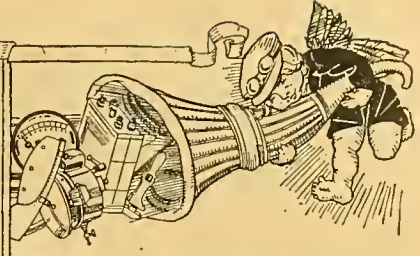
Write for a copy of our new issue of “The Saddle Book” free.

*In answering this advertisement it is desirable to mention “The Motor Cycle.”*





## AMONG THE ACCESSORIES



### The A.K. Sporting Belt.

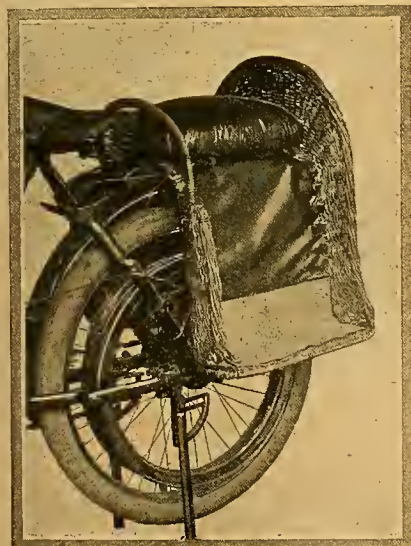
The A.K. Company's chain belt can be purchased with a tool bag attached if desired. The illustration shows the tools and spares which may be carried in the bag. It will hold just those things the sporting type of rider is likely to



need in a hurry, such as an adjustable spanner, a belt fastener, repair outfit, sparking plug, and a piece of spare belt. The A.K. Manufacturing Co., 36, Swaine Street, Bradford, supply the belt and tool bag, but not the tools.

### Tandem Seat.

W. J. Bradley, 116, Regent Street, Leamington, is the maker of a new pattern tandem seat, which is provisionally patented. The seat fits over the back wheel like a pannier, thereby enabling the passenger to sit on it facing right or left, or to straddle it, as desired. It is



made of wicker or cane, and covered with waterproof material, weighs 11 lbs. only, and has been tested to carry over 4 cwt. A foot rest is fitted to each side, and

when the seat is in position the rear wheel is covered from top of mudguard to centre of hub on each side, thereby forming a dress guard for lady passengers. It is supplied with or without a spring cushion and at a moderate price.

### Clutch Control. Exhaust Siren.

Messrs. H. Taylor and Co., Ltd., 21a, Store Street, Tottenham Court Road, W., inform us that they have lately brought out a handle-bar control to operate the clutch on Douglas machines. The device can be fitted by the rider or by Messrs. Taylor and Co. for quite a small sum.



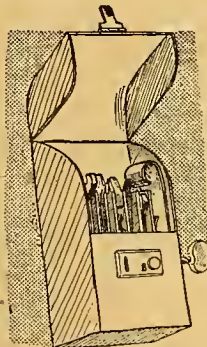
Another accessory introduced by this firm is an exhaust siren, a neatly designed alarm which is foot operated. This is quite a novelty in the way of methods of giving audible and sufficient warning.

### A Novel Mascot.

A novel mascot has been submitted to us by Maude's Motor Mart, 136, Great Portland Street, W. This mascot is a metal figure of a policeman, and in front is a small screw propeller. As the figure travels through the air, on the front of a motor cycle at speeds above four or five miles an hour, the propeller revolves and works the arms of the figure up and down. Seven-eighths or one inch clips are provided for attaching it to the handle-bar.

### A Three-ply Leather Belt.

J. T. Bradford, 91, Burnley Road, Colne, Lancs., has sent us a sample of leather belting which is so constructed that when passing round the engine pulley the bottom layers are compressed as little as possible, so enabling the greatest flexibility and preventing belt slip. Thin rivets are used, so that the strength of the leather is not destroyed by cutting large rivet holes, and wide copper washers on the top layers keep the leather from doubling up under driving stress.



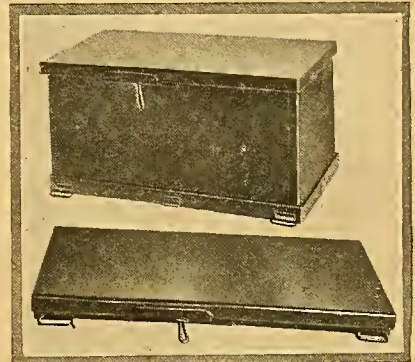
Novel tool kit, made by Middlemore & Lampugh. Each tool is separated from its neighbour by a strip of leather, the whole being locked tightly together by the spring shown, which is pushed into position at the end of the kit.

### A Convenient Spare Tank.

The Service Company, Ltd., 292-293, High Holborn, W.C., have introduced a torpedo-shaped spare petrol tank, designed to be fitted to any convenient tube of a sidecar, to which it is fastened by brass straps. It is provided with a filler cap of ample size and a petrol tap.

### A Collapsible Valise.

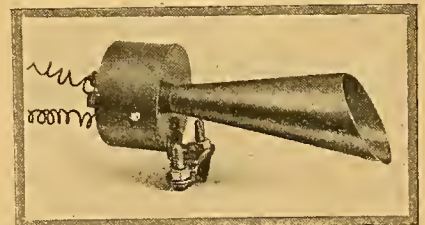
A collapsible metal box or valise is made by the "Holero" Company, 740, Seven Sisters Road, N. This measures 7in. x 7in. x 4½in., and is intended to hold



the usual amount of toilet necessaries for one night's use. When not in use the box may be made to fold entirely flat. Loops are provided for straps to fasten the box to the luggage carrier, whereon it may remain permanently if desired.

### An Electric Motor Cycle Horn.

The Fortavox is the name of a motor cycle electric horn just introduced by Ward and Goldstone, Springfield Lane, Salford, Manchester. It is small and



neatly enamelled black, and consequently is no trouble to clean. It is worked by means of a dry battery, and when the switch is depressed emits a penetrating but not unpleasant sound. The wiring is of the simplest description, and if a sidecar combination be used, switches may be provided both for the driver and the passenger. If used with a sidecar a rather larger battery may be carried with advantage.



# My Most exciting Ride: No 5. F. W. BARNES.

Interrogated by L.C.

"I HAVE had so many exciting rides," said F. W. Barnes, when I tackled him on the subject, "that I could fill a volume, but there was one which I shall never forget. Most rides, currently exciting, become mere subjects for amusing anecdotes in retrospect, but my sidecar record ride with Weatherilt in the passenger seat at Brooklands on March 7th was nerve-racking enough. You must realise the enormous strain on the engine, frame, and tyres with a sidecar, going all out on Brooklands, with its many rough patches, before you can have any idea of the prevailing conditions in a two hours' ride at nearly fifty miles an hour. We had made adequate arrangements, and Weatherilt, instead of lying down in the car, had to replenish the oil and petrol tanks by means of a special appliance, and keep his eyes on the sidecar wheel, the watch, and lap scoring card."

"We soon accelerated to top speed, and were on the mile a minute mark after a steady lap. After seventeen laps Weatherilt with difficulty managed to replenish the petrol tank from a spare two-gallon tin, but with two more laps to accomplish in order to get fifty miles into the first hour, we ran short of oil. My passenger was struggling with the syringe and the spare oil, while I was fumbling about in order to receive it in the oil tank. As a fact I received it all over my face, for the jolting and the wind prevented Weatherilt from getting the oil into the tank and we both of us got smothered. Anyhow we stopped just before the expiration of the hour and loaded in the ordinary way. We were so oily that our fingers were like thumbs, and when we restarted the machine slipped out of my hands and I had to make a dash for it, landing in the saddle with as much luck as judgment. As we passed the time-keeper, I turned to Weatherilt to shout in his ears a query as to whether we had managed the fifty, and I never saw such a sight in my life. Weatherilt was an oily mass, barely recognisable, and I suppose I must have been nearly as bad. What with the oil in our eyes, and the attempts to get some in the tank, we

lost count of the laps, and simply went all out, bouncing about like a cork on the ocean. On some parts of the track we were doing nearly seventy, and it was at our greatest speed that I, with horror, heard Weatherilt say something about the sidecar wheel coming off. We were then passing under the members' bridge, and the bend was rather sharp. Like a shot I grabbed the exhaust lifter, shut the throttle, and applied the brakes, but these manoeuvres did not seem to check the speed, and every moment I expected

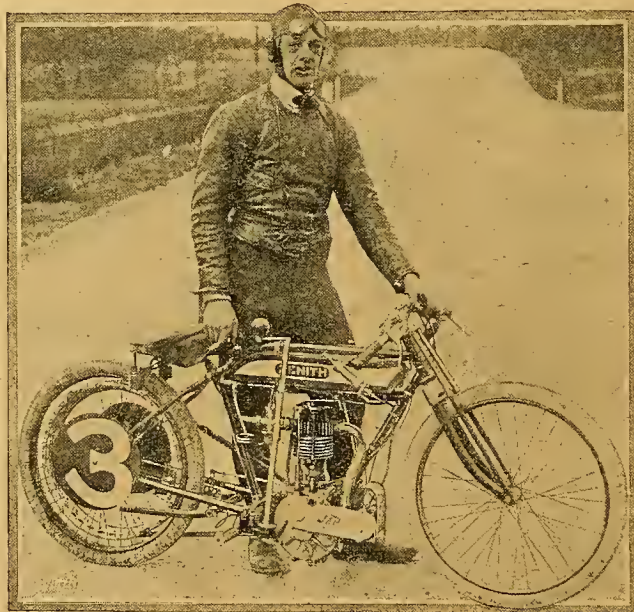
to see the sidecar wheel part company with the combination. Then we began to slow up with me feeling as scared as ever I was. Another yell—'Go on,' said Weatherilt, 'we're slacking.' With what little breath I had left I shouted 'What's the matter?' to which Weatherilt replied that the sidecar wheel was coming off—the track (lifting)! Oh, the relief! I opened out again, but it was an experience not to be forgotten. A bit later we stopped for more petrol. On again at a fine turn of speed, and we were getting near the finish when the belt fastener broke. On stopping, I turned to Weatherilt for the spare

belt, but he was stretched out in the sidecar, having received a blow from the belt which had temporarily stunned him. He had a nasty bruise on his forehead, and I began to administer first aid, when he came round and insisted on finishing the ride, which, after I had fitted another belt, we did, completing 100 miles in just over two hours."

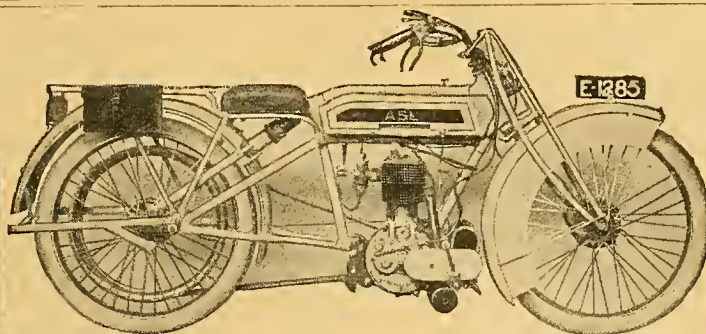
"Another little incident which occurred during my racing career was a fall at Brooklands while doing seventy-two miles an hour, owing to a burst front tyre."

"On another occasion I ran into a cord attached to a kite which had strayed from the aviation sheds. I was doing sixty miles an hour, and the cord cut through my clothes and then my hand as I tried to pull it away from my throat."

F. W. Barnes, who is the inventor of the famous Gradua gear and the works manager of the Zenith Company, secured fifty-three first prizes in 1911, and so far this year has secured fifty-eight.







"RIDING  
ON  
AIR."

"RIDING  
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"RIDING  
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"RIDING  
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"RIDING  
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"RIDING  
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AIR."

EVERYONE IS TALKING ABOUT THE NEW  
with  
**26 in.**  
wheels.

**A.S.L.**

with  
**26 in.**  
wheels.

with improved frame and perfect springing arrangements. It is without doubt the motor cycle de luxe. Speedy, silent, and smooth in its running, it can be ridden for long distances without the slightest sign of fatigue. A point which should commend this model to all long distance riders.

Head Office: 3, Great Winchester St., London, E.C. Tele.: "Infrequent, London." Phone: 1435 London Wall.

Works: Corporation Street, Stafford. Showrooms: The Motor Maintenance Co., 184, Gt. Portland St., W. Telephone: 4399 Mayfair. Sole Agents for Manchester and District: Manchester Motor Exchange, 82, Downing Street, Ardwick.

"RIDING  
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C.D.C.

# Stepney Road-Grip Tyres

## FOR MOTOR CYCLES.



The extraordinary success of the Stepney Road-Grip Tyre for Motor Cars has encouraged us to put on the market a similar tyre for Motor Cycles, and we guarantee that the same quality rubber and canvas is used in the manufacture of same as that of our Motor Car Tyre.

### PRICES.

Road-Grip Cover, 26 x 2½ in.	....	50/-
Inner Tube	"	9/9
" " butt ended "	....	13/4

The Stepney Road-Grip Tyre will grip the road better than any other form of non-skid, and is more resilient and lasts longer than a Steel-studded Tyre.

**FOR THOSE WHO WILL HAVE THE BEST.**

**The Stepney Spare Motor Wheel, Ltd.**

Stepney Works, Llanelli.  
168, Great Portland St., London, W.  
130-132, King St., Toronto, Canada.



**LONDON — EDINBURGH  
— AND BACK RUN.** The  
world-famous and always reliable

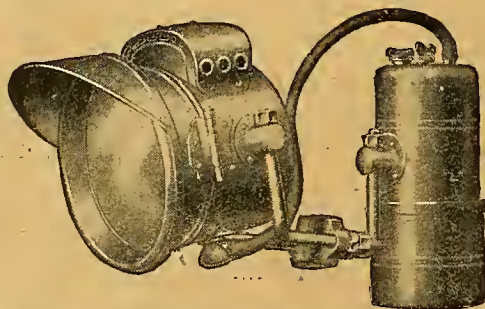


## Motor - Cycle Headlight

was the one used by Mr. G. Brough in the above great Run, which he won, and thus gained the M.C.C. CHALLENGE CUP and GOLD MEDAL for double journey. — A really fine performance, which points a moral:—

**Always use a "P. & H." Lamp** and so secure the highest efficiency in "Lighting Equipment" a wheel.

— The "P. & H." is not the most expensive lamp by a long way, but it is the most efficient by far. Note it—



### The Winner's "P. & H." Model 125

A powerful 7in. Projector Lamp, fitted with "Roni" Non-carbonising burner, specially silvered Mangin Mirror, and 4in. best plate-glass bevelled Convex Lens. Special Generator with Adjustable Bracket, complete with best grey rubber tubing. Can be fitted on handle-bar stem, or usual lamp bracket.

**Price, complete as illustrated, 27/-**

— obtainable of all Agents, etc., or direct.

**Powell & Hanmer, Limited,  
Chester Street, Birmingham.**

R.H.S.

**FOR  
TOURING  
and Long Spins**

## WAKEFIELD 'CASTROL'

(REGD.).

has no equal as a lubricant. It will make your engine run like a clock, and increase its speed, power on hills, and life.

**C. C. WAKEFIELD & CO.,**  
27, Cannon Street,  
LONDON, E.C.



NON-SKID

## THE "BURNETT" PATENT SUCTION - CUP TYRE.

### TESTIMONIAL.

30, Upper Sandhurst Road,  
Bristolington,  
BRISTOL.  
March 27th, 1912.

Messrs. The Burnett Motor Tyre Co.,  
Melksham, Wilts.

Dear Sirs,—It is with much pleasure that I express to you my satisfaction of excellent results I have from one of your Special 3-ply Motor Cycle Tyres, which I purchased from you in 1910.

I fitted tyre to the rear wheel of my 4½ h.p. single-cylinder motor cycle, sidecar attached, and ran about 3,000 miles without having the least bit of trouble, not even a puncture. I have since removed tyre to wheel of sidecar, and after 1,000 miles is still in excellent condition.

It is also interesting to note that during the time tyre was running on rear wheel of motor cycle, I used no less than three tyres of well-known makes on front wheel, which caused me no little inconvenience.

I may also add that I found tyre excellent as a non-skid during bad weather and far superior to any other make of tyre which I have ever tried.

Yours truly, W. H. WHITE.



			3-Ply.		Tubes.
26 x 2	..	..	33/-	..	8/6
26 x 2½	..	..	34/6	..	9/6
26 x 2½	..	..	36/-	..	10/6

Carriage Paid.

Less 10% Cash with Order.

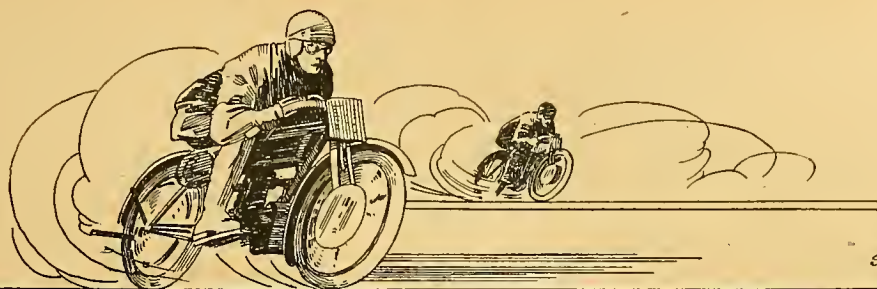
**THE BURNETT MOTOR TYRE CO.,  
MELKSHAM, WILTS.**

Tel. : 33, Melksham.

Tel. Address : "VACUUM, MELKSHAM."



# QUESTIONS & REPLIES



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Port Talbot to Woolwich.

**?** Kindly give me the best route and mileage from Port Talbot (Glamorgan) to the East End of London, avoiding as much traffic as possible. What time should it take?—M.R.

Your best route would be as follows: Port Talbot, Bridgend, Cowbridge, Cardiff, Newport, Severn Tunnel Junction, by train to Pilning, then through Chipping Sodbury, Chippenham, Devizes, Upavon, Andover, Whitechurch, Basingstoke, Odiham, Farnham, Hog's Back, Guildford, Shere, Dorking, Reigate, Redhill, Westerham, Hayes, Bromley, Bellingham, Lewisham, Blackheath, Greenwich, ferry to Woolwich, whence you can reach almost any part of the East End of London. This would be better than driving through the whole of London from west to east, as you would have to do by any other route, and it avoids the traffic as far as possible. The distance is approximately 230 miles. We cannot tell you how long it will take, as this depends upon how fast you intend to drive.

## Single Gear Tricar.

**?** I am using a  $3\frac{1}{2}$  h.p. tricar, with two coach-built seats, wheel steering, chain drive, free engine, leather-to-metal foot clutch, single gear, weight about 3 cwt. I have fitted a B. and B. carburetter with No. 32 jet. Would you be good enough to inform me if this is the correct size jet, and, if not, if this is the reason I cannot get enough power to get up a hill with passenger, combined weight about 22-stones? Perhaps you can tell me what is wrong. Further, is it necessary for me to take out a revenue licence for the machine? I use it solely for business purposes, and have a plate bearing name and address, but as I sometimes require one of my travellers to accompany me, I am wondering if I am liable if I take him as passenger in the front seat.—F.W.M.

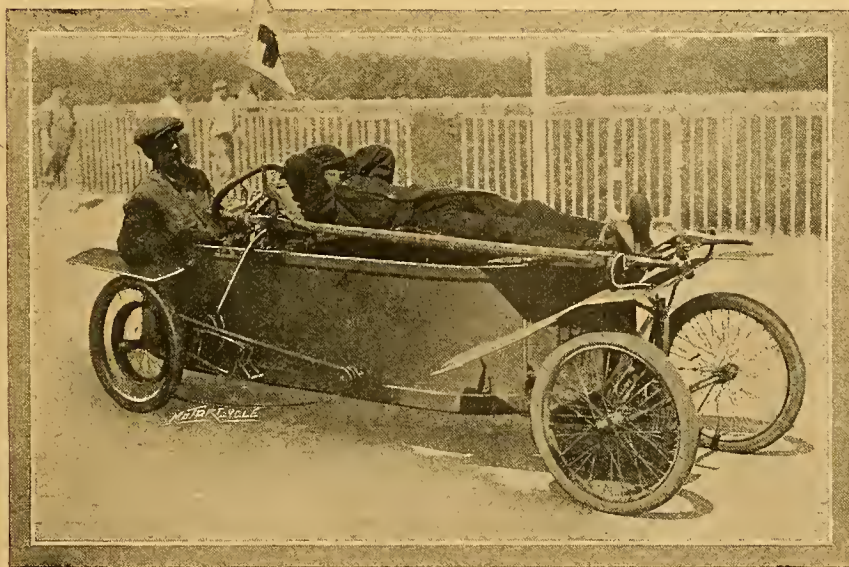
The size of your jet is about right. Provided that the engine is in good order, it is probably geared too highly. We are afraid you are liable for the revenue tax of £1. To be exempt a machine must be constructed in such a way that it can only be used for commercial purposes—i.e., you should have a box in front for the conveyance of goods, and not a seat.

## Magneto Timing.

**?** I ride an 8 h.p. 1912 Rex-Jap and sidcar (Service Co.) fitted with Roc two-speed gear. (1.) My yearly mileage is about 12,000 miles. After about what distance should the gears be overhauled? (2.) Am I right in assuming that the magneto is at its maximum when the gap between the armature and the pole piece is six millimetres? (3.) With B. and B. carburetter, what is the best size of jet for this combination; top gear, 4 to 1; also what size choke tube? (4.) What is the greatest mileage per gallon to be expected under most favourable conditions? I get 50 m.p.g. (5.) What is the best setting of the magneto for touring with this combination? When the machine arrived from the makers the timing was as follows: With the spark lever fully advanced, the platinum points broke when the piston was in down the firing stroke. The machine would not take more than half throttle unless air was cut off altogether, and I consequently blamed the carburetter, thinking it was starved, and could not get rid of the trouble until I took down the engine after 1,000 miles. The state

of the exhaust valves, the stems of which were burnt almost half through, at once caused me to look to the timing, when I discovered the state of affairs before mentioned. At present I have the magneto timed as follows: Piston on top of compression stroke, lever fully retarded, platinum points at breaking point. With this setting the engine is inclined to knock occasionally on picking up. (6.) Which of Price's and Vacuum oils is best for this machine in summer?—F.G.T.

(1.) We should recommend you to have the gear examined at the end of 5,000 miles. As the gear is well made there should be no parts likely to require renewal, except the bearings. (2.) The gap between the end of the armature and the pole piece should be about 5 mm., and at that moment the platinum points should be about to break. If the gap be any wider the firing will take place earlier. (3.) The correct size jet and choke tube are best found by experiment. Try a .32 jet and .53 adapter. (4.) Fifty miles to the gallon would be about right. (5.) You have set your timing correctly. It was very far wrong before. (6.) Price's Huile de Luxe or Vacuum B.



The Red Cross Service in Paris. A Bedelia used for transporting an injured person from the suturys to one of the hospitals.



## Guildford to Bedford.



(1.) Would you kindly give me the route and distance from Guildford to Bedford? I am a pure novice, having only ridden for three weeks, but I wish to go this way at a future date with a 6 h.p. twin and sidecar. (2.) Are there any tricky hills (I have free engine and two-speed gear)? (3.) Can I avoid all towns with tramlines?—O.A.D.

(1.) Your best route would be as follows: Guildford, Chertsey, Staines, Windsor, Slough, Beaconsfield, Amersham, Chesham, Tring, Dunstable, Amptill, and Bedford. (2.) There are one or two tricky hills between Beaconsfield and Chesham. (3.) We do not think you will be troubled with tramlines on this route. The distance is approximately eighty miles.

## Climbing Birdlip.



I read in *The Motor Cycle* of May 2nd an account of the A.C.U. one day trial, and see that you talk of Birdlip Hill as a mere incident for a modern motor cycle. Would it not be possible to give approximately the gear ratios of the machines in these trials? It would give readers a better idea of a machine's capabilities. I took a trip to Gloucester one day recently in order to see what Birdlip was like. I rode a well-known  $3\frac{1}{2}$  h.p. 1912 clutch model, gear ratio  $4\frac{1}{2}$  to 1. My weight is 10 stones. The result was the machine conked out after about half a mile of climbing. I then lowered the gear to  $4\frac{1}{4}$  to 1, and went down to the foot of the hill and tried again. I managed to get up all right this time, but the engine knocked terribly after the last corner near the top. However, I managed to coax it to the top without using the clutch. Yet you say this hill is a mere slope! By the way, what was the normal gear of the Rover you rode? Do the riders reckon to climb these hills on an ordinary touring gear (referring to single-geared machines)?—D.C.

There were only two single gear machines in the A.C.U. trials, and we are unable to state their actual gears. It is an open secret that competitors in reliability trials gear slightly lower than for touring (probably about 5 to 1), though a very low gear cannot be used on account of petrol consumption and overheating. Competitors are not allowed to alter gear ratios during the trial. The normal gear on the  $3\frac{1}{2}$  h.p. Rover which we were riding was  $4\frac{3}{4}$  to 1. The machine was in full touring trim, and in addition to our own weight in overalls (about 11½ stones) was carrying a small box of luggage on the carrier. The hill was taken on the run without cooling the engine. We have climbed the hill on many modern machines and some ancient, but with the exception of lightweights have seldom geared below 5 to 1. N.B.—W. B. Gibb ( $2\frac{3}{4}$  h.p. Douglas) very nearly reached the summit on top gear.

## Ipswich to London, W.



Kindly inform me of the best route from Ipswich to the West End (Queen's Gate). I have no objection to a circuit to avoid traffic.—G.C.P.

Your route will be as follows: Colchester, Witham, Chelmsford, Chipping Ongar, Epping, to Woodford. At the end of Woodford take the right hand fork and go straight on until you come to Walthamstow (ten-mile limit). Here take the first on the left and second on the right, where you enter the main road to Ware. Turn to the left and take the road leading under the G.E. Railway bridge marked "Seven Sisters Road Station; frequent services of trains to London, etc." Continue straight on till you meet some tramlines with central standards. Here turn right for about fifty yards, and left immediately afterwards. Follow the tramlines with overhead wires to the foot of Muswell Hill. Climb Muswell Hill, and continue straight on until you come into the Great North Road. Here turn left, and take the first turning on the right marked "Private Road," at the end of which turn to the right and you will find yourself on the top of Hampstead Heath. At the

pond turn left, when you enter the ten-mile limit, and descend Fitzjohn's Avenue. At the bottom bear slightly to the right, and go down the wood paving until you come to a public house (Eyre Arms) on the right-hand side, near which there is a public hall. Follow this road round to the left, and then go straight down Grove End Road, on into Lisson Grove, turn right at Marylebone Road, and make your way into Oxford and Cambridge Terrace, take the second on the left, second on the right, and second on the left again. This will bring you into Lancaster Gate, opposite Victoria Gate. Go straight across Hyde Park, coming out at Alexandra Gate, whence you will find Queen's Gate the most important turning on the left.

## Eyeglasses in Wet Weather.



I should much appreciate your advice as to the best method of overcoming the difficulty of riding in heavy rain and being compelled to wear eyeglasses? I have a pair of goggles which fit over my glasses, but the glasses in the former get so wet that I cannot see through them, and I have to stop repeatedly to wipe the glasses dry. I shall be glad of your help.—F.B.

Probably the best thing to do is to rub the glove over the glasses so as to smear the rain and prevent it forming in drops. The trouble may be reduced slightly by wiping the glasses of the goggles or spectacles with a mixture of glycerine and water. This, again, prevents the rain forming in drops.

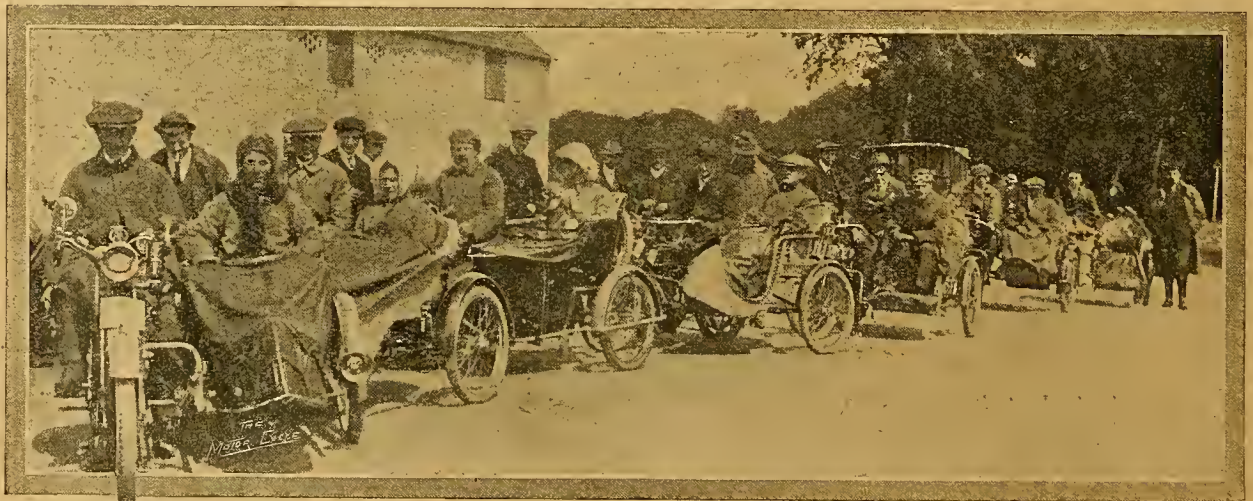
## EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"G.W.E.C." (Wallasey).—4 h.p. 1912 Rex.

"J.D.D." (Cornwall).—6 h.p. Enfield sidecar for use in a hilly country.

"F.N.Z.A.A." (Wellington, N.Z.).—7 h.p. four-cylinder T.M.C. with and without sidecar. Reliability and suitability for rough work.



## THE POPULAR SIDECAR.

The above group was photographed in the Stockport M.C.C. Reliability Run on the 23rd ult., and shows some of the competing sidecarists at Monk's Heath—the second control. Matchless and Clyno outfits are conspicuous.



# CHANGE SPEED GEARS.

## A SELECTIVE CLUTCH GEAR.

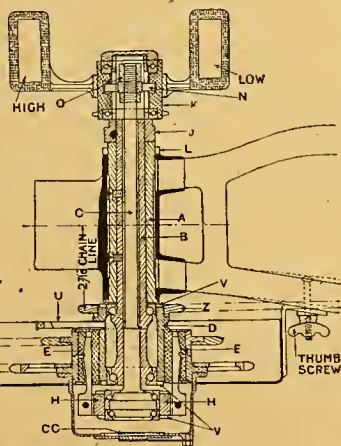
**W**E have before us the working drawings of a new bottom bracket gear, the design of which is particularly sound, and which has already given excellent results on the road. This is to be marketed in a form which will fit almost any modern motor cycle, and will suit any Triumph machine made since 1906 without structural alteration.

The engine-shaft is fitted with two chain sprockets mounted on an extension of the shaft, and held thereon by means of a split spring washer and lock nuts, no keys being employed. A distance piece between the sprocket is chamfered out and drilled for lubrication, thus allowing for a certain amount of slip to absorb the harshness of the drive. The third sprocket shown is mounted on a free wheel and connected to a kick or handle starter as desired.

### Counter-shaft Mechanism.

The counter-shaft gear mechanism is mounted on a shell which is eccentrically bored, and passing through which is the main inner hollow-shaft. Through this hollow-shaft runs a push rod, which may be given a lateral motion by the movement of a double pedal to which it is connected by means of a pin working in a helical slot. At the end of the push rod remote from the pedal is carried a cross head mounted on two ball bearings, and to which are attached two thrust plates having inclined surfaces machined on them to correspond with

- A. Eccentric shell.
- B. Inner hollow shaft.
- C. Push rod with ball-races.
- D. Shell carrying main bearings.
- E. Expanding gunmetal drums.
- H. Outer case carrying push rod bearings and thrust plates.
- J. Socket carrying worm box.
- K. Worm box.
- L. Locking ring.
- N. Crosshead.
- O. Thrust nuts [sprocket.
- P. Kick or handle starting.
- U. Lubricating tube main bearing.
- V. Locking nuts.
- Z. Main driving sprocket screwed to shell D.
- CC. End cap with loose cover enclosing push rod mechanism.



Sectional sketch of the Rigby two-speed gear.

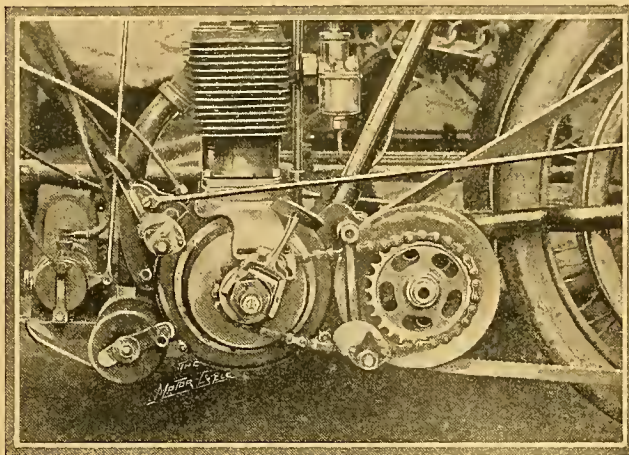
similar faces on the inside of the clutch drums. The main shell is carried on ball bearings and immediately outside it lie two phosphor bronze clutch drums. These drums are split in two places on their periphery, and when not expanded form bearings for a pair of large chain sprockets mounted upon them.

### Pedal Control.

A backward motion of the pedal, before mentioned, causes the thrust plates to expand the outer of the two clutch drums, and thus lock the high gear sprocket to the main shell, leaving the low gear sprocket free, and in a similar way a forward movement of the pedal engages the high gear. The final drive is by chain from a sprocket mounted on the main shell to the rear wheel. All the ball races are adjustable, the working parts are enclosed in a dustproof cover and a sensible chain cover is fitted to the forward chains. This gear is made on the selective clutch principle, which gives a direct drive on both the high and low speeds, the only additional friction being the idly running chain and sprocket wheel.

A feature of the gear is that the clutch drums are so designed as to give the maximum possible amount of gripping surface, this being the reason why they are split in two places instead of one as is usual. This gear is not an experiment, for it has been tested for some thousands of miles on two big twin-cylinder machines, in each case with a sidecar attached. The manufacturer of the gear is Mr. E. J. Rigby, Prescott Road, St. Helens, who should find a big future for it.

## THREE-SPEED COUNTER-SHAFT GEAR.



Three-speed counter-shaft gear fitted to a 3 1/2 h.p. New Comet-Precision.

The annexed illustration is of a new three-speed counter-shaft gear with clutch made by Mr. A. H. Haden, Princip Street, Birmingham, maker of the New Comet motor cycles. The chief point in this gear is its adaptability to a standard frame with 3 1/2 Precision engine, for which it has been specially designed. The total weight of the gear, with the controlling mechanism, is 23 lbs., and if the pedalling gear usually fitted be deducted the net additional weight is only 11 lbs.

## THE SIX DAYS' TRIALS.

### Slight Alterations to the Published Routes.

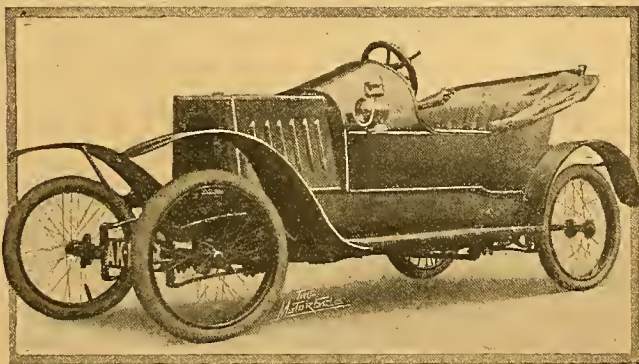
Mr. T. W. Loughborough informs us that several alternative portions will be included in the daily runs.

The homeward journey, after Lynmouth, on the second day (Tuesday), will probably be *via* Parracombe, Blackmoor Gate, South Molton, and Tiverton, to Exeter (Inch). Then either Sidford or Salcombe hills, Lyme Regis, Bridport, Beaminster, Crewkerne, Chard, and Combe St. Nicholas.

On the fifth day the hilly country around Wotton-under-Edge and Dursley will be traversed.

On the Saturday the alternative route will be followed Chard will be gained by the hilly road *via* Castle Neroche.

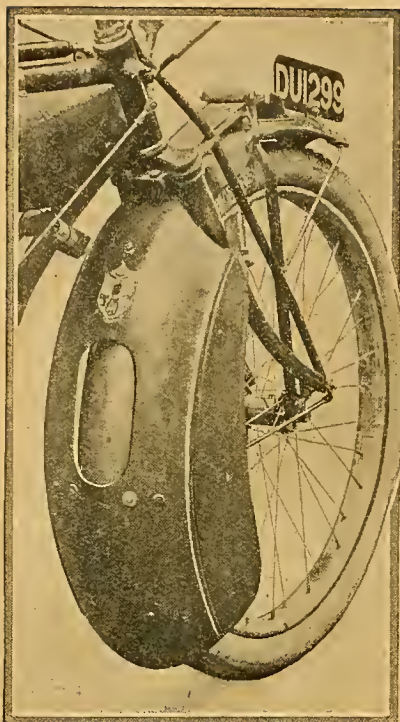
The second slow climb will be on Winyard's Gap, just beyond Crewkerne, on the Dorchester road.



### ANOTHER NEW CYCLECAR.

A new design four-wheeler which is being made by E. Gilyard & Co., Barkerend Road, Bradford. The power is supplied by an 8 h.p. Chater Lea engine, through ball-bearing gear box of the same make, and thence transmitted to the rear wheel by chains. The frame is made of steel tubing, and is sprung both fore and aft. The car is said to be particularly steady at high speeds, and as it is light (4 to 5 cwt.) it climbs the average hill with ease.





The Auto-Aero mudshield fitted to the front wheel of a 7 h.p. Indian. The arrangement of the centre panel allows air to pass but not mud.

#### Brooklands Successes.

At the B.A.R.C. meeting on the 15th ult., out of the twelve events, Pratt's Perfection motor spirit succeeded in securing six firsts and nine second places.

#### Trade Note.

Messrs. Mackenzie and Co., Bath Passage, Birmingham, who are makers of sidecar bodies of all kinds, will be pleased to forward illustrated particulars of their various patterns to manufacturers who are interested.

#### Sidecar Improvements.

The manufacturers of the Turner sidecar, J. H. Griffin and Co., Minorities Chambers, Minorities, Birmingham, have recently made some great improvements in the latest type, particulars of which they will be pleased to supply on application.

#### Instruction in Driving.

The London School of Motoring, Ltd., Tudor Place, 19a, Tottenham Court Road, W.C., is the first motor school of which we have heard where instruction is given in the art of driving a motor cycle. There is no doubt that the London School of Motoring will supply a long-felt want.

#### Delays in Delivery.

Readers who have Douglas machines on order will be interested to hear that the makers now expect to receive large deliveries of magnetos, which will enable them to send out numbers of machines which have been waiting for several weeks for these necessary adjuncts to the power unit.

## SPARKLETS



#### Trade Note.

Messrs. Herbert Terry and Sons, the well-known spring manufacturers, of Redditch, have started on an extension of their premises.

#### "Territorial Monthly."

No. 1 of *The Territorial Monthly* (2d.), the official organ of the Legion of Motor Cyclists, was published last week. It can be obtained through newsagents and bookstalls.

#### Tyre Repairs.

The Continental Tyre and Rubber Co., Thurloe Place, London, S.W., have a finely equipped repair works at Willesden, where is a staff of specialists in tyre repair and a plant specially laid down for this work only.

#### Addresses Wanted.

The number of people who send enquiries and repairs to various firms and omit to give addresses is astonishing. The North British Rubber Co. (Clincher tyres) have received a tube for repairs from Southwold (Suffolk), and a Mr. R. G. Setter, Camberwell, has sent an enquiry to the Leicester Rubber Co., both without sufficient address. If this attracts their notice will they communicate with the firms in question?

#### Petrol Consumption.

The Nubric Co., Spring Bank, Wigan, are selling locally a soluble powder which they have named Petropel. It is claimed for this that there is a saving of twenty per cent. on the petrol account. One experimentalist in the district asserts that he obtained ten minutes' extra running out of a gill of petrol in a test recently made with a fixed engine.

#### Change of Address.

Messrs. Pirelli, Ltd., have removed from 45, Basinghall Street, to 144, Queen Victoria Street, E.C.

#### Counter-shaft Two-speed Gear.

The G.H. is the name of a bottom bracket counter-shaft gear which embodies handle starting, chain transmission, and a friction clutch. It is being fitted to the  $3\frac{1}{2}$  h.p. Wulfruna motor cycle. This gear is specially adapted for sidecar work. The makers, the Wulfruna Engineering Co., Wolverhampton, also supply the gear separately if desired.

#### Catalogues Received.

The latest list of Rich detachable air tubes shows a considerable reduction in prices.

John Piggott, Ltd., 117, Cheapside, E.C., have just issued a new general list which includes all accessories and clothing for motor cyclists.

The latest price list of Michelin motor cycle tyres also gives particulars of the Michelin butt-ended inner tube and the various covers for which this firm is so highly reputed.

The Crown Mfg. Co., Small Heath, Birmingham, issue a catalogue entitled "What Every Motor Cyclist Should Know." The third edition is just to hand and contains illustrations and descriptions of this firm's Monarch tyres and Crown rubber belting. Geo. Brongh made use of one of these belts in the London-Edinburgh Run.

A well-illustrated leaflet of the Mead-Flyer is just to hand. This machine is marketed by the Mead Cycle Co., 11-13, Paradise Street, Liverpool, and is supplied in  $2\frac{1}{2}$  h.p.,  $3\frac{1}{2}$  h.p., and  $4\frac{1}{2}$  h.p. models with and without free engine hub.

All motor cyclists requiring spare parts or accessories will be well advised to get a copy of the very comprehensive catalogue issued by Messrs. Brown Bros., Ltd., Newman Street, Oxford Street, W. This catalogue contains practically everything that is likely to be required by motorists or motor cyclists.



A group of tourists in Germany. From left to right they are—H. Rossner ( $3\frac{1}{2}$  hp. Scott), R. Rude (6 h.p. N.S.U.), Mrs. C. H. Rossner ( $3\frac{1}{2}$  h.p. Scott), and C. H. Rossner (7 h.p. Indian). The machines are shod with Palmer and Kempshall tyres.



# JOHN PIGGOTT'S LTD.



Fawn and  
Green Shades  
of  
Drill (heavily  
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## DUST JACKETS

Double-breasted,  
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## SEATLESS GAITER TROUSERS.

Spat Fronts and  
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Ditto Leggings.. 7/4 pair

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## LEATHER UNDER- COAT.

to be worn under an  
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The Jacket is fitted with a  
wind-flap, which entirely ex-  
cludes all cold winds. When  
not in use can be folded up  
into small compass and carried  
on the machine.

Made in Tan Leather

Usual Price

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UNDER-COAT.

117-118, CHEAPSIDE & MILK ST., LONDON, E.C.

## FOR SALE!

1912 3½ T.T. TRIUMPH, silver  
finish, as new, £42 10s. nett.

1912 6 h.p. ZENITH, with £18 18s.  
Gloria Sidecar, splendid set of  
Goldenlite Lamps. The best  
Sidecar Machine on the road,  
£65 nett. A Bargain.

1912 Single-speed DOUGLAS, as  
new, £35

1912 Free-engine BRADBURY, as  
new, £45

1912 Single-speed MOTO-REVE,  
3 h.p., as new, £27 10s.

THESE MACHINES ARE PERFECT.

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TELEGRAMS: "Tone, Caterham Valley."  
PHONE: 100, Caterham Valley.

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EASIEST OF EASY TERMS.

Interest Charge from 2 per cent  
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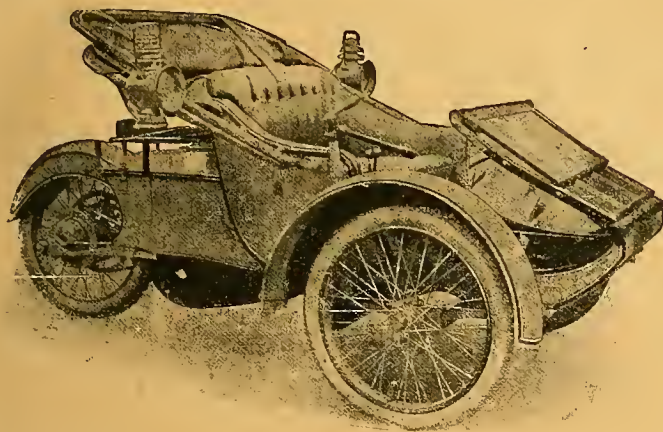
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LONDON TO EDINBURGH . . . 3 GOLD MEDALS.Owing to completion of extensions—IMMEDIATE DELIVERY OF 4½ h.p. MODELS.**CASS'S MOTOR MART,  
5, WARREN STREET,  
LONDON, W.****HARRODS LTD.,  
BROMPTON ROAD,  
LONDON, S.W.****"QUADRANT," Lawley Street, BIRMINGHAM.**



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**The 6 H.P. "A.C."**

SINGLE CYLINDER (723 c.c.) WAS STARTED  
**SCRATCH** WITH A

**10 h.p.** TWO-CYLINDER CYCL  
CAR (1070 c.c.) **AND WAS ONLY**  
**BEATEN BY A FEW SECONDS.**  
SPEED NEARLY 47 MILES PER HOUR

**NOTE.** THE SAME "A.C." MACHINE  
UNALTERED IN ANY WAY CLIMBED THE  
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BOTH BEFORE AND IMMEDIATELY  
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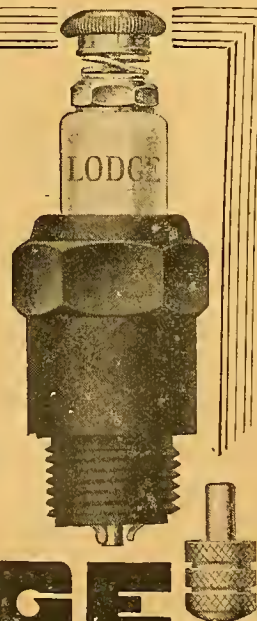
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Obtainable everywhere. Price 4/-  
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**95 GUINEAS, ready for the Road.****SATISFIED CUSTOMERS.**

20/3/12. "The Rollo is running extremely well—in fact, far better than I anticipated. She holds the road perfectly."

18/4/12. "I like the Rollo very much, and wish you every success."

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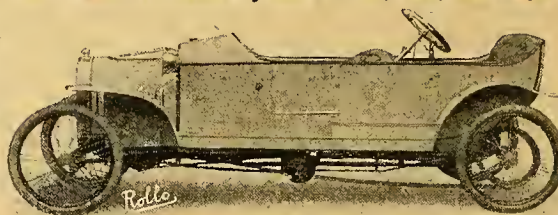
8/5/12. "I have now done about 500 miles on the car, and am very pleased with it. The car easily does 35 m.p.h., although I have not tried it all out. It also climbs very well. Everybody I meet is much interested, and I should think you would have plenty of sales here."

17/5/12. "The car runs all day like a clock."

17/5/12. "I am still getting satisfaction out of my car. I hope you are getting plenty of orders."

AND MANY OTHERS.

**THE RELIABLE ROLLO.**  
The Premier 4-wheeled Cyclecar. Fast, Safe, and Simple.

**100 GUINEAS, with Windscreen and Hood.****SATISFIED CUSTOMERS.**

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Catalogues and full particulars from The ROLLO CAR Co., Ltd., Conybere St., Birmingham (Eng.)

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### "MOTOR CYCLES AND HOW TO MANAGE THEM."

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**Economical. Puncture-proof.  
Light. Rigid. Good. Cheap.  
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Best English Chrome Leather, impervious to wet. Fitted with Steel Studs that will not pull out. Attached to tyre by means of clips which clinch the rim. You can fit it yourself.

# LOMAX

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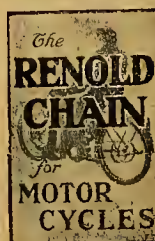
**Try one over that old tyre of yours.**

Accept no imitations. Get our list from  
**The Lomax Tyre Company**  
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on your Motor Cycle means "no roadside stoppages for Transmission trouble."

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**RIMS FOR MOTOR CYCLES, MOTOR CARS,  
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BELT RIMS.**

Prompt deliveries of standard sizes.  
Special sizes and sections to order.

WRITE FOR QUOTATIONS.

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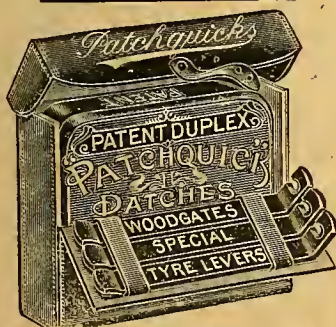
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CARRY YOUR OUTFIT IN THE  
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These Outfit Wallets, made specially to hold the world-renowned three shilling "Patchquick" Outfit, have created a furore in motor cycling circles. They are provided with strong attachment straps.

Price, complete with tyre levers, 3/- each; without tyre levers, 2/6 each. Outfits, 3/- extra.

"One of the most useful and novel accessories which have been brought to our notice."—*The Motor Cycle*.

Miss E. L. C. Watson, in her daring and strenuous ride through South Africa by motor cycle, proves the super-excellence of "Patchquicks." On one occasion her tyre was punctured by the Karoo thorn illustrated below (half size), but a sure and permanent repair was quickly made by the application of a "Patchquick" Patent Patch. "Patchquick" was true to name," says Miss Watson in "Motor Cycling." "Incidentally I found that this repair outfit is a favourite here."

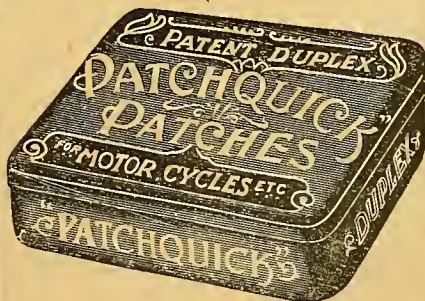


A photograph of the actual Karoo thorn which punctured Miss Watson's tyre, half life size. (Reproduced by courtesy of "Motor Cycling.")

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The celebrated No. 4 outfit, price 3/- each, known and appreciated from Equator to the Poles

This outfit is the most popular and efficient Repair Outfit on the market, tens of thousands being made and sold annually. It has broken all sale records the world over, proving itself as popular abroad as in the British Isles. Our long experience has resulted in the evolution of the perfect product.

"PATCHQUICK FIX" in tubes 6d. and 1/-; in screw top tins, 9d. Supplementary outfit 1/- ea

THE MOTOR CYCLISTS' VADE MECUM.

USED IN FIVE CONTINENTS! FIXED IN FIVE MINUTES!

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Price Complete with 12 Plugs

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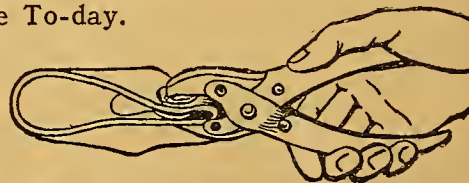
23, Store Street,  
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## Half-Time Puncture Repairs

—better and permanent, too—if you use a Parsons Rapid Repair Kit. instead of the old-fashioned, troublesome, patch-and-solution way. Isn't this a strong inducement why YOU—Mr. Motor Cyclist—should spend 15/- NOW on a PARSONS RAPID REPAIR KIT? No "waiting for patches to dry"; no uncertainty; no leaking; no mess—with the Parsons Way. You can be on the move again in a minute if you carry this little 7in. by 4in. Repair Kit. Get one To-day.

*See how  
it's done.*



E.H.G.

Anyone can pay  
cash for  
a motor cycle—  
but why  
should YOU?

Read it  
Again.

—when Pagets Plan enables you to purchase by monthly instalments—to enjoy the use of the machine whilst paying for it. Anything more easy or straightforward could not be imagined—just pay one-fifth down and the machine is yours. Send us the balance so much a month.

**Early Deliveries if Orders given now.**

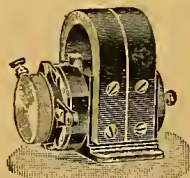
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**PAGETS  
PLAN**

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**1,459  
MILES  
IN A WEEK.**

The above remarkable record ride was accomplished by Mr. Arnold Butler, with a sidecar and passenger, on an "A.S.L." fitted with the

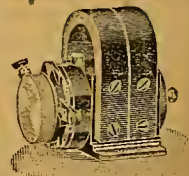
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MAGNETO.**

The U.H. Magneto is absolutely reliable, under all conditions. Extremely simple, having fewer working parts than any other.

*Booklet containing full particulars post free.*

**S. WOLF & CO.,**  
115, Southwark St., London, S.E.

'Grams: "Widerstand, London,"  
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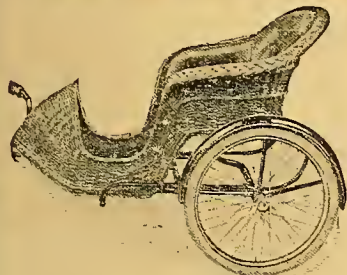
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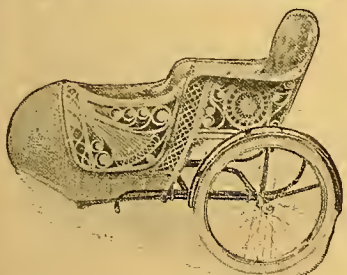
# CORONET SIDE CARS

Are made in a factory equipped with special machinery for turning out high-class sidecars only. Our illustrated catalogue will be sent post free, showing clearly the many refinements and improvements only to be found in the "CORONET."

CAN BE OBTAINED FROM ALL DEALERS.

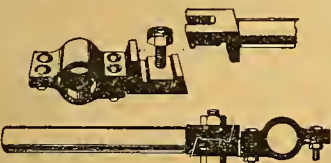


Model 1. High-class Canoe-front Body, Cranked Axle, and other improvements, £6 6 0.



Model 4. Ornamental Cane Body, as illustration, or Close Reed Cane Body, £8 8s.

CORONET DETACHABLE JOINTS enable our sidecars to be detached in one minute.



We illustrate herewith the "Coronet" Quick-detachable joints, which are fitted to all our models. To detach is simply a matter of unscrewing nut about five threads. When attached, and nut screwed tight, the joint is solid and perfectly rigid, and does not rattle like some patent joints held in position by springs and pins that are liable to shake loose.

## MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from 5/6. Your old coil and acc. taken in exchange.

### 25/- ALLOWED

for your B. & B. or Amac Carburetter if fitted with H.B. control in exchange for a new 1912 SENSAPRAY or BINKS.

## MOTOR BICYCLES FOR SALE.

- 1911 Royal Enfield, 2-speed, free engine, in splendid condition; £34/10.—Atkinson, Nelson. [X4598]
- 1910 Scott, in good running order, spares, etc.; £32.—Atkinson, Nelson. [X4599]
- 3 h.p. Clyde, accumulator ignition, running order; £6, no offers.—Atkinson, Nelson. [X4600]
- ROVER, 1912, 3-speed model, only ridden 600 miles; £45.—George Duckett, Brantwood, Burnley. [X4547]
- 1911 5 h.p. Rex de Luxe, new tyres, Whittle belt; £40.—Beesley, Charlestown R.L., Blackley. [X4849]
- HUMBER, chain drive, 2-speed, mag., h.b.c., take sidecar; £13.—2, Waverley Rd., Bradford. [X4621]
- REX, 3 1/2 h.p., 1911, August, little ridden, perfect; 30 gns., lowest.—Reed, 6, Blake St., Crk. [X4677]
- 1912 B.S.A., standard, done about 500 miles, as new; £39.—103, Waterloo Terrace, Ashton, Pictoria. [X4777]
- 3 1/2 h.p. Bradbury, 1911, perfect, £30; wanted, 1911 2 1/2 h.p. Triumph, standard.—Wood, Manor Rd., Oldham. [X4788]
- 2 1/2 h.p. F.N., mag., h.b.c., splendid condition; £14.—Knox, 141, Marsh House Lane, Warrington. [X4841]
- N.S.U., 1909, 5 1/2 h.p. H.T. mag., first-class order; £15 cash.—Motor Exchange, 32, Downing St., Manchester. [X4811]
- 1911 Bradbury, 3 1/2 h.p., free engine model, perfect condition; £34 cash.—Thomas Byrom, 50, Albion St., Leeds. [X4650]
- 1911 Humber, 3 h.p., 2-speed model, good condition; £34 cash.—Thomas Byrom, 50, Albion St., Leeds. [X4651]
- 1910 Premier, 3 1/2 h.p., single gear, speedometer, lamp, horn, complete; £27 cash.—Thomas Byrom, 50, Albion St., Leeds. [X4652]
- 1912 5 1/2 h.p. Clyno, 2-speed gear, chain drive, nearly new; £54 cash.—Thomas Byrom, 50, Albion St., Leeds. [X4654]
- RUDGE Multi, not done 100 miles, guaranteed perfect; £50.—Craig, 25, Hollinshead St., Chorley, Lancs. [X4793]
- TRIUMPH, 3 1/2 h.p., 1908, perfect condition, just re-bushed and re-bored, new belt, perfect; £25.—Below.
- TRIUMPH, 3 1/2 h.p., 1911, T.T., good condition, very fast; bargain, £30.—Below.
- TRIUMPH, 3 h.p., 1906, just overhauled, new B. and B. carburetter, new tyre; £18.—Below.
- LINCOLN-ELK, 1908, Millennium 2-speed gear, good running order; £15.—Below.
- RUDGE, 1912, clutch model, perfect condition, only done 1,200 miles, new tyre and belt; £47/10.—Talbot Garage, Ltd., Mersey Sq., Stockport. [1738]
- 3 1/2 h.p. Fafair, mag., m.o.v., h.b.c., in splendid condition; £14/10, or offers.—39, Raikes Parade, Blackpool. [1726]
- 1911 B.S.A., standard, new August, perfect condition; £36, bargain.—N. V. Sellers, Overdale, Keighley. [1727]
- REX, 1909, 3 1/2 h.p., magnificent condition, runs like new; a bargain.—W. 175, North Rd., Clayton, Manchester. [X4021]
- 1912 Rudge, standard, new April, scarcely used, as new, all tools, lamp, horn, etc.; £40.—Timberlake, Wigan. [X4707]
- TRIUMPH, very late 1911, standard, new Christmas, as new, not ridden 800 miles; accept £39.—Timberlake, Wigan. [X4708]
- PREMIER, late 1910, 3 1/2 h.p., standard model, excellent condition, very little used, splendid order, fast; £26.—Timberlake, Wigan. [X4709]
- TRIUMPH T.T. Roadster, late 1911, specially tuned for competitions, adjustable footrests, 1912 spring forks, hardly soiled, been ridden by expert, complete with tools, horn, knee grips, etc.; £40.—Timberlake, Wigan. [X4710]
- TRIUMPHS, several 1908 and 1909 models, to be cleared, all in good order and condition, from £20.—Timberlake, Wigan. [X4706]
- 1911 Singer, 3 1/2 h.p., free engine, with torpedo sidecar, Lucas lamp; £45, or nearest offer.—1, Hart St., Southport. [X4531]
- QUADRANT Motor Cycle, 3 1/2 h.p., new cylinder, new accumulator; £27.—72, New Hey Rd., Lindley, Huddersfield. [X4810]
- 2 h.p. Lightweight, 90 lbs., Amac, Bosch, Druids, perfect; any trial; accessories.—15, Berkley Av., Levenshulme. [1856]
- MERRICK for Bradbury, Chater-Lea, Rudge, A.J.S., Matchless, etc.—Merrick's Stores, Listerhills, Bradford. Phone: 2439. [0038]
- DOUGLAS, 1910, condition excellent, new back tyre, accessories, spares; trial; £25.—Rodgers, Newstead, Rotherham. [X4637]
- 1912 Rudge Multi, 3 1/2 h.p., new, never been ridden, £55 for quick sale; good reason for selling.—Reed, 6, Blake St., York. [X4627]
- GENUINE Bargain.—1912 3 1/2 h.p. torpedo Precision new April, lamp, generator, horn, speedometer sacrifice £38/10.—Mynekym, Gidlow Lane, Wigan. [X392]

# GOING ! GOING ! !

The opportunity to secure a Brand New 1912 3 1/2 h.p. PREMIER at a reduction of £11 will soon be gone. Only a few remain unsold.

LIST PRICE, £47 10.

OUR PRICE, £36 10.

Fitted with Sturmey-Archer or Armstrong 3-speed gears, £10 extra.

Finest Sidecar Machine made.

CLYNO, 1912, only run 200	£63 10
HUMBER, 1911, 3 1/2 h.p., two speeds, handle starting, and Millford sidecar	£40 0
PREMIER, 3 1/2 h.p., 1911 model	£30 0
N.S.U., 3 1/2 h.p., magneto, h.-b. control, spring forks, 2-speed gear	£17 10
N.S.U., 3 1/2 h.p., 1908, magneto, 26in. wheels	£13 10
REX, 3 1/2 h.p., 1908, spring forks, magneto	£16 10
Twin DOT, 5-7 h.p., 2 speeds, 1910	£35 0
CLYNO—New 1912 model in stock	£68 5
4 1/2 h.p. PRECISION, Millennium 2-speed hub, 1912 mo tel, only run 300 miles	£42 0
REX DE LUXE, 5 h.p. twin, 1911 M.O.V., with £12 12s. Rex sidecar	£47 10
REX 3 1/2 h.p., vertical engine, magneto	£8 10
TRIUMPH, 1909, 2 speeds	£33 10
N.S.U., 3 1/2 h.p., 1909, 2-speed gear	£23 10
SAROLEA 5 h.p. Tricar, P. & M. gear	£10 10
ENFIELD Lightweight, 1910	£18 10
QUADRANT, 3 1/2 h.p., magneto, spring forks	£16 10
N.S.U., 3 1/2 h.p. M.O.V., magneto	£15 10
DARRACQ 9 h.p. 2-seater Car, 3 speeds and reverse	£15 10
HOBART, 3 h.p., vertical engine, low	£8 10
PREMIER, 1912, 3-speed, only run 300 miles	£43 10
QUADRANT, 3 h.p., vertical engine	£5 10
HUMBER Tricar, open frame, wheel steering, water-cooled	£15 0
ANTOINE, 3 1/2 h.p., vertical engine, h.b. control, spring forks	£8 10

PUSH CYCLES TAKEN IN EXCHANGE.

## ENGINES.

3 1/2 h.p. M.M.C., silencer, magneto, M.O.V.	£8 10
3 1/2 h.p. EXCELSIOR, with Mabon free engine	£3 10
2 1/2 h.p. MINERVA, M.O.V., pulley	£3 0
4 1/2 h.p. GARRARD, water-cooled, clutch	£4 10
2 1/2 h.p. WERNER, 30/-	1 1/2 h.p. MINERVA, 23/6

## GREAT CLEARANCE LINE.

Heavy Rubber-studded Covers	15/-
26 x 2 1/2 Best Butted Tubes	6/11
24 x 2 and 2 1/2 Beaded Clipper Covers, new	8/6
New Lycett Rubber Belt, 7ft. 6in., 7in.	11/6

## 4 1/2 h.p. PRECISION ENGINES.

We will make a good allowance for your old engine in part payment for one of the above up-to-date powerful engines.

## NEW 1912 MILLENNIUM 2-SPEED HUBS.

We can supply from stock a limited number of these well-known gears at the special price of £6 17s. 6d.

## MISCELLANEOUS.

XL All Spring Forks	9/6
Nearly new 1912 Bensapray	23/6
Bradbury pattern Handle-bars	6/-
Lowen Sidecar, cost £14	5/-
Longueville, Minerva, F.N. Carburetters	4/6
Long Handle-bars, dropped ends	5/6 and 6/6
Coronet Silencers, up to 5 h.p.	3/3 and 4/3
Gripskin Belting: 1in. 10d., 1 1/2in. 11d., 1 3/4in. 12d.	1/-
Wide Mudguards, 4in.	2/11
B. & B. and Amac, h.-b. control	13/6
New Amac Carb., h.-b. control	20/-
Montgomery Sidecar, 10 guinea model	£3 10
Mills-Fulford Sidecar	£3 15
Tabular Carriers, with drop ends	4/6
New Mirror Lens Lamp with generator	12/-
Sidecar Lamps, show red behind	6/9

# Booth's Motories,

Keighley Mills, Bedford Street North, Halifax.  
Tel. 1062.



## EXPERT ADVICE FREE.

Don't be afraid to ask questions. We're here to help you. All our men are expert and practical motor cyclists, and will willingly advise you as to the selection of a machine or in any other way. You will save time, worry, and money by buying through us. We buy keenly and sell keenly. Hence our success and ability to give advantages over others. Write or call at once.

### 1912 MODELS IN STOCK.

Clyno, 5-6 h.p., standard, 1912 model .....	£68 5
Chater-Lea, 8 h.p., No. 7, 3 speeds, 1912 model .....	£78 15
Premier, 3½ h.p., 3-speed model .....	£58 0
Ariel, 3½ h.p., T.T., 3 speed. Kerry-Abingdon, 3½ h.p., 2 speed .....	£59 17
Rex de Luxe, 6 h.p., 1912, 2 speed .....	£62 10
Rex Sidette, 6 h.p., complete combination ..	£75 0
Corah, 4 h.p., T.T. model. Our price .....	£40 0
Douglas, 2½ h.p., model K, 2 speeds .....	£50 0
Douglas, 2½ h.p., model G, standard .....	£41 0
Rudge, 3½ h.p., multi-sp. ..	£60 0
RUDGE, 3½ h.p., free eng. ..	£55 0
RUDGE, 3½ h.p., standard ..	£48 15
BAT, 1912, 6 h.p., 2 speed, chain drive (about 10 days) .....	£73 0
Morgan Runabout, 2-seater. Offers	

Deliveries within 3 weeks of A.C. Sociables.

SCOTTS.

HUMBER (3½ h.p., 2 speeds).

CLYNOS.

ENFIELD (6 h.p. combinations).

And almost all other models.

**THE SIDECAR  
SPECIALISTS.**

COMFORT AND STABILITY.



Best £6 6s. model made.



£7 7s. model. £8 8s. model.

Lower positions, Chater Lea hubs, 26x2½ in. Michelin tyres, flat type heavily plated rims, heavier fittings, stronger mudguards. Write—

**MAUDE'S MOTOR MART.**

**NOTE THE ADDRESS.**

## MOTOR BICYCLES FOR SALE.

**HUMBER, 1912, new, 2½ h.p., 3-speed, unused, just received; listed at £52/10; best offers.**—Wasing's City Garage, Blake St., York. [X4612]

**HUMBER, 1912, 2½ h.p., lady's, new, unused, just received; listed £40, best offers.**—Wasing's City Garage, Blake St., York. [X4613]

**PRESTON.**—In stock, 6 h.p. Zenith-Gradna, 3½ h.p. Alldays, Matchless 2-speed, twin Centaur lightweight, 3-speed; exchanges. [X4776]

**PRESTON.**—Anything for the motor cycle; we have it; in sidecars we defy competition.—The Motor Cycle House, 82a, Fishergate. [X4776]

**ROYAL Enfield, 1910; not done 2,000 miles, Dunlop; feeder trip, condition—excellent.**—Witham, Sandylands, Morecambe. [X4762]

**LIGHTWEIGHT Motor Cycle, 3½ h.p., Bosch mag., low, perfect order; £12.**—Motor Exchange, 32, Downing St., Manchester. [X4812]

**DOUGLAS, 1911, model D, 2-speed, excellent condition, mud screen, Rich horn, spares; £35.**—Daniel, Abbey Rd., Barrow. [X4741]

**1910 Fainir, 3½ h.p., Bosch mag., 26 in. wheels, studded tyres, h.p.c.; £18—111, Cottage Retreat, Manchester Rd., Huddersfield. [X4809]**

**1911-12 2½ h.p. Enfield, 2-speed, F.E., P. and H. lamp, generator, perfect condition throughout; £33/10—93, Wallgate, Wigan. [X3922]**

**1911 Standard Bradbury, brand new P. and H. lamp, generator, horn, belt, splendid condition; £37.**—Hough, Park Rd., Wigan. [X3923]

**1911 2-speed Humber, perfect, and only done 2,000, complete with Millford castor wheel came sidecar; £40—65, Hilden St., Bolton. [X4843]**

**1911 Premier, 3½ h.p., clutch model, whistle, all accessories, good condition; £40.**—Simmons, South Kirby Rd., Heansworth, Wakefield. [1695]

**TRIUMPH, 1908, excellent condition, not been ridden for last 12 months, previously overhauled; £25.**—43, Mossley Rd., Aston-under-Lyne. [1765]

**SCOTT, 1912, not unpacked, first £65 scotches; also P. and M., 1910, with Millford castor sidecar, £45.**—Horner, Kila St., Beeston Hill, Leeds. [1835]

**3 h.p. Humber, magneto, Palmer tyres, everything first class condition; any examination or trial; lowest price £9/15.**—Stansfield, Smithwell, Heptonstall. [X4850]

**SCOTT, 1910, 2-speed, free engine, thoroughly overhauled by makers, not ridden since; trial, appointment; bargain, £38.**—Miller, 5, Church Av., Selby. [X4576]

**LATE 1911 Free Engine Var. Gear Ariel, good sidecar machine, in perfect order; will ride 30 miles to customer.**—Kaye, 95, Corporation St., Manchester. [1914]

**J.A.P.-REX 5 h.p. Twin, side valves, fixed gear, almost new coach-built sidecar; £39/10 complete; exchange lightweight—2, Victoria Buildings, Fishergate, Preston. [X4778]**

**RUDGE, T.T., 1911, full roadster equipment, engine just back from makers, Dunlops, very fast, and in perfect order; £35.**—Midgley, Woodhead, Grange-over-Sands. [1912]

**3 h.p. Kelecom, Palmer tyres, 26x2½, new condition, long bars, low position, Whittle belt, in good running order; sacrifice £8.**—Rothwell, 7, Cowper Av., Clitheroe, Lancs. [1780]

**1911 Zenith, only ridden 1,100 miles, good condition, only one puncture in tubes, new Watawata, and spare valve, lamp, and horn; £46.**—Lawson, 46, North St., Scarborough. [1957]

**4 h.p. Twin, Chater, Druids, B. and B. variable, Bosch, Whittle, Michellins not done 200, too fast for owner; £35, or close offer.**—26, Darley Rd., Serron Grove, Manchester. [X4808]

**1911 6 h.p. N.S.U., 2-speed, free engine, Jones speedometer, Kempshall back, Continental front, excellent condition in every respect; £55.**—Witham, Sandylands, Morecambe. [X4761]

**1912 Hazlewood, 2½ h.p. J.A.P., Armstrong 3-speed gear, Corvey indicator, Rushmore lamp set, as new, £47; 3½ h.p. Rex de Luxe, perfect working order, good tyres; a bargain, £28.**—Everingham, Lockington. [X4626]

**TRIUMPH, late 1907, engine overhauled by makers, £51; 5 h.p. Rex, late 1908, equal new, £22; 3½ h.p. Rex, 1908, just overhauled, any trial, £20; many others; cash or exchange—Parker, Westbrook St., Bolton. Phone: 1348. [X4634]**

**SPECIAL Clearance Offer.**—New 1911 motor cycles, tourist and free engine, and 2-speed models, at reduced prices; easy payments from £10 deposit; balance in 12 monthly payments.—Halifax Motor Exchange, Westgate, Halifax. [2007]

**1912 New Clyno and Bradbury Motor Cycles; liberal exchanges made; delivery from stock.**—Colliers, Westgate, Halifax. [2008]

**LIVERPOOL.**—Deliveries from stock: 3½ h.p. Bradbury, new; 6 h.p. Zenith, new; 3½ h.p. Zenith, new; 4 h.p. Singer, 2 speeds, new; 2½ h.p. Singer, 2 speeds, new; 3½ h.p. Ariel, var. gear, new; 3 h.p. Ariel T.T., 3 speeds, new; 6 h.p. Rex T.T., new; 2 h.p. Alcyon, new.—F. C. Jones and Co., 3, Redcross St., Liverpool. [X3893]

**TRIUMPH, late 1909, free engine, in splendid condition, just overhauled, including sidecar, complete lamp, horn, tools, etc. £32/10; also motor cycle shed, £2/10, cost nearly double; giving up riding—435, West Derby Rd., Liverpool, or 81, Liscard Rd., Seacombe. [X4529]**

## BARGAINS WITH A BIG "B"

They really are bargains. Every single one. We are offering **SECOND-HAND** Motor Cycles now at unprecedented prices to clear. Look down the list below or send for the full S.H. List. First cheque secures. All guaranteed. All in good running order. No rubbish. See how we overhaul every one.

### All Machines Guaranteed.

A selection from our list of second-hands. All ready for immediate delivery. 5% extra only for deferred payments! 25% deposit and balance in twelve equal monthly payments.

Clyno, 5-6 h.p., 1912 model, used for trials .....	£62
Premier, 3½ h.p., 1912, 3-sp., used for trials .....	£47
Rex, 5 h.p., tourist model, spring forks .....	£18
Antoine, 5 h.p., low built, tourist model .....	£16
Roc, 4 h.p., 2 speeds, 1908 model .....	£20
F.N., 5-6 h.p., magneto, spring forks, good order .....	£27
F.N., 2½ h.p., 1910, lightweight, 2 speeds, mag. ....	£23
Chater, 5 h.p., Antoine engine, twin, magneto ....	£17
Scott, and Millford sidecar, water-cooled, 2 speeds. ....	£45
Rex, 5-6 h.p., de Luxe, new, 1911 model, unused .....	£50
Indian, 5 h.p., 1911, clutch, blue finish .....	£42
Douglas, 2½ h.p., 1911 model D, perfect order .....	£30
T.A.C., 8 h.p., 1910 model, 3 speeds, 4 cylinders .....	£44
Portland, 3½ h.p., 1911 model, carefully used .....	£28
Triumph, 3½ h.p., 1910 model, very fine order .....	£33
Moto-Reve, 2 h.p., 1910 model, twin, magneto .....	£22
F.N., 5-6 h.p., 1910 model, 4-cylinder, magneto .....	£29
Rex, 5 h.p., 1909, tourist, excellent order .....	£29
N.S.U., 5½ h.p., 1908, 2 speeds, low built .....	£24
Rex, 5 h.p., 1909 model, 2 speeds, perfect .....	£29
Rex 5-6 h.p., 1908 model, 2 speeds, very fast .....	£27
Rex, 5 h.p., 1908 model, free engine, magneto .....	£24
Douglas, 1910, 2½ h.p., good order, Druids .....	£24
Douglas; 1911, 2½ h.p., carefully used .....	£27
Bradbury, 1912, 3½ h.p., standard, as new .....	£37
Rex, 1911, 5 h.p., de Luxe, 2 speeds, magneto .....	£42
Scott, 2-stroke, twin, 2 speeds, magneto, Palmers .....	£25
Triumph, 3½ h.p., 1909 standard tourist model .....	£27
F.N., 4-cylinder, 4½ h.p., and sidecar, magneto .....	£23
Peugeot, 7 h.p., magneto, just overhauled .....	£24
Mineiva, 2 h.p., coil and acc., M.O.V., good tyres .....	£6

If none of the above appeal to you, write for our complete list of S.H. bargains.

**MAUDE'S  
MOTOR MART**  
(Popularly known as Maude's Money-Saving Mart),

136, St. Portland St., London W.  
Telephone—522 Mayfair,  
Telegrams—"Abdicate, London."

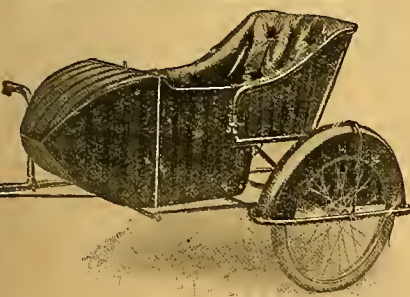
SEE OUR OTHER COLUMN.



# SCOTT'S, Powell St., HALIFAX.

ALL MACHINES ACTUALLY IN STOCK

- Two Multi Rudes in stock. First cheque secures. PRICE £60.
- RUDGE 2-speed and free-engine and adjustable pulley; engine starts with the back wheel on the ground ..... £56 10
- RUDGE free-engine model ..... £55 0
- RUDGE standard ..... £48 15
- RUDGE T.T. .... £48 15
- ROYAL ENFIELDS 1912, any model. .... £57 0
- NEW HUDSON 3-speed, 1912 ..... £57 0
- SCOTT, 1912, brand new, first cheque for £70 secures. .... £55 13
- ZENITH GRADUA ..... £50 0
- NEW HUDSON, 3-speed several improvements, not done 200 miles ..... £56 10
- PREMIER, 3½ h.p., 1912, 3 speeds and free engine, Sturmer-Archer gear, starts with wheel on the ground, brand new ..... £40 0
- REX, 3½ h.p., 2 speeds and free engine, 1912, with 1912 improvements ..... £32 10
- J.A.P., 1912, 4 h.p., with latest improvements ..... £22 10
- CENTAUR, 3½ h.p., chain drive, P. & M. 2-speed gear ..... £22 0
- N.S.U., 4½ h.p., 2-speed gear, free engine, Bosch magneto ignition, suitable for sidecar work ..... £38 0
- LINCOLN ELK, 1912, 3½ h.p., 2-speed gear, chain drive, kick starter, etc. .... £43 0
- RUDGE standard, 1912, 3½ h.p., not done 300 miles, like new ..... £42 0
- HUMBER, 3½ h.p., 2 speeds, and free engine, like new ..... £38 0
- P. and M., 3½ h.p., late 1909, complete with 9 guinea Miller sidecar; a beauty ..... £37 0
- REX, 1910, with 1911 improvements, 6 h.p., 2 speeds and free engine, not done 1,000 miles ..... £20 0
- REX, 1910, with 1911 improvements, 6 h.p., 2 speeds and free engine, complete with sidecar ..... £36 0
- REX, 5 h.p., 1908, complete with Roe 2-spe d gear and free engine, handle star ing, a bargain ..... £20 0
- TRIUMPH, 3½ h.p., like new, late 1910 ..... £20 0
- NEW HUDSON, 2½ h.p., J.A.P. engine, 1912, Armstrong 3-speed gear, not done 200 miles ..... £20 0
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- HUMBER, 1911, like new, complete ..... £38 0
- F.N., 5-6 h.p., fitted with new engine, 2-speed gear, and free engine; cost over £80; a bar a n ..... £32 0
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## MOTOR BICYCLES FOR SALE.

- HUMBER, 1911, 2-speed model, excellent condition; £35.—P. J. Evans, 358, Stratford Rd., Birmingham. [1715]
- LADY'S Hobart, 1911, 3-speed model, new condition; £32.—P. J. Evans, 358, Stratford Rd., Birmingham. [1716]
- DOUGLAS, 1912, 2-speed. £42; 1911 standard, £28; 1910 standard, £22.—P. J. Evans, Sparkhill, Birmingham. [1717]
- TRIUMPH, 1910, free engine, new belt, tyre, splendid condition; £35.—29, Lower Hastings St., Leicester. [X4739]
- 3½ h.p. Rex, in good working order, h.b.c., B. and B. carburettor; £10.—W. Harper, Callis, Ashby-de-la-Zouch. [X3916]
- SCOTT, 1910, recently overhauled, Palmers; trial; first reasonable offer accepted. — Vickers, Dunchurch. [X4732]
- 3½ h.p. Norton Twin, mag., B. and B., splendid condition; £16.—21, St. Thomas Rd., Edingston, Birmingham. [X4848]
- ROVER, free engine, 1912, not ridden 50 miles; best cash offer accepted.—Box 873, The Motor Cycle Offices, Coventry. [X4790]
- CONDOR, 3½ h.p., h.b.c., spring forks, mag., perfect running order; £25.—Greenwood, Park House, Easton, Stamford. [1773]
- 4 h.p. Antoine, Roe free engine, handle starting, Barlow, Bosch, lamps, horn, spares; bargain, £24.—54, Hill St., Coventry. [X4806]
- 3½ h.p. Humber, spring forks, seat-pillar, fast, powerful, take sidecar; trial here; bargain, £9.—Toms, 138, Catherine St., Leicester. [1701]
- ROVER, 1912, 3½ h.p. free engine, perfectly new, not ridden; write at once for clearance stock-taking price.—Sturges, Garage, Leicester. [X4818]
- ROVER, 1912, 3½ h.p. Armstrong Triplex 3-speed gear, quite new, ridden few miles; at stock-taking price; cannot repeat.—Sturges, Garage, Leicester. [X4819]
- HAZLEWOOD, 2½ h.p., 1912, free engine, 3 speeds, perfectly new; very special price before stock-taking.—Sturges, Garage, Leicester. [X4820]
- TRIUMPH, 1912, very little used, with horn, spare valve; trial allowed; £42/10, no offers.—McCutcheon, 36, Spencer Av., Coventry. [X4696]
- TRIUMPH, 1909, free engine model, 1911 piston, cyl. and clutch, all accessories; £32.—Teall, Jockey Rd., Sutton Coldfield, Birmingham. [X4033]
- 1911 T.T. Triumph, very fast machine; £38; reason for selling, owing getting new machine and sidecar.—Cyle, 25, Chester St., Coventry. [X4595]
- 2 h.p. Minerva, m.o.v., accumulator, new belt tyres, and tube, good condition; cheap; trial.—W. Moore, Station Rd., Quera, near Loughborough. [X4578]
- 1911 5 h.p. Rex de Luxe Motor Cycle and coach-built sidecar, done 2,000 miles; £52, or nearest offer; trial.—13, Bourneville Cottages, Bourneville. [X4540]
- HUMBER, 2 h.p., 1911, 2in. Palmer cord tyres, spare back wheel, with Michelin tyre, perfect condition; £25.—M., 35, St. Patrick's Rd., Coventry. [X4924]
- 1912 Campion, 4 h.p., free engine, Armstrong 3-speed, not been 50 miles, perfect; 48gns.; cash wanted.—Box 874, The Motor Cycle Offices, Coventry. [X4796]
- ALLDAYS, 1911, free engine, 2-speed, 3½ h.p., ridden very little, perfect condition, tyres unpunctured; £28/10, bargain.—32, Bath Row, Birmingham. [X4034]
- MULTI Speed Rudee in stock, ready for immediate delivery; also 6 h.p. Rex Sidette, neither machines unpacked.—Arthur Tarr, Gateford Rd., Worksop. [X4753]
- PRECISION, 2½ h.p. engine, only been used twice, practically new, Michelin tyres, mag., Druid forks; bargain, £29.—Brown's, 12, Bull Ring, Birmingham. [X4821]
- LIGHTWEIGHT Motor Cycle, 2 h.p. Stevens engine, mag. ignition, low built; £12/10.—Brown's, 12, Bull Ring, Birmingham. [X4822]
- MOTO-REVE, 2½ h.p. twin-cyl., mag., Druid spring forks, Michelin tyres; bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham. [X4823]
- J.A.P. Motor Cycle, 4 h.p., mag. ignition, var. gear, Dunlop tyres; bargain, £24.—Brown's, 12, Bull Ring, Birmingham. [X4824]
- REX, 1911 model, 3½ h.p., mag., free engine, handle starting, aluminium footboards, spring forks and seat, splendid order; bargain, £31.—Brown's, 12, Bull Ring, Birmingham. [X4825]
- TRIUMPH Motor Cycle, 3½ h.p., Dunlop tyres, mag., spring forks, Brooks saddle; bargain, £25/10.—Brown's, 12, Bull Ring, Birmingham. [X4826]
- BRADBURY, 1910, 3½ h.p., Dunlop tyres, Whittle belt, Druid spring forks; bargain, £28.—Brown's, 12, Bull Ring, Birmingham. [X4827]
- BRADBURY, 1910 model, 3½ h.p. free engine, Bosch mag., spring forks; bargain, £31; exchange entertained.—Brown's, 12, Bull Ring, Birmingham. [X4828]
- QUADRANT, 1910 model, 3½ h.p. free engine, Dunlops, first-class order; accept £25.—12, Bull Ring, Birmingham. [X4829]
- N.S.U., 2½ h.p., twin-cyl., mag., spring forks, Continental tyres, under-geared pulley; bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham. [X4830]

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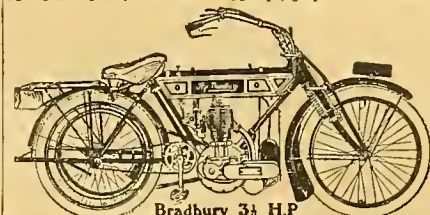
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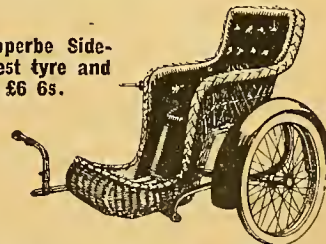
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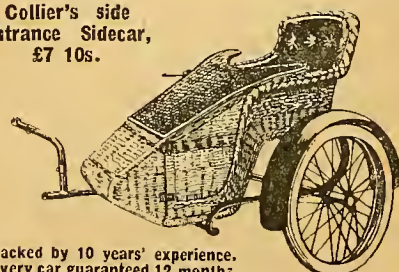
- 1910 2-speed SCOTT ..... £37 10
- 6 h.p. Twin ANTOINE, magneto, spring forks ..... £23 10
- 4 h.p. 2-speed ROC, handle starting ..... £24 10
- 1911 3½ h.p. twin REX, new and unused ..... 34 Gns
- 1911 3½ h.p. HUMBER and sidecar ..... £39 0
- 1910 7 h.p. twin REX, M.O.V. .... £37 10
- New 1911 3½ h.p. 2-speed REX DE LUXE and new sidecar ..... 50 Gns
- 3½ h.p. Magneto REX, spring forks ..... £18 18
- 2½ h.p. KERRY, runs well, spring forks ..... £10 10
- 2½ h.p. DE DION, spray carburettor ..... £10 10
- 1911 3½ h.p. 2-speed N.S.U., spring frame ..... £35 0
- 2½ h.p. BAT, spring frame ..... £10 12
- 5 h.p. 2-speed twin REX DE LUXE and sidecar ..... £37 10
- 1910 Twin REX, special finish ..... £29 10
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- Special 3½ h.p. Magneto REX, free engine ..... £26 10
- 3½ h.p. light, low REX, h.b. control ..... £12 10
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1912 6 h.p. STANDARD MODEL	£58 0

<b>BRADBURY</b>	
1912 3 h.p. 2-SPEED, BELT DRIVE	£55 0
*1911 3 h.p. SPEED MODEL	£36 0
*1911 3 h.p. STANDARD MODEL	£36 0
*1911 3 h.p. STANDARD MODEL	£38 0

<b>CLYNO</b>	
1912 6 h.p. 2-SPEED, CHAIN DRIVE	£68 5
(Delivery 7 days.)	

<b>CHAS. EDMUND</b>	
1912 3 h.p. J.A.P., SPRING FRAME	£50 8

<b>DOUGLAS</b>	
1912 2 h.p. MODEL K	£50 0
(Delivery 14 days.)	
1912 2 h.p. MODEL G	£41 0
*1911 2 h.p. STANDARD MODEL	£30 0
*1910 2 h.p. STANDARD MODEL	£25 0
*1911 2 h.p. 2-SPEED & CLUTCH	£37 0

<b>HUMBER</b>	
1912 3 h.p. 2-SPEED	£52 10
1912 3 h.p. 2-SPEED	£49 0
1912 2 h.p. 3-SPEED	£46 0
*1909 3 h.p. 2-SPEED	£27 0

<b>IVY</b>	
1912 3 h.p. PRECISION, STANDARD	£42 0
1912 T.T. MODEL	£45 0

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1912 2 h.p. 3-SPEED	£49 7

<b>NORTON</b>	
1912 3 h.p. STANDARD	£48 0

<b>RUDGE</b>	
1912 3 h.p. MULTI-SPEED	£60 0
1912 3 h.p. CLUTCH MODEL	£55 0
1912 3 h.p. STANDARD MODEL	£48 15
1912 3 h.p. T.T. MODEL	£48 15
*1912 3 h.p. CLUTCH MODEL	£50 0
*1912 3 h.p. STANDARD	£42 0

<b>SCOTT</b>	
1910 3 h.p. 2-STROKE, 2-SPEED, W.C.	£32 0
1910 3 h.p. 2-STROKE, 2-SPEED, W.C.	£30 0

<b>TRIUMPH</b>	
1912 3 h.p. CLUTCH MODEL	£55 0
*1911 3 h.p. MABON CLUTCH	£40 0
*1909 3 h.p. STANDARD MODEL	£29 0

<b>ZENITH</b>	
1912 3 h.p.	£55 12
1912 6 h.p.	£70 7
1912 8 h.p.	£72 9
*1912 6 h.p.	£63 0
1912 3 h.p.	£49 0
*1911 6 h.p.	£54 0
*1911 3 h.p.	£40 0
*1910 3 h.p.	£36 0

<b>ALSO</b>	
1912 SINGER, 4 h.p., 2-speed	£65 0
*1912 LINCOLN ELK, 3 h.p.	£29 0
1912 CHATER-PRECISION, 4 h.p.	£38 0
*1912 N.L.G., 4 h.p.	£38 0
*1911 PREMIER CLUTCH, 3 h.p.	£42 0
*1911 ENFIELD, 2 h.p. twin cyl.	£26 0
*1911 F.N., 2 h.p., 2-speed	£33 0
*1911 N.S.U., 6 h.p., 2-speed	£45 0
*1910 V.S., 5 h.p., 2-speed	£33 0
*1909 F.N., 4-cyl.	£20 0
*1909 REX, 5 h.p., CLUTCH	£20 0

\*Indicates Second-hand machines, all complete with Lamp, Horn, and Tools.

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## MOTOR BICYCLES FOR SALE.

4-CYL. F.N., going order, all spares; £12/10.—Morris, Coten End, Warwick. [X4702]

1910 F.E. Ariel, 3 h.p., decompressor, new belt; any trial; £28.—E. E. Morris, Warwick. [X4701]

TRIUMPH, 1911, standard, exceptional condition, unused through winter; bargain, £35, receipt given; no offers.—64, Tilton Rd., Small Heath, Birmingham. [X4640]

MOTO-REVE, 1911, 2 h.p. twin, Druids, new studded tyre, Dunlop and Whittle belts, horn, tools, spares; £19/10.—35, Weathercock Rd., Sparkhill, Birmingham. [X4814]

TRIUMPH, F.E., 1910, Cowey, 2 spare belts, lamp, generator, Lucas horn, many spares, just overhauled, condition perfect; £35, or nearest.—W. J. Collins, Earl Shilton, Warwick. [X4752]

1911 3 h.p. Humber, 2-speed, new condition, not done 2,000, Jones speedometer, head light, whistle, mirror, spare cover, belt, valves, etc., many refinements; £38.—Hirst, 214, North Fosse, Leicester. [1956]

1912 F.E. Triumph, done 2,000 miles only, complete with Cowey, Lucas lamp and generator, horn, watch, new Kennhall on back and all spares and tools; what offers?—Triumph, 28, Narborough Rd., Leicester. [X4926]

DOUGLAS, 1911, 2-speed, D, condition perfect, full set tools, pedals and extra footrests interchangeable, spares, belt and tube carrier; approval, deposit; £34, or offer.—Baynes, St. Anthony's Hill, Desborough, Market Harborough. [1722]

1912 Rudge, T.T., also F.E. Zenith, Singers, immediate delivery; 1911 F.E. Singer, just overhauled by makers, £39; two 1911 Triumphs, standards, condition excellent, not ridden since March, being taken in exchange; £37 each.—Midland Cycle Co., Coalville, Leicester. [X4896]

TRUMP Motors, Ltd., Birmingham.—1912 free engine Rudge-Whitworth, practically new, £50; 3-speed Sturmer-Archer 3 h.p. Trump-Jap, with sidecar, 1912, perfect condition, £56 complete.—Apply, Exchange Department, Trump Motors, Ltd., 36, John Bright St., Birmingham. [X4920]

TRIUMPH, 1910, just been thoroughly overhauled by makers, many 1912 improvements, including new carburetter, piston, engine pulley, handle-bars, belt, etc., perfect condition, Lucas lamp, many spares, not done 200 miles since overhaul; owner bought car; £35.—Holcroft Ingleside, Four Oaks, Warwickshire. [X4028]

## SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1911 T.T. Rudge, in sound order, new tyres; £33.—Lambert, Thetford. [X4602]

1911 3 h.p. 2-speed Humber, in first-class condition everywhere; £37.—Lambert, Thetford. [X4603]

1911 Enfield Lightweight, cheap; 3 h.p. N.S.U., new 1911, £25.—Lambert, Thetford. [X4604]

FREE Engine B.S.A., free engine Ridges, 3-speed Premiers, lightweight Premiers, Bradbury, etc., in stock.—Lambert, Thetford. [X4605]

8 h.p. J.A.P., Chater-Lea, new April, cheap.—Lambert, Thetford. [X4672]

N.S.U., 3 h.p., 1908, Bosch, Brown and Barlow, good order; £16.—Fox, Whittlesea. [X4614]

INDIAN, 7 h.p., 1912 model, deliver at once; Ariel, 3 h.p., T.T. model, in stock.—Coward, Wisbech. [X4875]

N.S.U., 3 h.p., mag., B and B, new belt, good going order; bargain, £14, or nearest.—Lowe, Walpole, Wisbech. [X4037]

3 h.p. Minerva, new condition; cost over £20 Sept. 32 accept £14; bought higher power.—G. Seaman, Hunstanton. [1812]

MINERVA, 2 h.p., splendid running order, new belt fast; £25/10, or £1 and mag.—R. Matthews, 48 High St., Southwold. [1767]

1912 Zenith, 6 h.p., bargain, quite new, complete with 1912 Gloria sidecar costing £22/10, P.R.S. 23/1C lamp, 5 gn. Jones speedometer, 24 h.p. horn, spare belt and number other spares; 75 gns.—Robinson's, Greer St., Cambridge. [X4721]

DOUGLAS, 1910 pattern, tyres and engine as good as new; price £27.—Robinson's, Green St., Cambridge. [X4722]

GLORIA Sidecar, 1912, No. 4, nearly new, complete with travelling trunk; £15.—Robinson's, Green St., Cambridge. [X4722]

CLYNO, 5-6 h.p., 2-speed; sole agents in Eastern Counties; £68/5.—Robinson's, Green St., Cambridge. [X4724]

1912 Triumph, free engine model, actually in stock; price £55.—Robinson's, Green St., Cambridge. [X4725]

1912 Zenith, 5-6 h.p., very little used, complete with lamp, speedometer, horn, spare belt and other spares; genuine bargain, £57.—Robinson's, Green St., Cambridge. [X4726]

LADY'S Douglas, 1911 pattern, 2-speed, handle starting, ridden a few miles only, complete with lamp, horn, and spares; £38.—Robinson's, Green St., Cambridge. [X4727]

ROBINSON'S Motor Bicycle Garage, Green St., Cambridge, Triumph agents. Tel.: 588. "B.A." Bicycles, Cambridge. [X4728]

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P.M.C., DOMINANT

Second-hand "G.-N.,

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Spares. Cost £115. Accept £88. Guaranteed

in perfect order.

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FROM £3 10 TO £22

# GRADUAL PAYMENTS

NEW MOTOR CYCLES

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SECOND-HAND FROM

5%

Any Motor Cycle or Accessory

(OVER £5 IN VALUE)

can be supplied on this system. From 1 per cent, to 10

per cent, has to be added to the advertised price of machine

according to the type of motor cycle chosen. One quarter

of the full amount to be paid on receipt of motor cycle, and

the balance in twelve equal monthly payments. THE

MACHINE BECOMES THE ABSOLUTE PROPERTY OF

PURCHASER AS SOON AS FIRST PAYMENT IS MADE

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157 GREAT PORTLAND STREET, W.



# THE MOTOR CYCLE

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### Two-stroke Engines.

THE result of the Senior T.T. Race calls to mind the fact that a two-stroke engine has never previously won a classic motor race in this or any other country, and from now onwards the full limelight of publicity will be turned on this principle of constructing an internal combustion engine. Among the advantages of the two-stroke method, particularly in multi-cylinder form, is its even turning moment or continuity of torque. Doubtless many will ask why it does excel in this degree over the conventional type. The answer is that a working stroke takes place at each downward thrust of the piston, so that a single-cylinder is almost the equal of a twin, and the twin is equivalent to a four-cylinder.

Owing to the fact that the explosion and compression pressures balance one another, there is a continuous force exerted on the piston head which enables very light reciprocating parts to be used.

It should not be imagined, however, that because the working strokes are doubled that the power is multiplied to the same degree; this is because the cylinder of a two-stroke engine does not fill so completely as the four-stroke, and the explosions are thereby weakened. It is argued by some that on account of the increased number of working strokes the two-stroke engine should be handicapped in races, but this opinion is open to argument, particularly as races such as the T.T. are instituted to bring out the best features of individual types. The amount of power that can be obtained from a given cubical capacity irrespective of fuel consumption is the chief desideratum in motor cycle racing. For the commercial article expense in the way of increased

consumption can then be reduced by decreasing the size of the engine, thereby lightening the machine.

One of the disadvantages of the two-stroke principle is that the increased number of explosions induces greater heat, and it has not been found practicable to run these engines without the introduction of a complication in the way of water-cooling. On the score of simplicity and freedom from trouble water radiators, piping, and joints are a complication, as there is something more to go wrong, and water-cooling systems require extra attention in winter to prevent damage through frost. No one could accuse us of being unfairly critical if we point out that the winning of this year's T.T. by a two-stroke engine has hardly proved the great superiority in power which is claimed over a four-stroke of equal size, because, giving it all credit for its success, it should, on paper, have beaten the four-stroke by a greater margin than seven minutes.

What the two-stroke has demonstrated is its capability to win the most important event in the motor cycle world against all comers, and what would have been a more complete defeat of the four-stroke was only prevented by the tyre failure of the only other two-stroke machine in the race.

To sum up, the result of the T.T. proves that as regards power there is very little difference between the two systems. The consumption of the two-stroke is certainly greater, but it has the distinct advantage of superior torque, simplicity, and absence of vibration.

Finally, we take this opportunity of heartily congratulating the designer and makers on their success and for their perseverance in perfecting their system in face of such overwhelming odds.



## Combined Belt and Chain Transmission.

**W**HO emerged with most credit from the Junior T.T.? I modestly asked a group of enthusiasts in Douglas within a few hours of the close of the Junior event a week last Friday. The usual volley of "buts" and "ifs" were fired at me. "If" Bailey's gear hadn't stripped: "if" Newman's tyre hadn't burst: "if" W. H. Bashall had ridden the Humber he originally entered, and so forth. At the cease fire I gently insinuated—with my world-famous modesty—"It will always be called my race!" This lit the fuse. I was indignantly informed that I had merely sat on the best chair at Woodlands, cadged drinks, gorged chocolate, and so forth. When they had abused me sufficiently, I continued—still in Uriah Heep's rôle—"Who's been telling the trade and the public for two years past that the combined belt and chain drive is going to kill the straight-through belt, dead as a doornail?" An awkward silence followed: several innocents had not remembered the Douglas transmission in their meditations on the race.

### Equally Matched.

"Look here," I said importantly, "the Humber showed up best last year, the Douglas was easily top dog to-day. Put them side by side: they are the same weight, same power, same all-round class. Match them on a dry day at Brooklands, and the winner will depend on the luck of the race, pure and simple. On a dry day they are as nicely a matched pair as you could find in the world. But in the mud and the wet of Friday's

race the first half-lap put the direct drives down the list.

We have learnt—the world has learnt—that the combined belt and chain drive laughs at rain and mud and surface water. The chain drive has never conquered the British market: we all of us grumble about our belts when it is wet. The combined drive is going to be the popular drive of the nation within two years. It would have come anyhow. But that one wet lap has hustled forward two years: and now it's coming soon; you might almost say it's come.

In the very near future I predict that every type of machine—from 2½ to 8 h.p.—that's not wholly chain-driven is going to have the combined drive. And you'll all be wondering why you were such jugginses that you didn't see it before.

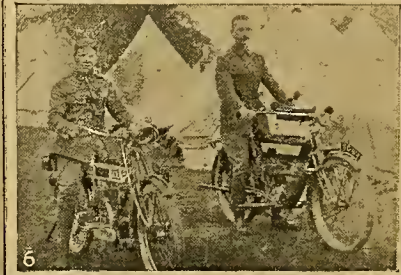
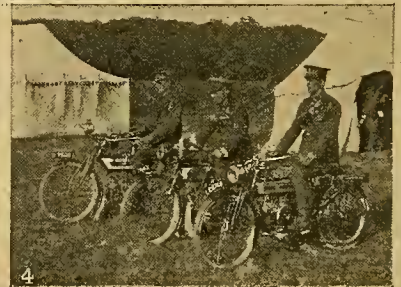
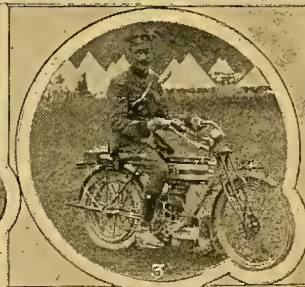
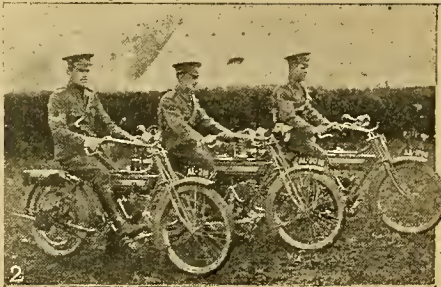
You'll get twice the distance out of your belts that you get now: you'll be able to go full tilt through a watersplash without your engine racing itself silly, and you'll climb Amulree in Scotch rain till your engines seize with never a sign of belt-slip.

Now I pretended to claim credit for myself when I opened fire, but I was only shamming, for it was the Douglas machine which taught me in 1910 that the combined drive was the solution of the transmission problem, and the credit's all theirs. I'm only one of

those fools who know a good thing when they see it.

I'm sure Douglas has done himself a bit of good: but I'm also sure he's done the whole industry good.

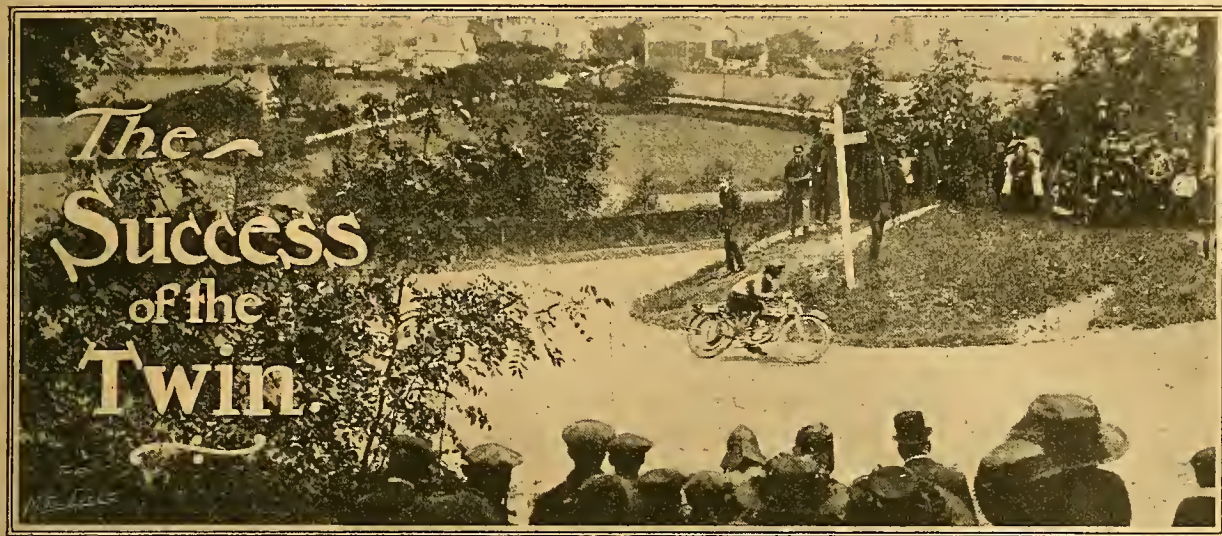
IXION.



THE  
MOTOR CYCLE  
IN  
THE ARMY.

1.—Motor Cyclist Scouts, attached to the Sherwood Rangers Yeomanry. 2.—Lightweight riders at Bubworth Park, Retford, Notts. 3.—Arthur H. Saxby, of the Royal East Kent Mounted Yeomanry. 4.—Trooper W. R. Guildford, L. W. Hudson, and H. S. Yearsley, of the West Kent Yeomanry. 5.—The motor cycle section of the Cambridge University Officers' Training Corps at Aldershot. 6.—Lieut. Cpl. Bagshaw (3½ h.p. Bradbury) and Trooper Bagley (3½ h.p. Humber) of the Northants. Imperial Yeomanry.





**W**HATEVER else may have been raught by the International Tourist Trophy Races of 1912, the events will go down in history as a decisive score for the twin-cylinder machine. For years these contests have been regarded as exciting and important tussles between single and twin-cylinder engines, quite apart from the actual T.T. victory, but this year for the first time could the races be regarded as real battles of the cylinders. All competitors in the Junior Race were allowed to use engines up to 350 cubic centimetres capacity, and in the Senior up to 500 c.c., irrespective of whether they were single or multi-cylinder, two-stroke, air, or water-cooled. This year's was the first race of its kind. Hitherto single-cylinders were obliged to concede advantages in engine capacity to multi-cylinders. Let us examine the results. In 1907 and 1908, when petrol consumption was taken into account, there was no limit to the size of the engine, yet the single-cylinder made better time in each case on a smaller consumption of spirit. In 1909, speed alone was the determining factor in the placing, the twins being half as big again as the singles. This time two twins beat the singles, and the result was reproduced a year later, when multi-cylinders were reduced to 670 c.c.

Last year the twins were still further reduced to 585 c.c., but again, notwithstanding their gradually restricted capacity, three got home before any single-cylinder. A twin also won the Junior Race.

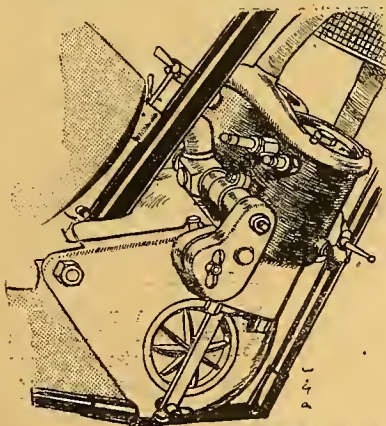
In 1912 it was resolved to place all on an equal footing, and the twin has emerged triumphant in both events. It will also be seen that, notwithstanding smaller engines in the Senior Race, the speed has gone up in inverse proportion.

#### Successful Machines of Unconventional Design.

A couple of years ago the suggestion to race singles and twins on level terms would have been laughed at; this year they were almost equally matched, but the writer goes so far as to say that in two years' time the twin machine will have to give the single a start.

Turning now to the mechanical features of the winning machines, it is interesting to observe that

both the Douglas and the Scott can be termed of unconventional design, the one with a twin-cylinder opposed engine, the other with a side by side twin on the two-stroke principle. Another significant point which I have not seen emphasised by anyone as yet is that both had outside flywheels. Many an expert to-day regards the outside flywheel engine as the more efficient and satisfactory, and I verily believe that machines with outside flywheels steer better. Can it be due to the influence of the gyroscopic action in-



The twin-cylinder two-stroke engine of the winning T.T. Scott, showing the rotary distributor valve. The sides of the cylinders only are water cooled.

duced by larger flywheels? Likewise the counter-shaft method of transmission, embodying a change speed gear amidships, was a feature of both T.T. winners' machines, so that more knowledge is being gained with regard to the debatable point of light or heavy back wheel. One can hardly compare piston design, seeing that the engines are of different types; the Douglas had a drilled piston and used only one ring to each, whereas the Scott had three rings per piston. Haswell's Triumph, which finished second, had also but one ring on the drilled piston. In this connection it would be well if standard design could be insisted upon for pistons and cylinders. One ring on a loosely fitting piston in order to get high engine speeds would not suit for ordinary touring work. If revolutions can only be produced by loosely fitting parts, surely it points to something wrong with the design of piston and cylinder which causes unequal expansion. This is a matter which should be rectified.



## The Success of the Twin.—

## Speed and the Difference.

Haswell's ride on the first single-cylinder—a Triumph, as usual—was regarded as an extremely fine performance. The thousands who witnessed the race would know how much more difficult it was to sit the single-cylinder at mile a minute speeds compared to the smooth-running Scott. I overheard Applebee and Haswell discussing this subject in the measuring enclosure, and their remarks interested me greatly, as I had noticed the single bounce on the rough surfaces. By the way, has anyone realised that the Triumph Co. missed second place last year owing to their reticence in adopting the speed gear? Haswell's 1912 time was but 1m. 47s. slower than Godfrey's (585 c.c. Indian) last year. Although practically the same 85 × 88 mm. machines were used, we have the interesting fact that the Sturmey-Archer three-speed gear, of which only the two top ratios were used,

foremost it brought home the fact that small engine pulleys on lightweights are of little use for racing in wet, and the large driving pulley on a counter-shaft, geared up from the engine, is infinitely preferable, not only reducing wear and strain on the belt, but almost eliminating slip.

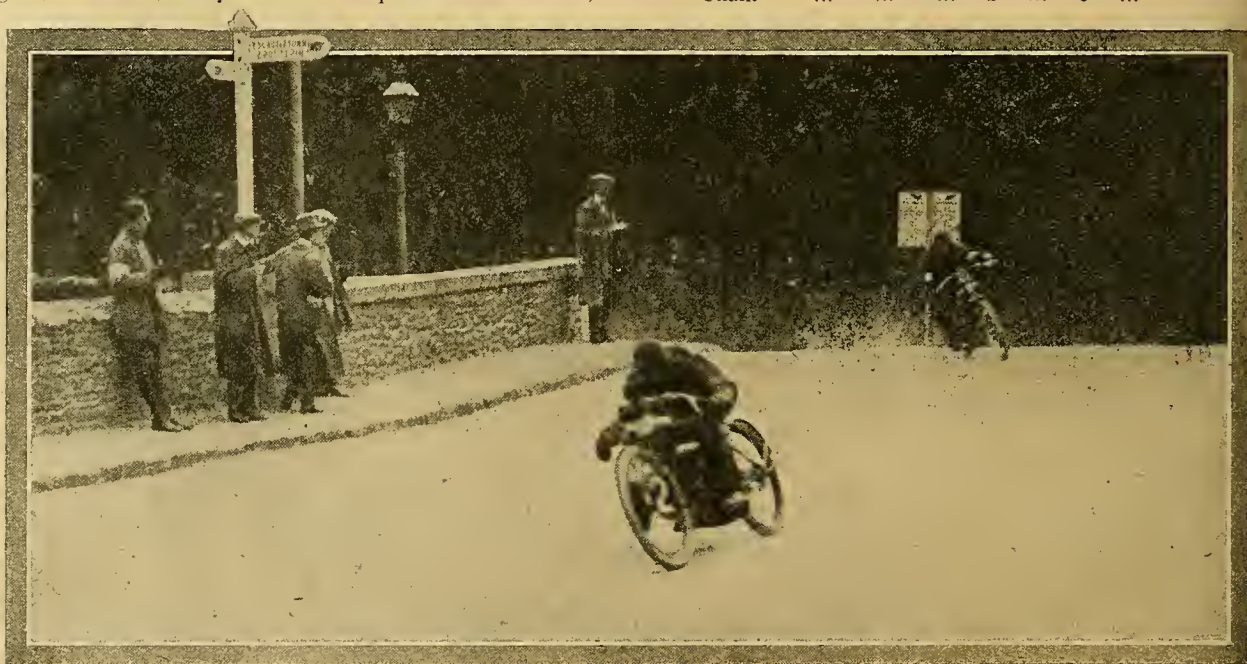
What a pity the competing machines were not weighed. It was doubly important this year seeing that engine dimensions were the same. I hope the A.C.U. will not overlook this another year.

## Transmission.

The *veraata questio* of chain or belt is no nearer solution except for the fine showing of the combined drive. The following statistics form interesting reading.

## JUNIOR T.T.

	Started.	Finished.	Percentage.
Belt ... ..	12	7	58.33
Chain and belt ... ..	6	4	66.67
Chain ... ..	2	0	—



A T.T. DUEL AT QUARTER BRIDGE.

At the beginning of the second lap the spectators were treated to a private duel between the winner, F. A. Applebee (Scott) and J. R. Alexander (Indian), both rounding the corner almost together. On the picking up stretch the two-stroke machine forged ahead.

improved the speed of the Triumphs over the 187½ miles course by no less than 18m. 52s. Carvill's time last year on a Triumph geared 4½ to 1 was 4h. 16m. 49s., whereas Haswell on the two-speeder (4 and 6 to 1 ratios) took only 3h. 57m. 57s. In comparing the times we must remember that, owing to the treacherous road surface on the morning of the race, rubber-studded Dunlop tyres were fitted to this year's Triumphs, which are not so fast as the plain tread wired-on covers which have been used hitherto.

## Would Rain have Affected the Result?

What would have happened if it had rained during the Senior Race? Some said chain-driven machines would have scored easily, others considered that the chains would have got clogged with mud and become harsh and stiff. In some respects it is a pity wet was not experienced as in the Junior Race, for the first two laps in that event taught us such a lot. First and

## SENIOR T.T.

	Started.	Finished.	Percentage
Belt ... ..	29	11	37.93
Chain and belt ... ..	2	2	100
Chain ... ..	8	7	87.5

## Change-speed Gears.

There were eleven survivors of the twenty starters in the Junior Race, and twenty out of forty in the Senior event. The following table shows the percentage of successes of the gears used:

## JUNIOR T.T.

Two-speed gears ...	7	4	57.14
Three-speed gears ...	11	6	54.55
Variable gears ...	1	1	100.00
Four-speed gears ...	1	0	—

## SENIOR T.T.

Two-speed gears ...	18	16	88.89
Three-speed gears ...	10	1	10.00
Variable gears ...	11	3	3.67
Single gear ...	1	0	—



## The Success of the Twin.—

## Single or Twin?

Another phase of the battle of the cylinders is provided by the figures below, giving the percentage of survivors on each type.

## JUNIOR T.T.

	Started.	Finished.	Percentage.
Twin-cylinders ...	14	8	57.14
Single-cylinders ...	6	3	50.00

## SENIOR T.T.

Twin-cylinders ...	17	11	64.71
Single-cylinders ...	23	9	39.13

The Senior figures will cause some astonishment, but it is only fair to mention that the small number of survivors on single-cylinder machines was no fault of the Triumph riders, seven out of eight of whom com-

pleted the course—by far the best team performance. The consistency of their running is worthy of special mention. Hoffmann averaged 44.46 m.p.h., Adamson and Kirk 44.29 m.p.h., Haswell (the fastest) averaged 47.28 m.p.h., and at the other end Hart-Davies 36.17 m.p.h.

With ordinary luck in the matter of tyres the Scotts might have been first and second, and as this is the first big event in which a two-stroke machine has emerged triumphantly, one must admire the foresight and perseverance of its designer, Mr. Alfred A. Scott. His was the first motor cycle to have a twin-cylinder two-stroke engine, a standardised open frame, a kick starter, and it was always marketed with chain drive and a two-speed gear. There never was a more original design. G.S.



ON THE SNAEFELL MOUNTAIN CLIMB.

J. A. Hoffmann (Triumph) rounding the corner on the Gooseneck, which is half a mile above the hairpin.

A. H. Alexander (3½ h.p. Indian) and H. A. Collier (3½ h.p. Matchless) negotiating the corner close together.

A view from below the Ramsey hairpin, showing S. L. Bailey (2½ Douglas).

## AN OFF DAY IN THE ISLE OF MAN.

ON the occasion of the one clear day which the writer was able to enjoy in the Isle of Man, an exceedingly pleasant time was spent on a 2½ h.p. Motosacoche, the small engine of which accredited itself admirably on the many stiff hills which abound there. The first part of the journey was northwards over the mountain road. Near Keppel Gate a little light pedalling was necessary, as the gradient is somewhat steep, but the little engine pulled well, and the long climb was finished in excellent style.

At the Bungalow, Captain Nicholl handed over to me the four-cylinder F.N., which had been placed at his disposal for the race week by the F.N. Agency, and a very excellent machine it is. Fitted with a most comfortable saddle and the finest pair of spring forks it is possible to imagine, to say nothing of the perfectly balanced engine, it was an absolute dream to ride. The charming smoothness and the glorious feeling of absolute comfort render it perfectly delightful.

It was driven three parts of the way to Ramsey, and in sight of the Albert view-tower was stopped, turned round, and restarted by pushing with the low gear in engagement (purposely). The engine fired at once, and was accelerated till the bevel screamed a song of joy,

then top gear was engaged, and the climb finished without a change down. It was an interesting and most enjoyable experience which the writer was very glad to have had.

The rest of the day included a climb up to Snaefell summit on foot, and, returning to the Motosacoche, a ride down the precipitous Sulby Glen Road, from which the journey was continued *via* Ballaugh, Kirk Michael, and Peel by the coast road. After Peel the road to Port Erin was taken, then Glen Meay, the hill beyond which has a corner possessing a very stiff single figure gradient, which appeared so suddenly that both the writer and his companion were forced to dismount. Thanks, however, to the Motosacoche pulley gear, an easy restart was made.

Then ensued a stiff climb over the hills, which the baby satisfactorily negotiated, and a long run down to pretty Port Erin. Our ride back to Douglas was without incident, save that we encountered a smashed up Matchless sidecar machine, which had struck a car end on and been reduced to an absolute wreck. It is a pity visitors do not use their machines with more care in the one place in the United Kingdom where the police act with the utmost lenience and consideration to visitors generally and motorists in particular. E.M.P.B.



# Occasional Comments

By "Izion"



## A Method of Carrying Spares.

Last week I was examining the machine of a chance roadside acquaintance, and I detected a most original method of storing sundry spares. A small piece of mahogany board about an inch thick was fastened horizontally between the rear ends of his carrier panel, and two spare valves and two plugs were mounted underneath it, in the usually wasted space between the carrier and the tail of the rear mudguard. Depressions were hollowed in the wood to accommodate the valve-heads, and the stem slipped through a central hole, the spring, cap, and cotter being affixed below to lock the valve. The sparking plugs were screwed up from beneath into holes of the correct thread. The rider said he had carried his spares in this fashion for two seasons with great satisfaction.

The next dodge I expect to see will be spring clips on each spoke on both sides of the rear wheel, into which two spare belts may be coiled and snicked!

## Steering Design.

Just at present I am inhaling my ozone on a T.T. Rudge, and it draws one's attention to the great variations one meets in steering forks. This machine is tuned for speed work, with very much advanced ignition, and a carburettor adjustment which will not allow it to fire regularly at much under legal limit, and it only gets into a nice even purr towards 35 m.p.h. or so, while it can beat a mile a minute if I give it permission. Yet except when the machine is all out, it can be safely and comfortably steered one-handed, and the springs in the fork roll out all uneven surfaces.

About as much could be said of an Indian I rode earlier in the year, and doubtless of other leading makes which I have not sampled recently. But I must say that there are plenty of machines which fall below this standard; machines with bounceable forks, which register the location of every shallow pot-hole on the joints of one's vertebrae, machines which can only be kept upright at low speeds by considerable address, and which invariably necessitate two wrists of steel if they are to be held on a beeline when the speedometer needle is half-way round its dial.

Now why don't the makers of these bad steerers examine the principles embodied in the few perfect steerings, and duplicate them?

## Fly-up Stands.

Having ridden many machines with stands which had to be kicked up and pressed into a spring holder, I found my puzzled toe wandering out rearwards to urge the stand into its clip, and with a pleased smile I realised that the L.M.C. stand flies up of its own accord. This is a very convenient and simple detail which might reasonably be copied with advantage. No one wants to handle a part of the machine which is always more or less dusty or muddy, according to circumstances.

## American Journalism.

I always enjoy reading the American motor cycle papers, though their ways are not ours. Of late their star reporters have been more lurid than usual. When the 95 m.p.h. track record was put up the other day one scribe remarked it was lucky they had electric timing, for you couldn't see the rider or his machine at all, so fast were they travelling; in fact, you could only tell when they passed you by two tokens—the draught and the noise.

If the American libel laws were in force over here we should be able to give much freer vent to our occasional resentment against the police. The current issue of a Chicago paper remarks of one Chief Constable, "He is reasoning with his feet, and they are cross-eyed!" And of another, "This is the man who fought two years for a six-cylinder automobile, urging that the superintendent and detectives could hurry faster to a scene of crime. He got the machine, but is seen oftener hurrying to a scene of conviviality than to a scene of crime." (How German motor cyclists must envy such rights of free criticism!)

The chief American cities keep a squad of motor cycling constables mounted on high-g geared 7 h.p. twins, and these scouts employ a provocative policy, if the press reports are truthful. Wearing no uniform, they coax some unsuspecting tourist to engage in a "scrap" with them, and when he has got his nose well down and his throttle open, they reveal their identity and arrest him. Motoring offences in most States render the culprit liable to instant arrest: he is immediately haled before the magistrate, and has to pay the fine before he is allowed to proceed.



JUNIOR T.T. RACE. Harold J. Cox (2½ h.p. Forward), the third to finish, at Hilberry corner. Cox was also third last year.



# ENGLISH-DUTCH TRIAL.

Programme of Events in connection with the International Trial on August 5th.

**A**RRANGEMENTS for the above international reliability trial to be held in Holland, on August Bank Holiday Monday, are proceeding apace. On this page we outline the programme of events, and the order in which the riders will be started in trios from Amsterdam at 8 a.m. By riding together the competitors will check one another, and no one will have an advantage in being acquainted with the course.

## Order of Starting.

H = Holland. E = England.

### TEAM I.—PRIVATE OWNERS.

- H 1. J. A. v. d. Garde, Class B (Rover).
- E 2. Geoffrey Smith, Class A (Humber).
- H 3. H. Dieters, Class C (Phanomobiël).

### TEAM II.—TRADE.

- E 4. W. W. Douglas, Class A (Douglas).
- H 5. Hugo Smit Ezn, Class B (N.S.U.).
- E 6. Frank Smith, Class C (Clyno).

### TEAM III.—PRIVATE OWNERS.

- H 7. E. J. E. Maas, Class B (F.N. 4-cyl.).
- E 8. C. M. Down, Class A (Royal Enfield).
- H 9. D. Croll, jun., Class C (Indian sc.).

### TEAM IV.—TRADE.

- E 10. R. Holloway, Class A (Premier).
- H 11. P. J. Adrian and Co., Class B (Eysink).
- E 12. F. W. Barnes, Class C (Zenith).

### TEAM V.—PRIVATE OWNERS.

- H 13. P. N. Jelsma, Class A (Eysink).
- E 14. W. O. Oldman, Class C (Bat).
- H 15. D. de Roon, Class B (F.N. 4-cyl.), first reserve.

### TEAM VI.—TRADE.

- E 16. Sam Wright, Class A (Humber).
- H 17. R. S. Stokvis and Znen, Class B (Rover).
- E 18. F. A. Applebee, Class C (Scott).

### TEAM VII.—TRADE.

- H 19. J. Fonck, Class A (Vulkaan).
- E 20. W. F. Newsome, Class B (Triumph).
- H 21. J. L. Geidt, Class C (Cyclonette).

### TEAM VIII.—PRIVATE OWNERS.

- E 22. V. Taylor, Class B (Rudge).
- H 23. G. Th. Arends, Class A (Vulkaan).
- E 24. W. Cooper, Class C (Bradbury).

### TEAM IX.—TRADE.

- H 25. D. v. d. Mark, Class A (F.N. 1-cyl.).
- E 26. W. Pratt, Class B (P. and M.).
- H 27. J. W. Boots, Class C (Coronamobiël).

### TEAM X.—PRIVATE OWNERS.

- E 28. F. Dover, Class B (Premier).
- H 29. J. H. Nieuwenhuys, Class A (Douglas).
- E 30. C. W. Wilson, Class C (Morgan Runabout).

### TEAM XI.—TRADE.

- H 31. N. V. v/h D. H. Eysink, Class A (Eysink).
- E 32. J. H. Slaughter, Class B (—).
- H 33. C. Witteveen, jun., Class C (James).

### TEAM XII.—PRIVATE OWNERS.

- E 34. F. A. Hardy, Class A (Norton).
- H 35. H. Daalmeyer, Class C (Cyclonette).
- E 36. E. Lester, Class B (P. and M.).

The time and general meeting place at Harwich will be announced later.

The list of rules are in the press, also the route cards, and copies will be issued to the team members together with the circular number plates which are similar to those used in the Tourist Trophy races, but smaller. Accommodation has been reserved for the English teams at the Hare Hotel, Amsterdam, which is close to the official garage.

As regards the transport of competitors and their machines, Mr. H. Maroney, of the Royal Automobile Club Touring Department, is obtaining special quotations from the Great Eastern Railway, and this information will be divulged as soon as all arrangements are complete.

It is hoped to make up a London and a Midland party of competitors. All must report themselves at the Parkstone

Quay, Harwich, not later than 6 p.m. Saturday, August 3rd. The boat leaves at 10 p.m.

## Special Awards.

Offers of special prizes in connection with this event have reached us. In addition to the silver challenge cup, called "D'e N.M.V. Beker," presented by Messrs J. Ferwerda and A. Citroen for international competition, Messrs. Phelon and Moore, Ltd., offer a silver cup for the best performance by a Dutch private owner.

The Motor Cycle Manufacturers' Union offers a ten guinea cup for the best performance by an English private owner.

The Motor Cycle offers a silver cup for the best performance by a trade rider, whether English or Dutch.

## Non-competitors.

We have been asked by a number of readers who desire to journey to Holland with the teams if they may compete. Having queried the secretary of the Dutch Motor Cycle Club on the matter, the answer is that no further entries can be accepted. Only those motor cyclists who entered for the International event in the first instance and were subsequently chosen as reserves will be checked in addition to the International teams, and silver medals will be awarded to all such competitors who complete the 160 miles course to schedule time, and bronze medals if not more than thirty minutes late.

## Programme of the Trip.

### SUNDAY, AUGUST 4TH.

- 5.15 a.m.—Arrival of the English competitors at the Hook.
- 7 a.m.—Breakfast in Hotel Aerika, Hook of Holland.
- 8 a.m.—Start for the Hague, where machines can be stored gratis in the garage of the Haagsche Automobiël My.
- 11 a.m.—Start for Scheveningen. Lunch at 12.
- 3 p.m.—Official reception and tea offered by the president of the N.M.V.
- 4 p.m.—Start for Amsterdam, *via* den Deyl and Haarlem.
- 6 to 6.30 p.m.—Examination of machines in the official garage at Amsterdam.
- 7.30 p.m.—Official dinner in Amsterdam, presented by the N.M.V. to the thirty-six internationals, representatives of *The Motor Cycle*, the A.N.W.B. Dutch Touring Club, the Dutch Automobile Club and the press. Evening dress.

### MONDAY, AUGUST 5TH.

- 7 a.m.—Competitors assemble in front of the National Gallery with machines ready for start.
- 7.30 a.m.—Ride to the start, a few miles out of Amsterdam.
- 8 a.m.—Start of the trial. Mr. Citroen will act as official starter during the whole trial.
- 7 p.m.—End of the trial at the official garage, viz., Darracq Palace, 100 Stadhouderskade, in the neighbourhood of the National Gallery. The last rider is due at 6.56 p.m., plus 30 minutes—7.26 p.m.

### TUESDAY, AUGUST 6TH.

Visit by boat to Volendam, where the A.E.W.B. Touring Club of Holland offers an official lunch to the thirty-six competitors, the representatives of *The Motor Cycle*, and the N.M.V. The boat trip will cost about 3s. 4d. After lunch by the same boat to Marken, a most celebrated fishing town, and by boat back to Amsterdam.

At 9 p.m. visit to Theatre Cinema Pathe, Kalverstraat, No. 122, Amsterdam, where the N.M.V. will show a moving picture of the arrival of the British teams at the Hook of Holland, the visit to the Hague, Scheveningen, etc.

### WEDNESDAY, AUGUST 7TH

The English competitors return home. The same route as Sunday, *via* Haarlem, Lisse, etc., will be followed to Ouden Deyl, thirty-five miles from Amsterdam, where lunch will be taken. Afterwards to the Hague for dinner, and then to the Hook of Holland, where the boat leaves at 11.50 p.m. A long time will be required to empty the petrol tanks and to get the machines on the steamer.

## SPECIAL NOTE.

The official dinner, the official lunch, and the tea at the Grebbe (on Monday) are free of cost *only* for the thirty-six international competitors.



## T.T. TRIFLES.

E. V. Pratt wore a belt consisting of tiny leather pouches, each containing a spare part.

If the rain had continued throughout the Junior Race, it is doubtful whether a single direct belt drive could have finished.

Harrison Watson pulled up at Ramsey on the first round, and drily remarked that though his *machine* hadn't completed *one* lap, his *engine* had done at least *three*.

Some of the Senior entrants meditated deeply on the merits of the belt-cum-chain drive during Friday's *débâcle*.

Hulbert was riding an experimental chain-cum-belt two-speed Triumph last winter, and found the belt gripped even in deep snow.

If you asked any non-finisher what had happened to him, he invariably said "tyres!" But there are other things which *can* go wrong.

In the Junior Race the wind was blowing at 20 m.p.h. against the riders over the mountain top.

The Triumph men were praying for similar weather on Monday, believing they had the best "wind-sloggers" in the entry.

In the Senior Race, S. L. Bailey, on the Colmore-Douglas, broke Friday's Junior record lap on three occasions. But for a spill at the Ramsey hairpin and a broken chain he would have been well up. Fifteenth place is something to be proud of. There were more Senior machines behind him than in front of him.

Seven Triumph riders out of eight completed the course—a typical result in connection with this make of mount in T.T. races. The absentee retired owing to a burst cover in the last lap.

A. H. Alexander ran badly for two laps, his carburettor catching fire owing to flooding and his inlet valve rocker sticking. At last his Indian metaphorically got the bit between its teeth and he completed three fast laps.

Harry Reed's performance is typical of the pluck displayed by many of the unfortunate in their desire to complete the course. The valve lifter pin broke, and dashing down the mountain at over a mile a minute, he raised the lever at Kepple Gate corner only to find it inoperative. He made direct for the wall and was only saved by the turf at the roadside. He had six more spills at corners owing to the failure of this pin.

We regret to have to announce that there has been again too much fast driving in the Island, and one bad accident occurred on the eve of the Senior Race, while the police had to complain of inconsiderate driving on the Douglas promenade. The A.C.U. looks after the competitors well, but it cannot control visitors, and it is a shame that those to whom a most hearty welcome is extended should abuse the exceedingly lenient treatment accorded to them. The police have been advised to take the matter into their own hands.

The Triumph riders experimented with concave-topped pistons; as these got hot, there was a tendency for the piston head to flatten out and seize.

The private road at Ramsey ought to be repaired at all costs before another race is held. There were at least twenty narrow escapes of falls due to taking the footpath at high speeds, and any such fall might easily cause the victim to be impaled on the iron fence. Moreover, the path is only 4ft. wide, and more than once a man left the depot a few yards down the road just as another rider tore up. This compelled the second man to take the high-road, and if his pace was estimated for the path, the bumps in the road caused a fearful quadruple wobble.

All the small parts of Applebee's Scott were additionally secured with insulating tape and glue.

"Wait and see what Indians can do next year, if there is no trade bonds!" Wells said curtly after the race, "I sign no more bonds!"

Haswell has a splendid phrase for the sound of a well-tuned engine; he says, "*it's revving nicely*."

On Tuesday morning Jack Woodhouse's machine was still lying in the ditch near Snaefell Summit, bearing obvious signs of its fall.

The noise of some of the Junior engines minus silencers was simply appalling. The continuous crackle of some of the fast-running twins would put a 60 h.p. Brooklands racing car in the shade.

The Colliers were as careful as ever. They never hustled their refills, but always had a rag waiting, and mopped off any spilt petrol before proceeding. Harry was overheard to say on the boat, "I'm getting too old for this game."

Godfrey, last year's winner, made of steel and rubber though he is, confesses to feeling very fidgety for an hour before the start of his races; but once he's off, he does not care a washer if it snows.

J. R. Haswell, curiously enough, was the only Triumph rider to utilise an old engine, and though it had a domed piston, it was well "run in." Though he was rather "jumpy" the night before (like many of the riders), he rode like a demon when he once started. In fact he was slowed because he began hitting the ground with his foot-rests at corners, a trouble he had never encountered in practice.

There is a lot of false signalling to competitors in T.T. races. The exact signals given by the trainers depend on different riders' mentality. In 1911 Wells kept signalling "second" to Godfrey, when he was actually leading, desiring him to travel faster, and make assurance doubly sure, while trusting him not to lose his head; but Godfrey's friends along the course kept yelling his real place to him.

Besides the Hairpin and the Gooseneck, there are three other corners on the mountain climb which call for much address. On the drop off the mountain there are two unnamed corners which need careful negotiation at speed.

Noise is not speed. Spectators had several proofs of this during the Senior T.T. A noisy machine would come along and impress the onlookers with its fleetness, but it needed a buzzing Scott to pass these machines to gain an idea of the pace they were travelling.

This year Applebee senior signalled "first" to his brilliant son; but Frank rode as though somebody was a minute ahead of him, and took all possible risks right up to the finish, sustaining three frightful swerves in his final passage through Ramsey.

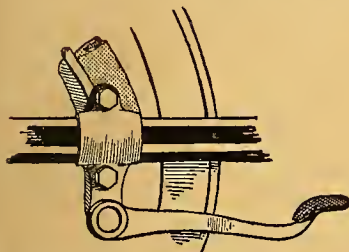
Egg-flip and hot Bovril were the racing men's favourite refreshers; tea, beer, and whisky cause indigestion, and chocolate induces thirst. Most of the men go through fasting, as they find any food dangerous when they are jolting about with a full stomach.

The Triumph riders were much happier than last year's team in being provided with change speed gears. This year they all changed down at every bad corner.

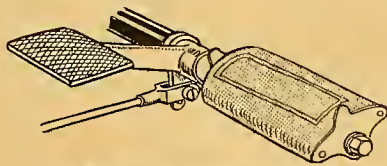
Some of the men who were unaccustomed to variable gears did not use their low ratios half enough. Three times we saw two riders fighting desperate and even duels on rising ground; in each case the man who changed down got clean away. None of the Seniors got away from a bad corner better than the Douglas machines, and we estimate that the Douglas men only lost time up and down the mountain; they seemed as fast as anybody on the winding levels.



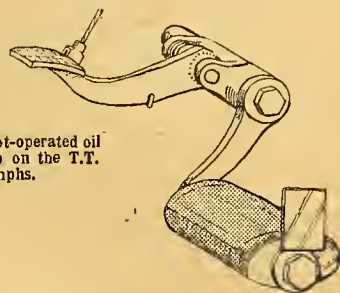
# Mechanical Features of T.T. Machines.



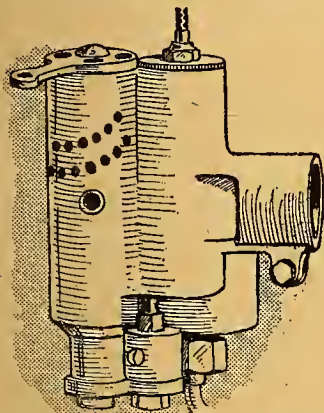
Direct-acting heel brake on the Dot machines.



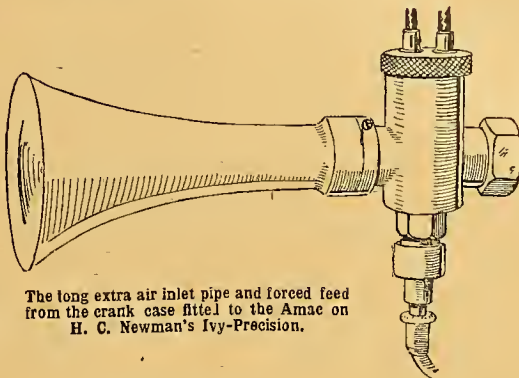
Heel brake on the N.U.T.-Jap.



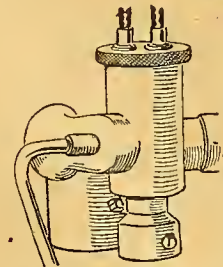
Foot-operated oil pump on the T.T. Triumphs.



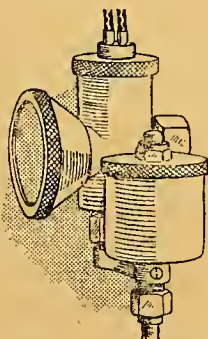
The Triumph semi-automatic carburetter used on some of the T.T. machines. The jet is more exposed than on the standard model. The extra air can be adjusted by a slide at the top of the rearmost barrel.



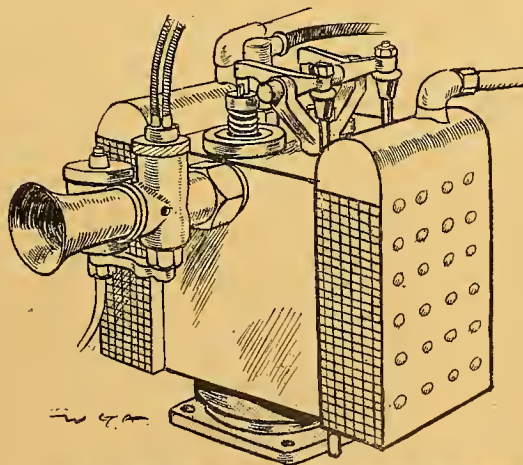
The long extra air inlet pipe and forced feed from the crank case fitted to the Amac on H. C. Newman's Ivy-Precision.



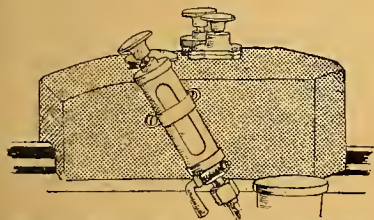
Forced feed from the exhaust pipe on a 2 1/2 h.p. Humber.



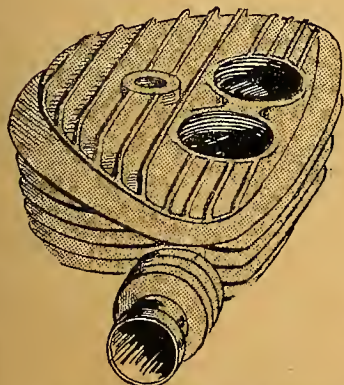
Enlarged gauze covered air intake on the Amac carburetter fitted to Collier's Matchless.



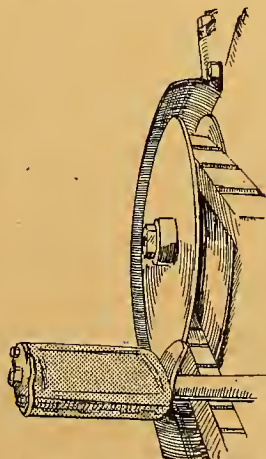
Cylinder of the latest Green water cooled engine, showing pannier radiators and overhead inlet and exhaust valves.



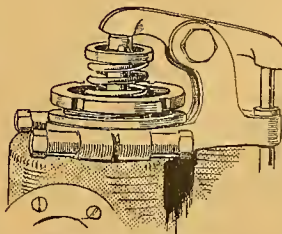
Oil tank on the top tube of the water-cooled Blumfields, showing Best and Lloyd and auxiliary oil pumps.



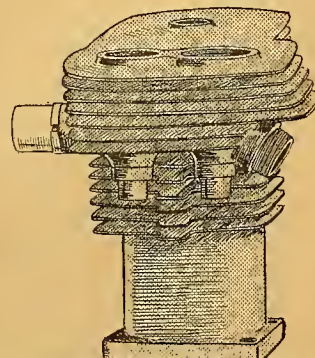
Forward cylinder head and air-cooled exhaust lead



Humber engine pulley belt guard.



Blumfield overhead valve mechanism.



Cylinder of new 2 1/2 h.p. Precision. The exhaust valve is larger than the inlet.





## A Week in the Isle of Man.

By B. H. DAVIES.

**F**OR the benefit of future visitors I will commence by offering a few wrinkles about visiting the island in comfort. A machine is essential to an enjoyable visit, and it should be preferably a light-weight, for ease of handling on the steamer. Luggage is a nuisance, as a motor cycle and overalls lumber a visitor up considerably; my tip is to send the kit by parcel post in a couple of large parcels. Indifferent sailors should arrange to leave Liverpool at 10.30 a.m., when a three-hour turbine steamer can be relied on; on the return journey you can pick your boat and your sea, and if you are cutting things fine to catch a train at Liverpool, just label your machine at Douglas and hand it over to the Steam Packet Co.; they will take it home for you without any bother at all.

Finally, eschew hotels, which are crowded and noisy in race week; the island abounds with good boarding houses, where the food is excellent and terms are reasonable. It is much pleasanter to stay with a few chosen friends at one of these establishments than to put up at an hotel.

### The Direct Belt Drive.

The 1911 races once for all established variable gears in popular favour, thus confounding the cynics who pretend that racing is valueless for the public. I have great hopes that the 1912 Junior Race will utterly condemn the direct belt drive; if rain had fallen steadily during the Senior Race, this much-to-be-desired result would have been inevitable, for probably the Scott, Indian, and Douglas machines would have had the finish to themselves. I nearly got lynched in Ramsey on the Sunday night for remarking to a belt-loving team that I hoped it would pour with rain all night, but really the Junior Race had amply confirmed the touring experiences of every all-weather roadman. There was so much surface water lying on the roads that I saw three or four machines absolutely refusing to propel themselves on the flat with brand new belts of 1in. section as taut as bow-strings on pulleys of 4, 4½, and 5in. diameter.

Some critics may opine that other troubles were concerned, seeing that these belt-driven machines did not pull up rapidly in the succeeding laps of the Junior Race when the roads were drying. A little reflection will solve the puzzle. Belt-slip was continuous on lap 1 with every direct belt-driven machine, though the degree of slip varied—some only had to throttle after a particularly deep pool, others were perpetually dismounting, and one rider told me his engine had done a total of r.p.m. equivalent to three laps in twenty-five miles.

### Lubrication and Belt Slipping.

To counteract extra revolutions, some riders omitted to increase their oiling, so that their engines seized; others increased their oiling, but were unable to gauge the excess accurately, so that their pulleys sooted up, and

their cylinders carbonised, and their valves fouled. That evening I saw a famous works manager kicking himself round and round a bandstand, crying, "Why didn't I fit combined drive?" When the weather continued showery and lowering on Saturday and Sunday, the faces of the belt-loving entrants for the Senior grew longer and longer.

On Saturday I paid a visit to Sulby Glen—a notorious hill-climb which I should imagine is worse than any hill in the Scottish Trials, and is certainly far stiffer than any ascent in last year's Harrogate Trials. Excessive gradient is practically continuous, the surface is non-existent, and the hairpin bends are as narrow as they are acute. My T.T. Rudge-Multi negotiated the gradients very comfortably indeed, but owing to my being an indifferent cornerman the hairpins gave it all it could do, and I might not have got up if the belt had not been on the slack side. This is where the Rudge-Multi scores on a tricky or wet hill; you can get a little belt-slip where you need it on a stiff corner, and expanding the pulley stops the slip when you want to pick up again.

### A Question of Steering Design.

In company with sundry riders I enjoyed a few scraps over the mountain road, and here I encountered another point in which the races are bound to benefit the private user. Dropping down off Snaefell summit at 60-70 m.p.h. is a lurid test of steering.

In past years makers have thrown the whole onus of this test on the rider; if he swayed or cut out down the straights, or rocketed a trifle at the corners, the directors who were watching shifted their cigars to the far corner of their mouths and said, "Tomkins has a lot to learn."

This year the trade big-wigs were forced to notice that the men were not wholly to be blamed or credited. Certain frames and certain fork designs stood out head and shoulders above all others, both in straight steering at speed over ruts and potholes, and in convincing cornerwork. I think sundry inferior frames and forks are tolerably certain to be altered in the near future, as the direct result of this year's Manx experience in particular. More than one machine disfigured by a fork which is quite unworthy of it will be sternly taken in hand.

On Monday the start was distinctly tremulous. Thanks to the reduced capacity of the twins, the increased reliability of the Scotts, and the fact that the Triumphs had at last bowed to public demand and accepted variable gears, the race was felt to be extremely open. The Colliers had not shown sensational speeds in practice, and the two famous brothers are not growing younger; outright victory for them was deemed improbable, and as events proved, they could not have won even if they had escaped a few trivial bothers with their overhead valve gear. At the



**A Week in the Isle of Man.—**

same time, the Indian entry was not quite so formidable as in 1911; Godfrey and poor Moorhouse were out of the way, and owing to the trade bond we were not up against the opposition of the Hendee factory.

**A Prophecy for 1913.**

The 1911 Indian machines had been merely relieved of their vaseline coating, and fitted with new connecting rods, flywheels, and cams in London. No very exhaustive experiments had been performed to decide if all the minutiae of design required by a shortened stroke were the absolute best, and nobody was much surprised when the opening laps promised a British victory. I venture to prophesy that if the T.T. be held next year, and trade affairs permit the Hendee factory to enter heart and soul into the event, the Indians will once more have to be dreaded and beaten.

The race showed plainly in what a very casual spirit many entrants undertake their task. I should say that quite half the users of three-speed hubs were ignorant how to adjust their control, the rod of which was liable to get bent in falls, or even by frenzied knee-gripping at anxious moments. More than half the competitors had omitted to make any detailed study of the course. The cracks knew where the bad ruts were, and had studied a definite line at the worst corners, to which they adhered closely every time they came round, while the ruck simply 'drove' as fast as they dared, and bounded haphazard all over the road; one or two men, who finished the course, took the same corner in five different ways. Engine troubles seemed over-numerous; I think this was due to the trade bond, which prevented complete preliminary tests at Brooklands. If the trade as a

whole formally compete next year, we shall not hear of riders seizing their experimental engines every single morning in practice, and finally starting in the race with an untried piston-cylinder combination.

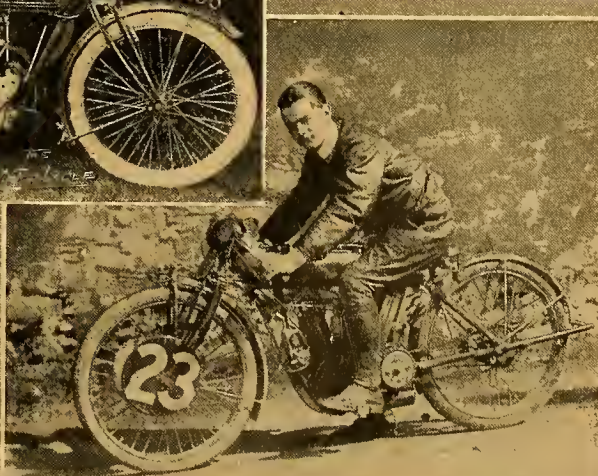
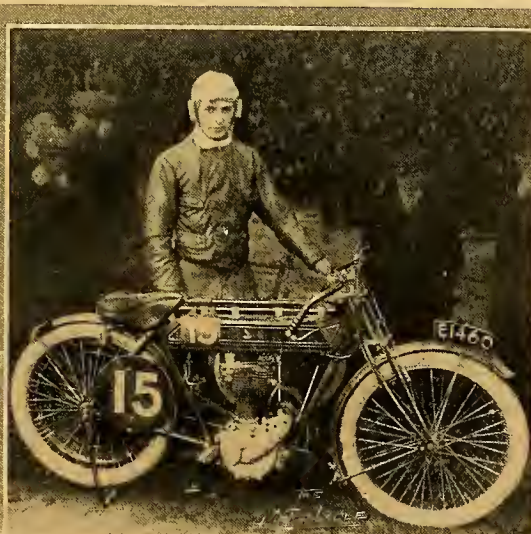
**Technical Lessons of the Race.**

Summing up the technical lessons, I should say that in 1913, supposing the races continue, we shall see the combined drive on many machines, we shall see a crop of new forks, and possibly of new frames designed to hug rough roads more evenly, and we shall see gears which place the additional weight nearer the centre of the wheelbase.

The question will also arise whether the two-stroke engines ought to be handicapped in cylinder capacity. If a team of six Scotts were entered under existing conditions, one could hardly look elsewhere for the winner. By the way, both races were won by machines of absolutely unconventional design, which have had to fight their way on to the market, a fact full of comfort and encouragement to original designers.

This year the trade bond threw a specially heavy strain on the riders. One has to train as hard for a motor cycle race of 187 miles as for a boat race or other athletic feat, and the early rising for morning practice during the preceding week always renders training difficult.

On the return journey we had a better boat than usual, and a calm passage; but the time occupied in disgorging two or three motor cycles from the bowels of the steamer at Liverpool emphasised the wisdom of sending machines home as unaccompanied freight; and another year the A.C.U. would do well to arrange for supplies of petrol at the Liverpool as well as the Douglas landing stage.

**PROMINENT TOURIST TROPHY RIDERS.**

David C. Belton (3½ h.p. Rudge-Multi), who occupied sixth place on the fourth lap but retired with a broken valve.

The unlucky No. 13—by special desire. S. F. Garrett (3½ h.p. water-cooled Regal-Green-Precision). He was the thirteenth to finish.

A. H. Alexander, mounted on the 3½ h.p. Indian ridden to victory by O. C. Godfrey last year. The young Scotchman was delayed by carburetter troubles.



# My Most exciting Ride: No 6. CHARLES COLLIER.

Interrogated by LC.

CHARLIE COLLIER did not take long to fix upon his most exciting ride, for one race of his stood out from all others on the score of excitement, and he at once brought to mind the races of 1906 between himself and George Barnes, otherwise known as "Cannon Ball" Barnes. Barnes had expressed his confidence of beating any motor cyclist in the world at a purely speed contest, and he challenged whosoever cared to meet him in *The Motor Cycle*. Charlie, to whom Barnes especially directed the challenge, took up the gauntlet, and an hour race was therefore soon arranged between him and Barnes. Charlie rode the same 6 h.p.

Matchless twin which had just been built for the international race of that year, while his opponent had an 8 h.p. Buchet. There had been a deal of controversy as to the respective capabilities of the two riders, but Collier easily won the event. Not to be thus easily accounted for, Barnes offered to meet Collier in short distance races, and a series of three, over distances of one mile, three miles, and five miles respectively, was arranged for decision at Canning Town.

"In the first event, over a mile," said Collier, in relating his experiences. "I got away at the start and finished first, but the second race—distance three miles—was the most exciting ride I have ever had. I knew it was a case of the man who first got going properly winning, and to my horror I saw Barnes getting off the mark first. Before he had fully accelerated though, I was passing him, and I settled down to the ride. I have never travelled at such a dangerous speed before or since, and even now I look back and marvel at the wonderful time I made. The second mile was covered in  $57\frac{4}{5}$ s.,

so that I was doing over a mile a minute on that little track. I hardly realised the danger I was running, so anxious was I to win, and I sped round as fast as my machine would take me, keeping as near the edge as I could. I had little fear that Barnes would overtake me, for it was impossible to do so at that speed on the Canning Town track, but I could not dream of slowing down, and so I went on, apprehensively, but with my blood up. It was over in a little more than three minutes, and the rubber decided, for I had secured the first two events. That second mile will never be beaten on that track, for in the condition it is now such a speed would be impossible, and even then it was stupendous."

"How did you feel when it was over?" I said.

"Feel! Why, I just thanked my lucky stars that it was finished, and,

after cooling down, I realised that I had won and began to forget that I was feeling dazed. In the third race I let Barnes have matters all his own way, for I could not ride any more that day, and after doing a short distance I stopped, and Barnes finished alone. I have never been so keen about any-

thing as I was to beat Barnes then, and possibly my anxiety contributed to the excitement I felt; in any case, I have never been so thrilled before or since, and do not wish to be, either. Following on the match, I took the same machine away to compete in the eliminating trials for the International Cup, and won."

"Were you not excited over the match with De Rosier last year?" I queried.

"No," said Collier. "Brooklands is not Canning Town." I agreed with him, and marvelled at that sixty miles an hour sprint over the little track in the East of London.

## NEXT SATURDAY'S BROOKLANDS MEETING.

The following are the entries for the Tenth Short Handicap ( $5\frac{3}{4}$  miles) at Saturday's B.A.R.C. meeting:

A. E. Pontin (1-cyl. Rudge) ...	85	× 88mm.
Scott Aitken (1-cyl. Rudge) ...	85	× 88
L. Straker (1-cyl. Jap) ...	85	× 85
H. H. Square (1-cyl. Robin-Minerva) ...	69	× 69
K. Yano (2-cyl. Bat) ...	85	× 58
S. Day-Timson (1-cyl. Rudge) ...	85	× 88
P. Newbold (2-cyl. Zenith) ...	76	× 85
James Gibbs (2-cyl. Humber) ...	60	× 60
Basil Collier (1-cyl. Rudge) ...	85	× 88
A. G. Walker (1-cyl. Rudge) ...	85	× 88
J. A. Manners-Smith (1-cyl. Triumph) ...	85	× 88

H. Jepson (1-cyl. Zenith) ...	85½	× 85
J. Cocker (1-cyl. Singer) ...	69	× 80
G. E. Stanley (1-cyl. Singer) ...	69	× 80
P. Schmidt (1-cyl. Puch) ...	76	× 77
H. Martin (1-cyl. Martin) ...	76	× 59
H. Belcher (A. G. Fenn) (2-cyl. Humber) ...	60	× 60
B. C. Remington (1-cyl. Rudge) ...	85	× 88
F. H. Hannis (1-cyl. Jap) ...	77½	× 90
R. L. Printz (2-cyl. Bat) ...	85½	× 65
E. B. Ware (2-cyl. Zenith) ...	76	× 55½
D. R. O'Donovan (1-cyl. Singer) ...	69	× 80
C. Pressland (1-cyl. Rudge) ...	85	× 88
L. L'E. Edwards (1-cyl. Rudge) ...	85	× 88
E. Remington (2-cyl. Jap) ...	90	× 77





## LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

### Jake de Rosier.

Sir,—Regarding your paragraph headed "Jake de Rosier," may I say that I am much surprised after hearing of the enormous sums that he was making in America to find that he is so much on the rocks. Whilst being quite willing to add my mite to any scheme that may be brought forward for his benefit, I should certainly like to know if what we were given to understand was true, or were they simply "running us up the garden."

INTERESTED.

### Tyre Makers and the A.C.U. Six Days' Trial.

Sir,—The policy of the members of the tyre section of the Manufacturers' Union in deciding not to enter their tyres in the above trial will surely give an opportunity for makers outside the Union to demonstrate the worth of their products. I, for one, will not patronise any firm who is satisfied to rely on the unfortunate user to test his goods and refuses to bear any expense in the matter. It will be interesting to see which makers have sufficient confidence in their tyres being able to withstand the trial to come forward and reap the benefit which is certain to reward their enterprise.

NON-UNIONIST.

### Road Conditions between Kew and Richmond.

Sir,—I have been interested in the correspondence which has appeared in *The Motor Cycle* regarding the abominable condition of the Kew Road, and can fully endorse all that has been said, but I think your correspondents cannot have been in the neighbourhood for some time, or they would have found things in a state which will rejoice the hearts of all motor cyclists who are compelled to travel from Kew to Richmond. The authorities appear to have suddenly leapt into action and are now busily engaged removing the ancient tramlines and laying the foundation for a new road of wood blocks. The operations are expected to last from four to six months, and in the meantime traffic is being diverted by the route indicated by Mr. Little.

Referring to the comments of "Ixion" in your issue of a few weeks ago regarding the weakness of the component parts of three-speed hubs, my experience strongly confirms his remarks. I had only ridden about 700 miles on my own three-speed geared machine, when I was one day held up by slipping clutches. On dismantling the back hub, I found that the ring nut, which keeps the discs against the spring plate and was only about  $\frac{3}{16}$  in. thick, had stripped its four threads. Surely a part having a strain to stand like this should have been made of stouter material to give some factor of safety.

P. WILLIAMSON.

### Power Required for Sidecar Work.

Sir,—I hope you will kindly grant me space to reply to Mr. R. H. Adams. If he will read my letter again he will, I am sure, admit that he has not answered one single point raised by me. I certainly did not condemn wholesale the  $3\frac{1}{2}$  h.p. for sidecar work. I said that for serious sidecar work a 6 or 8 h.p. twin was required, but that a  $3\frac{1}{2}$  h.p. would do well enough for occasional sidecar work on good roads. This I most emphatically repeat. My remarks as to examining engines (not cylinders) were distinctly stated to refer to single-gear sidecar enthusiasts.

By serious sidecar work I mean being on the road practically every day in all weathers over good and bad roads. Anyone who knows County Donegal in the winter will know what that means—ploughing through mud and stones, up steep hills, and against heavy gales and rainstorms.

I agree with Mr. Adams that I was unkind to my  $3\frac{1}{2}$  h.p. machine, though not in the way he means. I got the machine in October and rode it until the end of the year through the most frightful weather with sidecar and passenger for 3,500 miles, and up to 2,500 experienced very little trouble; but after that the engine began to give up, the principal trouble being with the crankpin rivets, which were constantly shearing off. Let me say at once that I do not consider it any discredit to the machine that these troubles should have occurred—it was being called upon to do work for which it never was intended, being constantly driven with the throttle wide open, and I may mention here that it was the constant letters appearing in your paper from those whom I may call the "thousand mile brigade" which induced me to invest in my  $3\frac{1}{2}$  h.p. combination—the impression left on my mind by these letters being that a  $3\frac{1}{2}$  h.p. had any amount of power to spare when pulling a sidecar. I am fully aware of the capabilities of a thoroughly tuned specially selected  $3\frac{1}{2}$  h.p. engine in the hands of an expert. Anyone who saw the wonderful ascent of Glengesh Hill by Hugh Gibson with Bradbury and sidecar and passenger in the Dublin and District M.C.C. 24 hours' trial, could not fail to have been greatly impressed. He made an almost clean ascent, running alongside for about twenty yards when almost at the top—a most meritorious performance when one considers that out of thirteen machines which arrived at the hill only three made clean ascents, amongst those that failed being a big 7-9 h.p. twin two-speed ridden solo. But, unfortunately, we are not all Hugh Gibsons, and therefore I say to sidecarists, have a sufficient reserve of power to allow for an unexpected hill with hairpin bends, a gale of wind, and an engine slightly out of tune. Those who, like myself, use their machines almost entirely for business, have not time to be tuning up every day. Let me say, in conclusion, that I am cordially in agreement with your correspondents who sign themselves "7-9 h.p." and "Loidis."

F. G. TOWNSEND.

### Petrol Consumption.

Sir,—I am rather surprised at the conclusion your correspondent comes to, after summarising the other letters on the matter, that 90 m.p.g. is all that one can expect from a  $3\frac{1}{2}$  h.p. single.

My present mount is a 1912  $3\frac{1}{2}$  chain-driven P. and M. I have ridden it nearly 3,000 miles, and the average mileage is 112 per gallon.

The machine, as you know, is by no means a lightweight—190 lbs. nett—I weigh 13 stones myself, and all the distance has been covered on give and take roads, going anywhere and up anything.

A recent run was 173 miles in Kent and Surrey, and that is about my usual day's run once or twice a week.

Regarding the discussion on gears with reference to petrol consumption, my gears are low, 5 to 1 and 9 to 1, although the latter is practically never used except for starting.

The engine has not been touched, has never given me a moment's trouble, and is pulling just as powerfully now as it did at first, and is just as amenable at slow speeds in traffic.

Transmission troubles, except for the eternal nuisance of lubricating, nil; in fact I have not had the least trouble of any kind. Why can't the P. and M. people and others give us an oil bath gear case for the chains? I rode a Sunbeam push bicycle thousands of miles and never even saw the chain.

Permit me to add the usual disclaimer. H. D. LEE



### The Price of Motor Cycles.

Sir,—As an engineer, with eleven years experience in the motor cycle trade, I read with interest Mr. W. J. Fitchett's letter on the above subject, and have much pleasure in replying to his request for suggestions.

In the first place, there is no doubt about there being a demand for a machine of about  $3\frac{1}{2}$  h.p. at a price below the present £48 to £60 article. Given a reliable machine, the difficulty would be to keep pace with the orders. At the price mentioned, the machine would be within the means of a very large class of buyer, both for business and for pleasure, who is at present absolutely uncatered for, and who looks at a second-hand machine with distrust.

It would be advisable to retain the magneto, even at a slight increase in price, as previous to its general adoption nine-tenths of motor cycle roadside troubles were due to ignition. Nowadays, we never hear of anything but tyres causing delay on a journey, no matter how great the distance. The dry battery, with suitable coil and contact breaker, is a good and reliable ignition, but the public have been educated up to the magneto, and will have nothing else. I have proved this daily in selling second-hand machines of old pattern; in fact, many otherwise good bicycles are absolutely unsaleable until converted to magneto.

Almost the whole of the parts, usually nickel-plated, would be stove enamelled with advantage to user and manufacturer.

The engine should be of dimensions large enough to guarantee long life without extensive repairs. Above all bearing areas should be, if anything, in excess of present day standards. There is no doubt that if in daily use in all weathers, connecting rod bushes require renewing more frequently than is good for the reputation of the machine. This applies to engines of the highest grade.

In the hands of the public, the small lightweight engine requires complete overhauling at frequent intervals to maintain its original horse-power, the working parts being of such unusual dimensions.

Some few years ago I went thoroughly into this subject, and it was only lack of capital that stopped me going into business on my own account to put a machine of this type on the market. With an article built on the right lines there is not the slightest doubt about Mr. Fitchett's venture being an immediate commercial success, and he has the best wishes of  
J. C. HARLEY GILL.

Sir,—The letter in a recent issue on this subject opens up a question of great interest and importance to the majority of motor cyclists.

At the present time we are in the midst of a boom of which the manufacturers are availing themselves to the fullest extent, and one can scarcely blame them for doing so; but at the same time, many are finding the cost of

motor cycling considerably higher than they anticipated, and the growth of the movement, though very rapid, is curtail in consequence. I admit the modern motor cycle is a beautiful piece of work, but do not agree that it is of value for the money. I think that a reduction in price could be made which would still leave a fair trading profit. How is it that many firms manage to buy engines, frame tanks, etc., and assemble a machine with everything of the very best at prices considerably below those charged by most of the big firms who do this work for themselves and save these various profits of different firms? The high prices paid by a motor cyclist for his needs and luxuries seem to me to be most pronounced when he (as I do) requires a two or three-speed gear. I can buy one of the standard three-speed hubs for a push cycle for 25s., but if I want one for a motor cycle I am asked £10 10s. Now I ask, as a matter of commonsense, what is there to justify this enormous difference in price? Of course there is the clutch, a control, and the gear is stronger all through, but surely it should be ample to cover the cost. If a sidecar hub wanted, £2 2s. extra. Why £2 2s.? Surely a little extra strength does not justify this extra charge any more than that a clock should cost any more than a watch. If the possessor of an old machine wishes to put on a counter-shaft two-speed gear, again he is asked to pay £10 10s. for it. Here the price seems even more exorbitant than in the other case, when one considers the comparative simplicity of a two-speed counter-shaft gear.

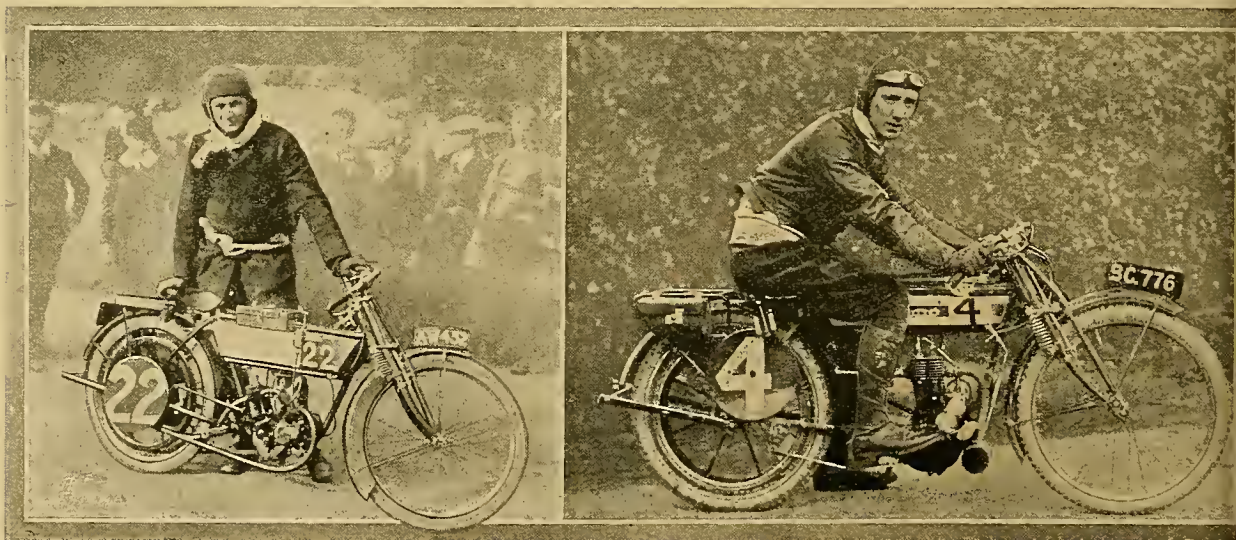
Is there no manufacturer who is wise and bold enough to offer for £5 a reliable, well-made gear of this type with chain drive to counter-shaft and belt by 8in. pulley to rear wheel, which can be simply attached to existing machine on removing the pedalling gear?

There is a huge market awaiting him and undoubted success, provided his gear is simple and reliable. If it can be done at the price, why not? There seems to me to be nothing in the manufacture to prevent it.

So long as manufacturers have to spend huge sums on an army of trade riders, and, possibly, in some cases supply a profit to pay a dividend on an over-capitalised push cycle business, and whilst artificial prices are also maintained by trust methods, so that free trade amongst retailers is prohibited, so long will motor cyclists have to pay these high prices.

It is the history of the push cycle business over again when, as some of us remember, £15 to £20 had to be paid twenty years ago for a decent solid tyred safety, and accessories were priced in proportion. This righted itself in time, and so will the present inflated prices of the motor cycle trade.

How can manufacturers be expected to trouble about price competition when their whole possible output is sold twelve months in advance?  
B.Sc.



JUNIOR T.T. COMPETITORS.

P. W. Owen (2½ h.p. Forward) who finished fifth.

H. Petty (2½ h.p. Singer) seventh to finish. This was the first single round.



### Whose was the First Ascent?

—With reference to my climb up Dinas Mawddwy, I my first ascent at 9.45 in the morning, another at then drove on to Bala, and on the way met Mr. Mills Enfield going to the hill, so I think that it is clear was first. After lunch, on going again with Mr. we met Mr. Mills returning. R. LORD.

### Petrol Consumption.

—No doubt most readers are interested in the letters ring lately in your columns regarding petrol consumption and many, like myself, would be delighted to obtain wonderful results claimed. I would suggest to those that the correspondence would prove more interesting instructive if they would kindly tell us how these results obtained by others. I have keenly followed all that been written on the subject the past few weeks, but apart being told that certain makes of machines have running from 100 to 150 miles on the gallon I have not any wiser in learning how others can do it. It does est altogether with the machine, for we find two nes of the same make giving entirely different results ridden by different riders, showing that much depends e manipulation.

ave lately taken to riding a 5 h.p. Indian, but up to the at I have not been able to get more than 50 m.p.g. ession, spark, and all else are in good order. Now will of our high mileage friends kindly give up the secret, give us some definite particulars of the way to run nically with machines of similar make to their own? A. EASTGATE.

### Should Ladies Race?

—I seem to have "put my foot into it" rather badly, scarcely think that Miss Walker has herself shown the ey which she has found wanting in me. In dealing ny letter she says, firstly, that she did not write to give e. But I never said that she did so write. I said he had taken offence. Again, I wonder how often she up her references when searching for a suitable name ar journalist. Stiggins is, of course, a character from twick Papers." The earlier chapters about him make ar that the only thing he could do really well was to o phenomenal quantities of pineapple rum and hot ed toast.

ally, he is summed up in chapter 45 as one of those e prophets and wretched mockers of religion who, at sense to expound its first doctrines or hearts to feel st impulses, are more dangerous members of society he common criminal." I do not for a moment suppose Miss Walker meant quite all that; possibly it was just e of carelessness, but I think she will agree that I

had every excuse for thinking that she had taken offence. Lady motor cyclists may quite logically maintain that they have as much right to risk life and limb as the men; but on the other hand many ladies are just beginning to realise that the motor cycle is a practicable vehicle.

One or two really serious accidents at hill-climbs, etc., would revive the idea among the indiscriminating—and they are many—that the motor cycle is dangerous, and it does seem that ladies could do a real service to the movement by abstaining from risky work until the lady's machine is a little more firmly established. D. S. HOLMES.

### The Danger of Uncontrolled Dogs.

Sir,—I notice a letter in your issue of June 27th, from Mr. S. H. Merrick, in which the writer states that he suggested the dog's black list "about a year ago." May I remind him that the dog's black list was in operation long before the idea appears to have occurred to him. The scheme was evolved by me, and first saw the light in my contribution to the National Cyclist's Union *Review*, of August, 1909. It was taken up by the N.C.U., and Mr. L. C. Wilks (Gordon House, Woodford Road, South Woodford, Essex) has been hon. secretary of the scheme and keeper of the black list ever since. Dangerous dogs should be reported to Mr. Wilks, who will enter them on his list and advise the owners of their dog's propensities. H. W. BARTLEET.

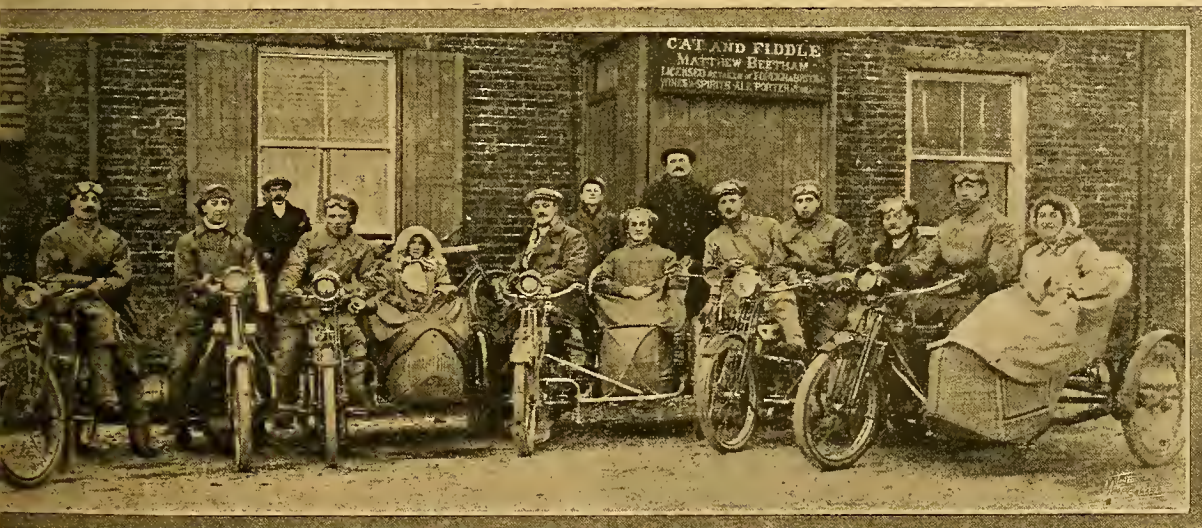
### Jake de Rosier Fund.

Sir,—In your issue of June 27th you ask if a motor cyclist will make a collection on behalf of poor Jake de Rosier. I beg to state that during my visit to the Isle of Man I collected a sum of £5 11s. 6d. for this unfortunate racing man. Many will remember that he came off his machine through no fault of his own at a speed of over ninety miles an hour and will never be able to ride a motor cycle again, hence his living is taken away. I therefore think it becomes every motor cyclist to sympathise and help a fellow sportsman and his young bride. I therefore appeal to all motor cyclists to co-operate with me in this most urgent and needful cause, and therefore propose to open a shilling fund for poor Jake. All riders or others who send me a subscription may feel assured that it will be directed to the right quarter and a receipt for the amount will be sent if desired.

I may add that I know de Rosier very well and always found him a fine sportsman. I had many opportunities of meeting him when he was over here. Others will remember his splendid racing at Brooklands, and I think all will agree with me he was an "artiste" on a motor cycle. Many American riders have sent subscriptions to the Arthur Moorhouse memorial fund, so let us send something to Jake de Rosier. Address to me as under.

T. A. CARTER.

The Purley Motor Cycle Depot, 6, High Street, Purley.

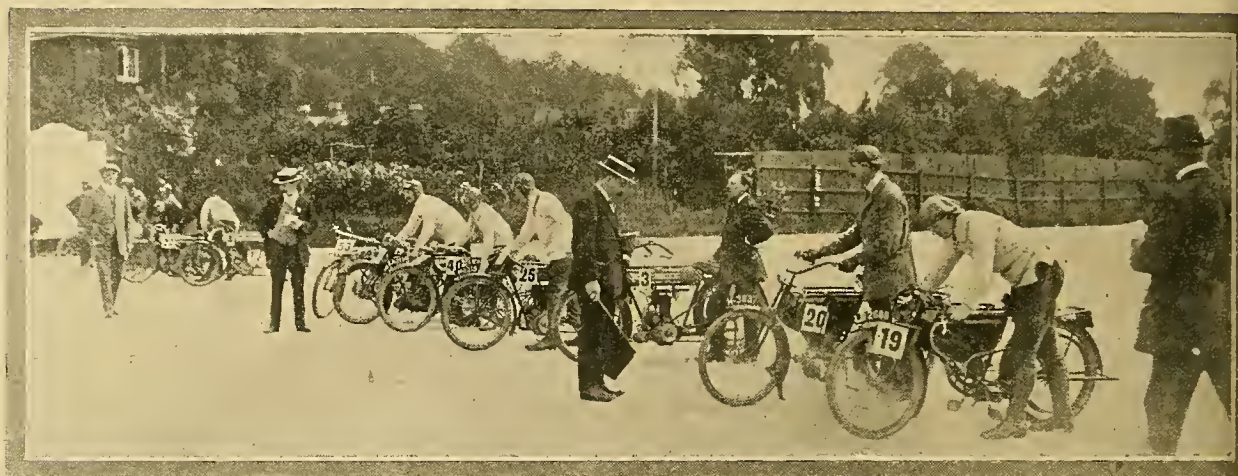


Nottingham motor cyclists outside the "Cat and Fiddle" Inn, en route for Liverpool and the Isle of Man, to witness the Tourist Trophy Races. Mr. E. G. Young has taken a T.T. party to the Island several times.



# M.C.C. Fourth Annual Race Meeting.

A well organised event. A cyclecar wins the car race.



The start of the fourth race, which was for any type of motor bicycle with single-cylinder engine up to 560 c.c.

**T**HE Motor Cycling Club was favoured with a fine day for its annual meeting at Brooklands, and successfully carried out a very full programme. The starts were made with great punctuality, and no accident marred the day's sport. The races all started and finished at the fork, and the finishing straight was not used throughout the day.

The first event was a handicap for single-cylinder touring machines up to 560 c.c., distance three laps, and was supported by a large and representative entry of sixteen. W. Cooper's Bradbury was very fast, but, unfortunately, the engine seized on the last lap just as he was picking up the winners. Result:

Rider and machine.	Bore and stroke.	H'cap M. S.	Time M. S.	Speed m.p.h.
1. N. O. Soresby (1-cyl. Rudge)	85 x 88	0 45	8 5	60.54
2. D. H. Noble (1 Rover)	85 x 88	0 12		
3. H. C. Mills (1 Green-Precision)	85 x 88	scr.		

H. de Vack (Motosacoché) was unlucky in having his belt jump off at the start, but both he and O. L. de Lissa on a similar machine ran with the utmost regularity throughout the day, and we unofficially timed their little mounts to be lapping at over 38 m.p.h. regularly. Karslake's Rover was running in full touring trim with belt guards, etc., the only alterations being racing bars and a neat foot-controlled oil pump.



E. B. Ware (Zenith), wins the sidecar race from F. W. Barnes on a similar machine.

## Brough Averages Over 66 m.p.h.

Second event, handicap for touring twins between 4 and 1,000 c.c.; distance, three laps. Result: Time. Speed.

1. G. Brough (1-cyl. Brough)	85 x 85	scr.	7 25	66
2. R. E. Guest (2 Matchless)	85½ x 85	0 12		
3. H. H. Huckle (2 Zenith)	76 x 54½	1 12		

Brough had an easy win. He is comparatively a novice at Brooklands racing, but rode beautifully, and with a little more experience would be a very formidable opponent of our leading track riders. He was handicapped by having touring handle-bars and a hand-operated oil pump, but 18 h.p. twin Brough appeared to be the fastest machine on the track. Huckle had some difficulty in getting away, and thus lost a good deal of his handicap.

The fourth event was a handicap for any single-cylinder machine up to 560 c.c.; three laps. Results:

1. T. Peachy (1-cyl. Premier)	85 x 88	2 12	9 0	54.
2. R. Croucher (1 Kerry-Abingdon)	85 x 88	2 30		
3. F. C. North (1 Ariel)	86½ x 85	0 51		

Croucher's machine ran very well throughout and looked like a winner. Peachy had trouble with his tank, but nevertheless made a fine performance, his auxiliary exhaust Premier being extremely fast. Both Mills and Garrett, their T.T. Green-Precisions were very fast, but both, strangely enough, suffered with plug trouble, though their performances in the Isle of Man would not have led one to expect this. Soresby's Rudge was going very well, and Barn (Zenith) obtained a great speed, but was unable to pick his handicap.

## The Lightweight Race.

Handicap, any type of motor cycle up to 350 c.c. Distance three laps. Results:

1. F. W. Barnes (1-cyl. Zenith)	76 x 65½	scr.	9 30	51
2. W. A. Jacobs (1 Singer)	69 x 80	0 18		
3. P. C. Patterson (2 Humber)	60 x 60	0 30		

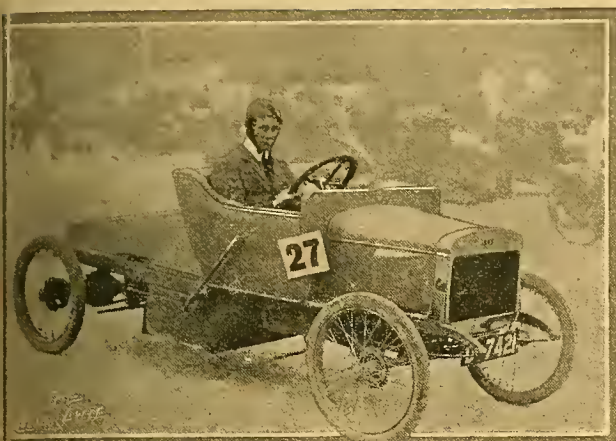
Barnes won easily from the scratch mark.

The sixth event was a handicap for any type of motor car. Three laps. Results:

1. W. T. Wainwright (4-cyl. Rover)	75 x 130	2 54	10 16	48
2. C. Gordon Watson (4 F.N.)	82 x 120	1 48		
3. C. M. Keiller (4 Vauxhall)	90 x 120	scr.		

J. T. Wood drove his G.W.K. cyclecar (2m. 30s. std.) in this race, but was troubled with a choked carburettor. Keiller made up for it, however, later in the afternoon winning the Albert Brown Challenge Trophy on a similar machine.





C. M. Keiller (G.W.K. cyclecar), winner of the Albert Brown Trophy.

The seventh event was a handicap for any motor cycle between 400 and 1,000 c.c.; four laps. Results:

1. R. Croucher (1-cyl. Kerry-Abingdon) ... 85×88 4 4 12 10 55.64
  2. S. F. Garrett (1 Green-Precision) ... 85×88 1 36
  3. E. B. Ware (2 Zenith) ... 76×54½ 1 36
- In this event G. Brough (scratch) rode a very sporting race, but only just failed to get a place. The Rovers ridden by Able and Newsome appeared very fast. Milner's Indian did not seem to be going its best.

### Two Lap Sidecar Race.

Handicap for single-cylinder machines with sidecars; two laps. Results:

1. R. Croucher (1-cyl. Kerry-Abingdon) ... 85×88 1 10 7 42 42.3
  2. E. J. Watson (1 Swift) ... 85×88 0 56
  3. F. C. North (1 Ariel) ... 86½×85 0 34
- North, who was troubled with his gears slipping out of engagement, made a very close finish with Watson.
- The ninth race was a handicap for any twin-cylinder motor cycle with sidecar; two laps. Results:
1. E. B. Ware (2-cyl. Zenith) ... 76×54½ 2 10 7 21 44.39
  2. F. W. Barnes (2 Zenith) ... 90×77½ scratch
  3. F. C. Haward (2 Zenith) ... 76×85 1 10
- F. W. Barnes made a splendid show. He started scratch, travelling at a great pace, nearly caught E. B. Ware, but had 2m. 10s. start.

### A Cyclecar wins the Brown Trophy.

The tenth race was a ten lap handicap for cars up to 30 h.p. (R.A.C.) for the Albert Brown Challenge Trophy. The M.C.C. appears to treat cyclecars and cars as one type of vehicle, for the G.W.K., which is a cyclecar, competed in two of the car events and won the challenge trophy. Results:

1. C. M. Keiller (2-cyl. G.W.K.) ... 86×92 33 36 48.53
2. F. J. Jenkins (4 Rover) ... 75×130 scratch
3. S. G. Cummings (4 Crespelle) ... 75×150 scratch

The G.W.K. was a late entry, but made a particularly fine performance. The win, however, was extremely lucky, as the machine crossed the line with its engine stopped owing to a choked jet. C. Gordon-Watson's F.N. looked like a winner, but something went wrong in the first lap, which put him out of the race.

The eleventh item was the club motor cycle championship, a handicap for any touring motor cycle, for the "Harry Smith" gold Challenge Cup. Result:

1. R. E. Guest (2-cyl. Matchless) ... 85½×64 2 40 25 23 63.95
2. H. C. Mills (1 Green-Precision) ... 85×88 2 40
3. E. B. Ware (2 Zenith) ... 76×54½ 4 0

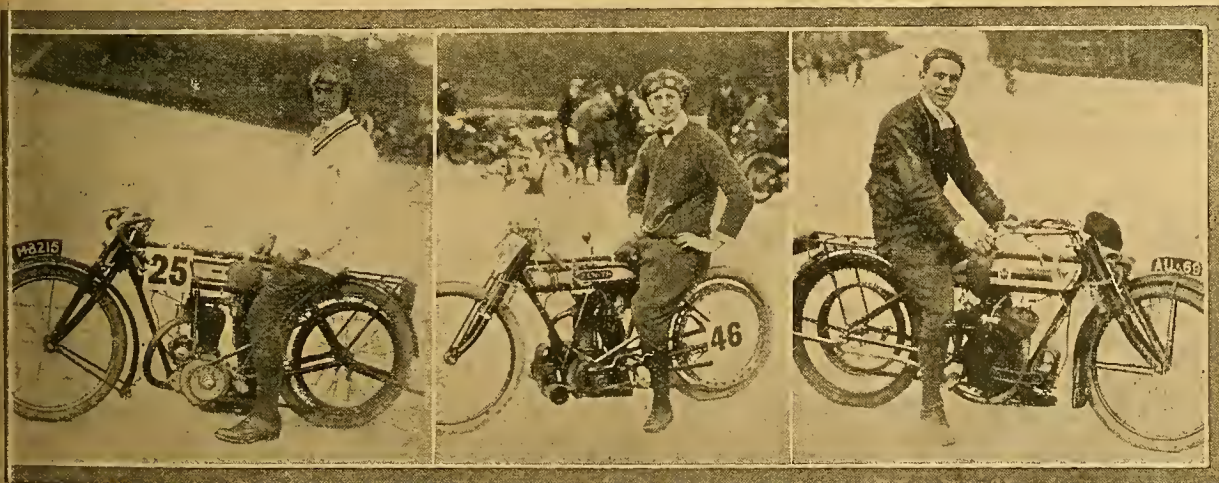
This event drew thirty entries, and the large number of runners somewhat complicated lap scoring. Several competitors were making very fast laps, notably Barnes, Soresby, Brough, North, and Garrett. They were, however, unable to pick up their allotted handicaps.

So ended a very successful and well organised meeting. Messrs. F. T. Bidlake and A. V. Ebbelwhite (timekeepers) worked hard, and were most prompt with their results, and the organisation could hardly have been improved upon. There was some little difficulty in keeping spectators off the course at the fork, but W. Cooper officiated in his usual keen and masterly way, and accomplished wonders.

At the close of the meeting, a few thoughtless people careered round the track in the wrong direction, thus causing a good deal of unnecessary trouble and annoyance.

### INTER-CLUB TEAM COMPETITION.

The Woolwich, Plumstead, and District Motor Club is arranging an inter-club team trial, which will take place on the 20th inst. There are nine riders in each team, some with sidecars. There is apparently no hard and fast rule regarding the composition of the teams, as we notice that while one club has entered a team consisting of five sidecars and four singles, three teams have no passenger machines at all. The clubs which will take part are Brookdale M.C. (Catford), Purley and District M.C., Putney and District M.C., South-East London M.C.C., Streatham and District M.C.C., and Woolwich and District M.C.



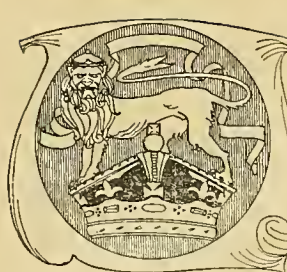
THREE WINNERS AT THE M.C.C. RACE MEETING.

(1.) N. O. Soresby (Rudge), winner of first race.

(2.) F. W. Barnes (Zenith), winner of lightweight event.

(3.) G. Brough (8 h.p. Brough), who won the second race and attained the fastest speed of the day.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

July 11th	...	9.13 p.m.
" 13th	...	9.11 "
" 15th	...	9.9 "
" 17th	...	9.7 "

### At the M.C.C. Race Meeting.

We noticed Harry Bashall, fresh from his Isle of Man victory, among the spectators at the Motor Cycling Club's meeting at Brooklands. The G.W.K. cyclecar was seen to climb the test hill in good style with four passengers.

### Indian Machines and Racing.

An American contemporary says that "there are strong rumours going the rounds in America that the Hendee Manufacturing Co. are going to retire from racing altogether as a result of poor Moorhouse's untimely end."

### 60 Miles in 60 Minutes on a Lightweight.

Who will be the first to cover sixty miles an hour on a 350 c.c. Junior machine? The matter is at present occupying the attention of riders of this class of machine, and at least one attempt may be expected very shortly. Meanwhile, S. Wright's hour record of 58 miles 1,408 yards on a 2½ h.p. twin Humber is in jeopardy.

### Traffic Census.

Our contemporary *Motor Traction* has a yearly census taken of the total traffic passing over Putney Bridge between 9 a.m. and 9 p.m. on a Sunday in each year. The last count was on Sunday, June 30th, and shows a remarkable increase in the number of motor cycles. In 1911, one hundred and ninety-three motor cycles were counted; this year the total is three hundred and forty-seven. Of this number, one hundred and forty were sidecars. The remaining passenger machines, to the number of five, were made up of tricar and other three-wheelers.

### Scottish Six Days' Trials.

The following additional entries have been received for the above trial, bringing the total number to eighteen: R. Lord (6 h.p. Rex), Rev. P. W. Bischoff (3½ h.p. Rudge), F. C. North (3½ h.p. Ariel), Eric B. Keiller (3½ h.p. Rudge), W. Pratt (3½ h.p. P and M.), and G. T. Gray (3½ h.p. Rudge). There has also been a slight alteration in the route. On the third day the section from Braemore via Ullapool to Lairg has been cut out, and riding north the route will be Dingwall, Ardgay, Lairg, to the North Coast round by Tongue and Thurso. Then on the forth day down the East Coast via Helmsdale, and to Garloch via Dingwall Braemore, and Little Gruinard.

### British Machines Barred.

A German club, not 100 miles from Munich, recently announced a 200 miles reliability run. Owners of English machines were informed, on making application for entry forms, that as English-built motor cycles would reduce the chances of the home manufactured article, their entries could not be accepted. What would be said if we were to adopt such a policy in this country?

### A Trial Trip on a Williamson.

Recently, at the suggestion of Mr. W. Williamson, the maker, we enjoyed a short trip in a Williamson sidecar, with 8 h.p. Douglas twin water-cooled engine. The bicycle, which is an enlarged edition of the 2½ h.p. Douglas, we have already illustrated. The machine, as may be supposed, has ample power, and climbs hills in splendid style. We surmounted a quarter-mile rise of approximately 1 in 7 on top gear with consummate ease, the engine pulling with certainty even at the summit when the speed had fallen low. It is smooth running, silent, and has a fine turn of speed. The Williamson sidecar is sure to appeal to that section who have been used to a T.T. bicycle and now desire to take a passenger.

### SPECIAL FEATURES.

THE SUCCESS OF THE TWIN.  
TOURIST TROPHY LESSONS.  
PARIS-LIEGE RUN.  
M.C.C. BROOKLANDS MEETING.

### Two Trials on Saturday Week.

There are two open reliability trials fixed for Saturday, July 20th. The Birmingham M.C.C. will hold its postponed trial for passenger machines over a course of 180 miles, embracing the Cotswold and the North Middlesex M.C.C. will hold a twelve hours' trial for solo and passenger machines from Hampstead to Stratford-on-Avon and back.

### Jake de Rosier Fund.

With reference to "Ixion's" suggestion that a collection should be made in the Isle of Man for Jake de Rosier, Mr. T. J. Carter, of the Purley Motor Garage, informs us that he collected £5 11s. 6d. mostly in one shilling donations. The sum will be forwarded to *The Motor Cycle Illustrated* of America. We have received from Mr. William Macneill, Edwinstown, Llandilo, South Wales, a cheque for £2 for de Rosier, which we are forwarding direct to him at the Crocker Street Hospital, Los Angeles, California.



M.C.C. FOURTH BROOKLANDS MEETING.

D. H. Noble (Rover) and H. C. Mills (Green-Precision) neck and neck in the first race at the M.C.C. race meeting at Brooklands last Saturday.



**Gibson's Condition.**

The latest information concerning John Gibson, whose sad accident we reported last week, is of a quite satisfactory nature, so his doctor states. He is now getting quite well.

**The Dutch Trial.**

Both last year's and this year's T.T. winners will take part in the Dutch Trial on August Bank Holiday, O. C. Odrey having decided to accompany F. Applebee, who is one of the chosen secretists.

**Day of the Associated Clubs at Brooklands.**

There will be two motor cycle events at its meeting—(1) Motor cycle short distance handicap (distance about 5½ miles), the winner will receive a cup presented by *The Motor Cycle*; and (2) Motor cycle inter-club team race (distance about 5½ miles). Each team to consist of one single-cylinder machine up to 500 c.c., one multi-cylinder up to 750 c.c., and one passenger machine up to 1,000 c.c. The winning club will receive a trophy and each member of the team a silver Arkomer medal.

**Grand Prix de France.**

The Motor Cycle Club de France has definitely fixed on August 25th (Sunday) the date of its great race of 450 kilometres, embracing the following route: Fontainebleau, Arbonne, Achères, Vry, back to Fontainebleau. It would appear that the M.C.F. has taken up the question of a Grand Prix race where the M.C.F. has dropped it. There will be classes for all machines from 250 c.c. to 1,300 c.c., the latter being for sidecars. Entry forms and full particulars can be obtained from the M.C.F., 48, rue St. Ferdinand, Paris.

**Track Racing at Cambridge.**

At the Cambridge Town and County Cycling Club's sports on the 4th inst., there was a five-mile motor cycle handicap. The final heat of this event, in which three competitors took part, viz., Hodgkinson (Tottenham), 350 yards, Potter (Cambridge), 400 yards, and Harry Martin (Croydon), scratch, proved the finest race ever seen in Cambridge. As the riders flashed over the line there was not a machine's length separating any of the riders. Martin finished first, but was disqualified for passing on the inside, the race being awarded to Hodgkinson.

**Engine Speeds in the T.T.**

It is interesting to note the minimum average revolutions per minute of the engines used by the leaders in the T.T. races, as it conveys some idea of the strenuous nature of the test of engines. Ignoring stops, and also the fact that low gears were frequently in operation, the figures show that the minimum revolutions during the whole of the race were:

SCOTT (F. A. Applebee).—Revolutions per minute, 1,873; total (3 to 1 gear), 5,000.

TRIUMPH (J. R. Haswell).—Revolutions per minute, 2,420; total (4 to 1 gear), 3,500.

DOUGLAS (W. H. Bashall).—Revolutions per minute, 2,478; total (4½ to 1 gear), 2,500.

**FUTURE EVENTS**

- July 15.—Irish Open End-to-end Reliability Trial.  
 „ 18 & 20.—South Wales A.C. and Cardiff M.C. Open Hill Climb at Caerphilly  
 „ 18.—Tatnall & District M.C.C. Open Hill Climb.  
 „ 20.—Birmingham M.C.C. Open Cyclecar Trial.  
 „ 20.—B.M.C.R.C. Race Meeting.  
 „ 20.—Liverpool A.C.C. Open Speed Trials.  
 „ 27.—R.A.C. Associates' Gala Day at Brooklands.  
 „ 27.—Oxford M.C.C. Open Speed Trials.

**A Real Lightweight.**

A 2½ h.p. lightweight, weighing about 90 lbs. sounds very attractive. Such a machine is being built, but it is not intended for ordinary touring purposes. A special Douglas machine has been put in hand for S. L. Bailey for short distance races. It will be reduced in weight to the finest limits, and will be equipped with single tube tyres. Bailey anticipates that it will attain a speed of 65 m.p.h.

**Cyclecars at Olympia Motor Cycle Show.**

The Motor Cycle Manufacturers' Union, who, in conjunction with the Society of Motor Manufacturers and Traders, are the organisers of the Olympia Motor Cycle Show, have decided to admit for exhibition purposes all cyclecars which come within the R.A.C. and A.C.U. definition, viz., chassis weight unladen with tyres 6 cwt., engine capacity not exceeding 1,100 c.c. This will be interesting news to many manufacturers of cyclecars, as there has been some doubt as to whether any four-wheeled motor cycle vehicles would be admitted to the motor cycle show at all.

**A Good Response.**

With the British contribution of over £15, the Jake de Rosier fund has now reached a total of over £100.

**A Difficult Test.**

There are thirty entries for the Coventry and Warwickshire Motor Club's reliability trial for the Manville Trophy next Saturday. The course is of approximately 180 miles, and includes eleven difficult hills.

**Our Recommended Formula.**

The formula recommended by *The Motor Cycle* for hill-climbing competitions is being largely adopted. It is now being used in South Africa, whilst Australian clubs adopted it some time ago, and, of course, the leading clubs at home have used it for a long time. The formula is:

$$\frac{C \times T^2}{W}$$

C = capacity.

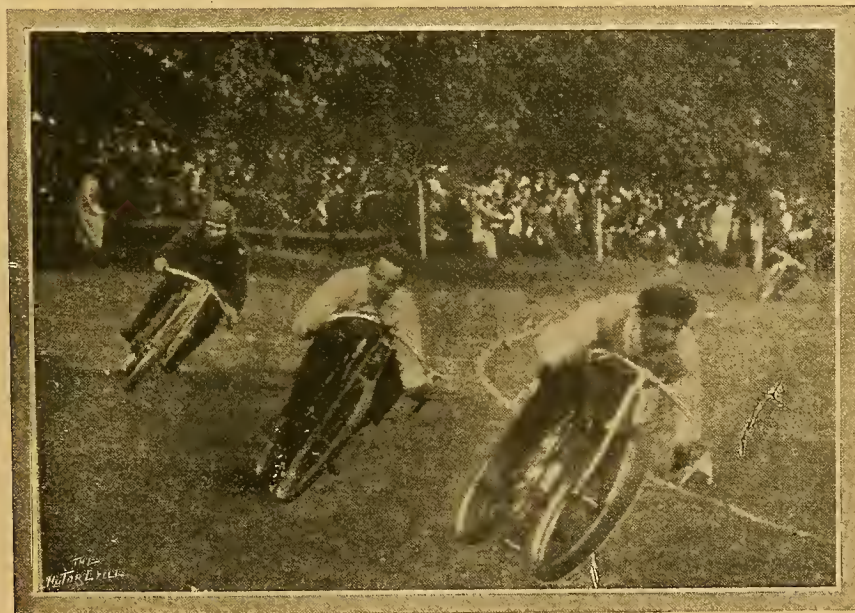
T = time.

W = weight.

Squaring the time is found to suit late models of motor cycles, which are so fast on hills, much better than the old A.C.U. formula.

**B.M.C.R.C. Fifth Members' Meeting.**

The next members' meeting will take place on the 20th inst., when there will be five events as follow: The Third 1912 Time Trials, the Junior Five-lap Scratch Race, the Senior Five-lap Scratch Race, All-comers' Five-lap Handicap, and Brooklands Test Hill-climb. For this meeting entries close on Saturday next. On August 24th the Brooklands T.T. Race will be held, starting at 2 p.m. Prizes are offered for both senior and junior competitors as follows: First, a silver cup value £5 5s.; second, club's gold medal; third, silver medal; fourth, bronze medal. Entrance fee, non-members 10s.; members 5s.



AN EXCITING FINISH AT THE CAMBRIDGE SPORTS.

A five miles handicap was included in the Cambridge Town and County Cycling Club Sports. Our photograph shows the final heat, in which all finished within a machine's length. The riders are H. Hodgkinson leading, H. Potter second, and Harry Martin third.



## THE PARIS-LIEGE RUN.

THE above contest, which its organisers, *L'Aero* and the Liège M.C., have called "Le Petit Londres-Edinbourg," was run off on Sunday last between Paris and Liège. The route was *via* Rheims, Sedan, Bouillon (hill-climb), Laroche, and Aywaille, a total distance of 250 miles. The competitors were divided into five classes, as follows: 250 c.c., 350 c.c., 500 c.c., above 500 c.c., and sidecars. The following average speeds had to be maintained: Class 1, 17.4 m.p.h.; Class 2, 19.5 m.p.h.; Class 3, 22.3 m.p.h.; Class 4, 24.8 m.p.h.; sidecars, 22.3 m.p.h. Competitors were penalised one mark for each minute early or late. All machines were sealed on the Saturday afternoon at the garage Gerber from 2 to 6 p.m., and had to conform to touring requirements, and to be fitted with spring forks, efficient mudguards, two brakes, luggage carrier, rear wheel stand, lamp, and generator; silencers were compulsory, but a cut-out could be used. Handle-bars were not allowed to extend below the top tube of the frame.

The entries, which numbered ninety-two, included Vernon Taylor and W. D. South (Rudges), A. D. Arter (James sc.), and A. J. Dixon (Singer).

English machines ridden by foreigners totalled seven: New Hudson, two; Rudge, three; B.S.A., one; and Triumph, one. England was therefore represented by eleven machines.

Other countries were represented by their various makes as follows, the riders being mostly members of the Antwerp and Liège clubs, Belgian Moto Club, French Touring

Moto Club, A.C.C.F., and M.C.C.F.: Twenty - one N.S.U.'s were entered in the competition; F.N., fifteen; Wanderer, thirteen; Sarolea ten; Alcyon, eleven; Peugeot three; Clément, three; Moto sacoché, three; Scaldis, two.

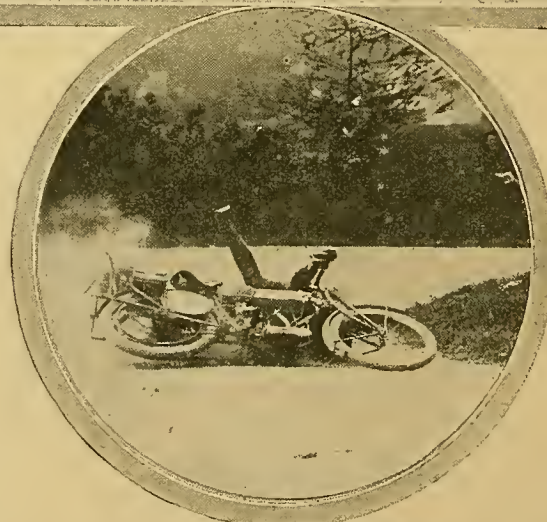
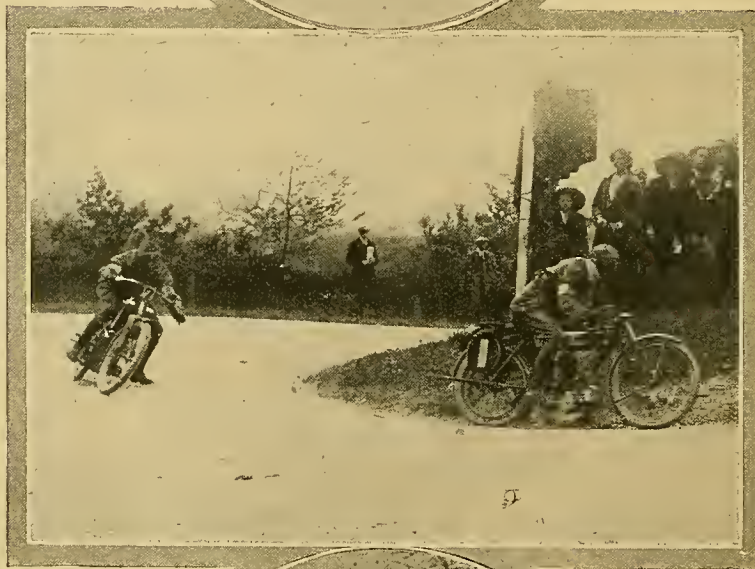
At 2.30 a.m., competitor in Class 1 were sent off in groups of four from Villiers sur-Marne. The other classes followed at intervals of one hour, the sidecars being despatched at 5.30.

The combined speed trial and hill-climb at Bouillon commenced at a quarter to two, and consisted of a section of level running, followed by a climb of 1 in 15 to 20; distance, two kilometres, flying start.

Seventy - five of the ninety-two entrants left Villiers sur-Marne on Sunday morning last, and of that number fifty-eight arrived at Liège the same evening without loss of marks. The event was voted on a sides an unqualified success. In consequence of the late arrival of most of the riders and the long

calculations necessary to arrive at the results of the hill-climbing test at Bouillon the names of the winners of the five classes are not available this week.

The first arrival at Liège was Everaers (N.S.U. 500 c.c.), followed by Pire (Sarolea), and Thoen (four-cylinder F.N.), the fourth arriving being Milly (B.S.A.), sixth A. J. Dixon (Singer), seventh Cussac (Wanderer), eighth Chartier (Wanderer). The two English riders of Rudge, Vernon Taylor and W. D. South, arrived thirty-eight and thirty-ninth, A. D. Arter (James sidecar) forty-third and Gutteret (Rudge) forty-eighth.



THE T.T.—CONTRASTS IN CORNERING.

1. S. L. Bailey (Douglas) in the first round of the Senior Race has a spill at the Ramsey hairpin. 2. F. A. Applebee (Scott) overtaking J. R. Haswell (Triumph) at the corner in the last round of the Senior Race. 3. A. Kirk (Triumph) in a peculiar attitude on the hairpin.



## Club Competition Results.

### Speed Trials at Saltburn.

The motor cycle race at Saltburn speed trials, on Saturday last, was won by G. W. Phillips, riding a 5 h.p. Blumfield.

### Gloucester M.C.C.

A 100 miles reliability trial was held on the 4th inst., the course embracing Chepstow, Ross, and Malvern. There were nineteen competitors, the leaders being: 1, B. F. Peplow (Matchless sc.), error 57s.; 2, W. B. Gibb (Douglas), error 1m. 10s.; 3, P. R. Currell (Rudge), error 2m. 17s. The first and second won the silver cups offered for the best passenger and solo machine respectively.

### Haverstock M.C.C.

A speed-judging contest took place on the 7th inst., the winners being: 1, H. Moliver (Rudge multi and sc.); 2, A. Lunnon (3½ Zenith and sc.); 3, W. Bishop (2½ Brown); 4, D. Ackland (Rudge multi and sc.).

A petrol consumption trial will be held on the 21st inst., and particulars may be obtained from the hon. secretary, Mr. H. Moliver, 81, Prince of Wales Road, N.W.

### Dublin and District M.C.C.

The Dublin and District Motor Cycle Club held a hill-climbing competition at Ballymacroe Hill on Saturday last. There were three classes, and in addition to an award for fastest time in each, there was a prize on A.C.U. formula. The results in the three classes were as under:

#### CLASS A.—Under 340 c.c.

		Time. m. s.	Fig. of Merit.
1.	W. G. Greene (2½ A.J.S.)	2 6	154
2.	W. F. Parker (2½ Douglas)	2 6	226

#### CLASS B.—Under 520 c.c.

1.	F. J. Walker (3½ Rudge)	1 42	601
2.	T. E. Greene (3½ Rudge)	1 5	650
3.	O. G. Price (3½ Rudge)	1 8	661

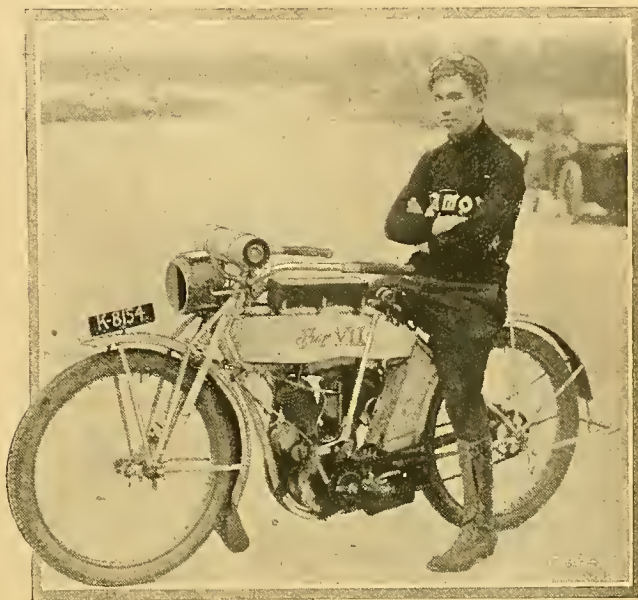
#### CLASS C.—Over 520 c.c.

1.	J. J. Harvey (5 Bat)	1 0	811
2.	B. B. Harvey (7-8 Bat)	1 2	1023

### Merthyr M.C.C.

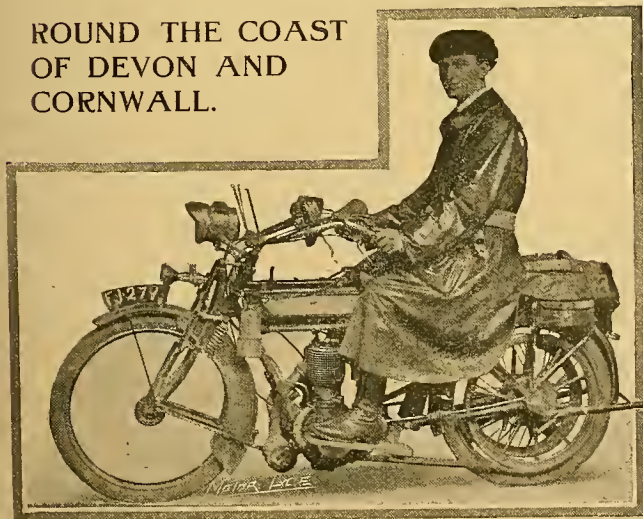
A hill-climb was held on the 4th inst. at Penydyryn Hill. Class I. 1, J. Rogers (Rudge); 2, I. E. Lewis (B.S.A.); 3, D. Williams (Bradbury).

Class II. 1, I. E. Lewis (B.S.A.); 2, D. Williams (Bradbury); 3, J. Rogers (Rudge). Fastest time of the day was made by J. Rogers.



H. A. Shaw, of Illinois, U.S.A., on his Thor VII. at Brooklands last Saturday. He is touring Europe. The machine illustrated is one of the best known in the States.

## ROUND THE COAST OF DEVON AND CORNWALL.



The twenty-four hours' reliability trial recently held by the Exeter and District M.C.C. resulted in P. Pike (3½ h.p. Humber) and six other competitors finishing within schedule time. It was therefore decided to put the septet to a further trial to determine the winner. In the latter trial a difficult course of 130 miles in the Western Counties was covered, and included the notorious Porlock Hill, the time allowed being six and a half hours. Mr. Pike, riding his Humber, was ultimately declared winner, and secured the Hancock Silver Cup.

## PARIS-LIEGE RUN.

### LIST OF GOLD MEDAL WINNERS.

At the moment of going to press we have received a list of the gold medal winners in the above run, which are as follow:

#### CLASS I.—250 c.c.

Lambelin (Scaldis)	Laloup (Alcyon)
Marechal (Alcyon)	Cardol (Alcyon)
Paguay (Alcyon)	Gaussin (Alcyon)
Simon (Wanderer)	

#### CLASS II.—300 c.c.

Beer (F.N.)	Greame Fenton (Clément)
Poznensky (Sarolea)	Golaz (Clément)
Devaux (Peugeot)	Lacroix (Peugeot)

#### CLASS III.—500 c.c.

A. J. Dixon (Singer)	Mathot (Wanderer)
Vernon Taylor (Rudge)	Dewaele (F.N.)
W. D. South (Rudge)	Dedroog (F.N.)
Pire (Sarolea)	Defays (Wanderer)
Thoen (F.N.)	Mathot (N.S.U.)
Lassois (Sarolea)	Touchet (Wanderer)
Foubert (N.S.U.)	Corombelle (F.N.)
Cassac (Wanderer)	Berens (N.S.U.)
Collin (Sarolea)	Colette (Wanderer)
Delune (N.S.U.)	Lambotte (Wanderer)
Cardol (N.S.U.)	

#### CLASS IV.—Twins.

Janssens (N.S.U.)	Devergraum (N.S.U.)
Lamborelle (N.S.U.)	Pierard (N.S.U.)
Dupont (N.S.U.)	

#### CLASS V.—Sidecars.

A. D. Arter (James and sidecar)



# MILITARY MOTOR CYCLING NOTES.

By "CELERITER."

**M**Y remarks this week will be brief, but I venture to think they will be very much to the point. I have it on the very best authority that within the next few months the military history of the motor cycle will advance by leaps and bounds, and I hope in the course of the next week or two to indicate the lines along which progress will be made.

For some months now a few active and intelligent brains have been devoting much time to studying the possibilities of the motor cycle from the military point of view, and the conclusions arrived at will be as astoundingly novel as they will be interesting, not only



**THE HULL TEAM.** Left to right, Sergt-Major Evans (2½ h.p. Centaur), J. A. Latze (Matchless), W. T. Tarnfield (Rex), G. McWaine (Matchless), and W. Jennison (Triumph).

to military men throughout the world, but to all motor cyclists. The confidential notes that I have before me open up totally new fields to the motor cyclist—fields which, so far as I am aware, have hitherto been untouched, even in the imagination of our most fictitious writers. Whether these fields will prove fecund is another matter, but the outlines which I hope shortly to make public are at least thrillingly novel and totally original.

## The Legion Mobilisations.

The authorities have been much impressed by the splendid achievements of those who have taken part in the various mobilisation trials organised by the Legion; they have succeeded in the object for which

they were instituted, and have disproved many of the pet fallacies entertained by those who did not know. It now only remains for our motor cyclists to come forward in their thousands and join the Legion of Motor Cyclists, which body is rapidly building up an organisation of national importance that must eventually earn the recognition which it deserves.

Those members of the Legion who have not yet provided themselves with the official badge are requested to do so at once by applying to the Hon. Secretary, 128, Jermyn Street, W., enclosing 1s. 4d. to include postage. The first issue is rapidly becoming exhausted, and some time must elapse before the next issue can be struck. In the meanwhile some important developments are likely to occur, and those Legionaries who have neglected to provide themselves with badges may well have cause to regret their tardiness.

## The Third Mobilisation Test.

The third mobilisation test was held at Nottingham on Sunday last, and this time was in the nature of a team test, an organising officer selecting a rendezvous for each team. In connection with the test, only one brief reference was published in this journal, but the response was excellent. Prompt to the stroke of 1 p.m. the whole of the Cheshire team arrived in the Nottingham Market Place, which soon presented an animated scene as members of the Hull team arrived, followed by sections from Peterborough, Manchester, Coventry, Bradford, York, and elsewhere. The Cheshire team, under Commander J. J. Darlow, made the best performance. The test was voted most enjoyable by all the participants.

## Autumn Manœuvres.

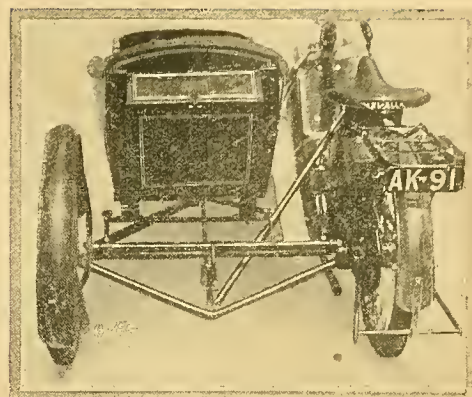
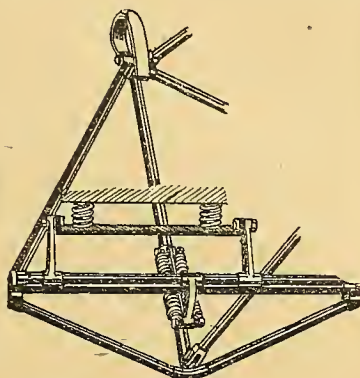
This year's Army manœuvres are to take place in the vicinity of Cambridge and Thetford from the 13th to 20th September. The War Office has already approached the Auto Cycle Union to provide motor cyclist orderlies for the umpires and directing staff, but the Legion of Motor Cyclists will furnish all riders required for the combatant forces from amongst its own members. Those motor cyclists, therefore, who are not already members and are desirous of taking an active part in the manœuvres, are advised to become members of the Legion.



A group of motor cyclists who participated in the third mobilisation test, assembled in the Nottingham Market Place.



## A Run on a Scott Sidecar.



## THE NEW SCOTT SIDECAR WITH PATENT SUSPENSION.

(1.) Mr. and Mrs. Eric Myers, competing in the Douglas gymkhana on a Scott.

(2.) The special straight tube frame showing method of springing.

(3.) Rear view showing dummy axle, also frame tubes. The sidecar is attached to the bicycle at four points.

**A** PATENT has been taken out by Mr. Alfred A. Scott for a special form of sidecar frame with an entirely original method of springing. The first model was shown to us by Mr. Eric S. Myers, of Bradford, who will market the device. The sidecar body is slung on a bowed laminated spring in front, and, in addition to being supported on short spiral springs at the back, is mounted on bell crank levers and an auxiliary axle, the movement of which is con-

trolled by long spiral springs. Straight tubes are used throughout, and the sidecar is attached to the motor cycle at four different points, viz., at the steering head, base of crank case, seat tube, and chain stay. Mr. Myers took us a run over some of the most bumpy surfaces around Douglas, and no matter at what speed we travelled there was a total absence of bumping or jar. A run on a Scott sidecar is an experience to be remembered.



## THE MOBILIZATION TEST.—THE CHESHIRE TEAM, ALL OF WHOSE MEMBERS ARRIVED ON THE STROKE OF 1.0 P.M.

Right to left J. J. Darlow (commander, Rex), A. Stubbs (Precision), H. Stubbs (Triumph), E. C. Jensen (Triumph), C. Massasey (Triumph), J. J. Cockson (Matchless), W. H. Williams (Zenito), T. E. Leigh (Triumph), and C. R. Sprague (Triumph).

## TRIALS IN NEW ZEALAND.

The fourth annual two-day trials arranged by the New Zealand M.C.C. resulted:

## RELIABILITY TRIALS.—LIGHTWEIGHTS.

Rider and machine.	Fig. of merit.
1. C. Wright (2½ A.J.S.) ... ..	192.4
2. J. Beck (2¾ Douglas) ... ..	152.7

## HEAVYWEIGHTS.

1. V. Sutherland (3½ Triumph) ... ..	170.2
2. J. Hall (3½ Rudge) ... ..	154.4

## PRIVATE OWNERS.

1. R. Burn (3½ New Hudson) ... ..	198.2
2. J. V. Wilson (3½ P. and M.) ... ..	184.6

## HILL-CLIMB.—LIGHTWEIGHTS.

	Time.	
1. C. Wright (2½ A.J.S.) ... ..	480s.	459.5
2. T. B. Rhodes (2¾ New Hudson) ... ..	540½s.	479.9

## HEAVYWEIGHTS.

1. V. Sutherland (3½ Triumph) ... ..	466½s.	611.1
2. A. B. Collin (3½ Triumph) ... ..	—	651.3

## PRIVATE OWNERS

1. R. Burn (3½ New Hudson) ... ..	565s.	454.3
2. J. V. Wilson (3½ P. and M.) ... ..	433s.	507.3

## PETROL CONSUMPTION.—LIGHTWEIGHTS.

1. C. B. Rhodes (2¾ New Hudson) ... ..	42.4
2. C. Wright (2½ A.J.S.) ... ..	39.4

## HEAVYWEIGHTS.

1. J. Boucher (3½ Rudge) ... ..	39.4
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## PRIVATE OWNERS.

1. J. V. Wilson (3½ P. and M.) ... ..	58.2
2. G. E. Gibbs (3½ Rudge) ... ..	39.8

## BIDWELL BARTON.—CHAMPIONSHIP CUP.

1. W. Wilson (5 Indian) ... ..	189.4
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## CLUB NEWS.



## WINNERS OF THE AUSTRALIAN SPEED TRIALS.

F. R. Limb (3½ Calthorpe), who won his class riding the only Calthorpe entered. Speed 53½ m.p.h. A. Bartholomew (6 h.p. "Rova"-Jap), seen on the right, was winner of the twin class. His speed was 59 m.p.h.

## Herts County A.C. (Motor Cycle Section).

A speed-judging competition was held near Sandridge on the 6th inst. Results: 1, A. K. Wells (Triumph), error 6s.; 2, R. H. Batchelor (Wanderer) and F. J. Beard (Triumph), 7½s.; 4, A. N. Guttridge (Rudge), 8½s. The slow running event was won by Miss M. Walker (Hobart), 8½ m.p.h.

## Blackpool and Fylde M.C.C.

The members' hill-climb held on the 22nd ult. resulted:

Class I. (lightweights): 1, N. H. Brown (2½ Hazlewood).  
Class II. (single-cylinders up to 560 c.c.): 1, F. Rees (3½ Rudge).

Class III. (multi-cylinders up to 1,000 c.c.): 1, S. O. Taylor (8 Rex-Jap).

Class IV. (sidecar machines): 1, F. Rees (3½ Rudge sc.).

Class V. (single-cylinders on time): 1, J. J. Day (3½ Bradbury).

Class VI. (multi-cylinders on time): 1, F. Naylor (7 Indian).

## North-west London M.C.C.

An inter-club hill-climb v. Oxford M.C.C. will be held on the 13th inst., at 4.30, at Arms Hill, Henley-on-Thames.

## Welsh A. and A.C.

The twelve hour motor cycle run took place on the 29th ult. over the following route: Swansea, Builth, Aberystwyth, Cardigan, Fishguard, and Carmarthen. The roads were bad for the early part of the trip, but four competitors succeeded in obtaining full marks, viz., Ivor L. Roberts (3½ B.S.A.), C. Simons (3½ Triumph), Edw. T. Strick (3½ Triumph), and Edgar P. Thomas (3½ Triumph).

## Ipswich and District M.C.C.

A members' hill-climb was held in Shrubland Park (by kind permission of Lord De Saumarez) on the 6th inst. The hill measured 640 yards, rising to 1 in 7. The surface, through recent heavy rains, was in a very louse condition. Results:

Class I. (touring models, single-cylinders, up to 500 c.c.)—1, K. Portway (B.S.A.), time 34½s.

Class II. (T.T. and T.T. roadsters, single-cylinders, up to 500 c.c.)—1, E. Herdman (Rudge), time 30½s.

Class III. (novices' class, single-cylinders, up to 500 c.c.)—1, M. K. Williamson (Premier), time 31½s.

Class IV. (lightweights up to 400 c.c.)—1, D. W. Popplewell (Singer), time 38½s.

Class V. (any machine up to 1,000 c.c.)—1, E. Herdman (Rudge), time 29½s. (fastest time of the day).

Class VI. (slow climb, knockout, same gear as employed in fast climb)—1, W. Low (V.S.)

Class VIII. (standing start, any machine)—1, E. Herdman (Rudge), time 37½s.

## Hants M.C.U.

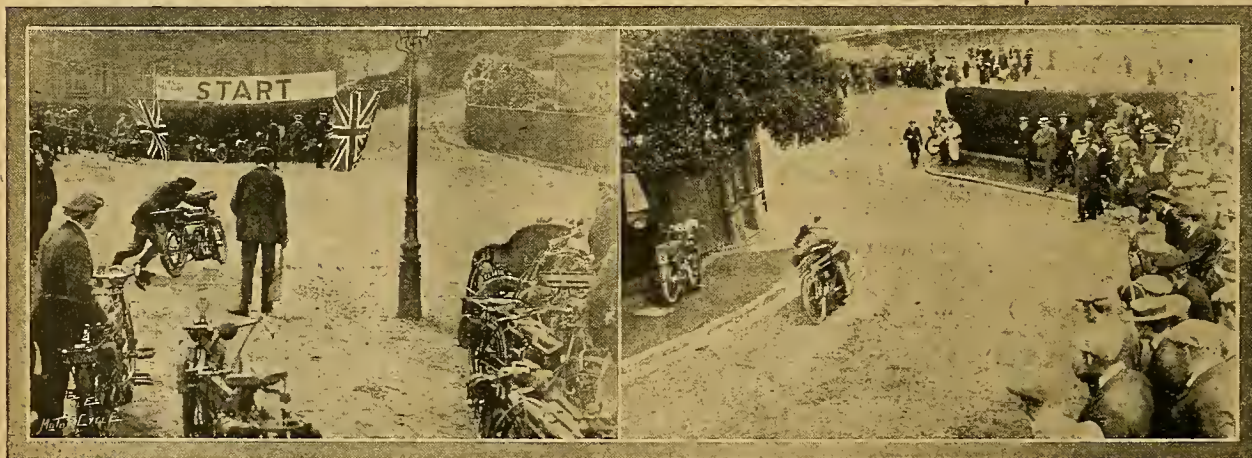
The Bournemouth section of the above Union held a hill-climb last week on a short sharp rise with a gradient of 1 in 5. A thirty or forty yards start was allowed. The hill selected was unknown to any of the sixteen riders until they were taken to the spot. It is situated on the front at Bournemouth. Results:

Class I.—1, A. G. H. Alsford, Bournemouth (Douglas), 20s.; 2, Percy Kiem, Portsmouth (New Hudson), 20½s.; 3, F. Evers, Portsmouth (Hobart), 21s.

Class II. (3½ h.p. machines).—1, O. Goodman, Bournemouth (B.S.A.), 16½s.; R. C. Pearson, Portsmouth (Premier) and F. Tappenden, Portsmouth (Premier), 17s.

Class III. (open to all comers).—1, O. Goodman, Bournemouth (B.S.A.), 16½s.; 2, H. J. Bleach, Southampton (Bat-Jap) and A. G. Goodland, Bournemouth (Triumph), 16½s.

Class IV. (sidecar machines).—1, A. G. H. Alsford, Bournemouth (Clyno), 20s.; 2, R. C. Pearson, Portsmouth (Premier), 21s.; 3, W. H. Blackmore, Bournemouth (Calthorpe), 22½s.



## HANTS MOTOR CYCLE UNION (BOURNEMOUTH SECTION) HILL CLIMB.

Kiim (3½ New Hudson) starting. He unfortunately fell at the corner.

Tappenden (3½ Premier) going well. He obtained third place.





Flashlight Photograph of the start from the Town Hall, Sheffield, last Saturday evening of the Sheffield and Hallamshire M.C.C. Annual Reliability Trial to Holyhead and back, for the "Hutton" Shield.

#### Uxbridge C.C.

A meeting will be held at the Chequers Hotel to-morrow (the 12th inst.) at 8.30 p.m. with a view to forming a motor cycle section. All motor cyclists are welcome.

#### North Middlesex M.C.C.

A twelve hours' open reliability trial will be held on the 20th inst. for motor cycles, sidecars, and cyclecars. The route will be to Stratford-on-Avon and back. Arms Hill will be included in the course only for those who wish to make the ascent.

#### Pontefract M.C.

The annual twelve hours' reliability trial was held on July 4th over the following course. Pontefract, York, Garrowby, Scarborough, Whitby, Saltburn, Thirsk, Ripon, and Pontefract. The winner was H. Craven (Chater-Lea and sc.); F. Hiley (T.T. Triumph) was second.

#### Sheffield and Hallamshire M.C.C.

There was probably the biggest assembly of motor cyclists ever gathered together in Sheffield at the annual 320 mile trial to Holyhead and back. The route was *via* Millhouses, Buxton, Knutsford, Chester, Prestatyn, and Bangor. The following riders finished, the first four tying for first place: D. Bradbury (3½ Norton), F. Dover (3½ Premier), J. Haslam (6 Zenith and sc.), R. Garnett (6 Matchless-Jap), T. Durant (3½ Premier), H. Short (8 Chater-Lea and sc.), J. B. Nicholson (3½ Champion-Jap), F. H. Ronksley (3½ T.T. Rudge), S. Sawyer (3½ Premier), C. Halcombe (3½ Bradbury), and J. A. Stacey (6 Rex-Jap and sc.).

#### Birmingham M.C.C.

The third annual paperchase, organised by this club, was held on the 6th inst. On Saturday, the 20th inst., the open reliability trial for passenger motor cycles and cyclecars takes place. Full particulars can be obtained from Mr. R. Vernon C. Brook, Oakdene, Cambridge Road, King's Heath, Birmingham. Entries close on the 16th inst. A large entry is anticipated, as the course is a thoroughly sporting one, including, as it does, Edge Hill, Sunrising, Weston, Birdlip, Sudeley, Ilmington, and Saintbury.

The third annual reliability trial for the Sangster trophy will take place on the 13th and 14th inst., and take the form of a run to Aberystwyth and back. Route *via* Bromsgrove, Leominster, New Radnor, Rhayader, and Devil's Bridge.

#### Cork and District M.C.C.

A hill-climb was held on the 3rd inst. at Grange Hill. Results:

- I. Sidecars.—1, P. J. Cox (5 h.p. A.J.S.).
- II. Private Owners up to 500 c.c.—1, R. S. Russell (3½ h.p. T.T. Matchless), 45½s.; 2, M. J. Chambers (3½ h.p. T.T. Triumph), 49½s.

III. Unlimited on time and formula  $\frac{C \times T^2}{W}$  as recommended

by *The Motor Cycle*.—Formula order: 1, M. J. Chambers (3½ h.p. T.T. Triumph), 44½s.; 2, R. S. Russell (3½ h.p. T.T. Matchless), 45½s.; 3, P. A. Egan (3½ h.p. T.T. Bradbury), 43½s.; 4, L. Dobbin (8 h.p. Matchless), 39½s.



Start of the Birmingham M.C.C. Paperchase. The hon. sec., R. V. C. Brook, setting out; his passenger has the supply of paper.



# What the WAR OFFICE TIMES AND NAVAL REVIEW says about **THE HAZLEWOOD.**

"The ideal motor bicycle is THE HAZLEWOOD, and, in our opinion, superior to any other motor cycle in the world. It is extremely suitable for Military and Naval Officers, as a machine of the highest class for speed, power, and reliability."

## **COST OF UPKEEP.**

**This will interest you.**

10th June, 1912.  
Hotel Angiolo and Simphon, Milan.  
Messrs. Hazlewoods, Ltd., Coventry.  
Gentlemen,

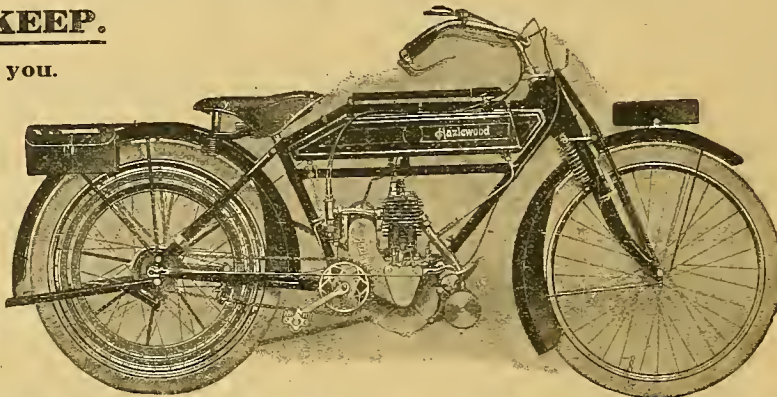
I have just arrived at Milan after a most pleasant journey through France. I am glad to say that my Hazlewood machine behaved splendidly and I had not the slightest trouble, although I covered about 1,000 miles.

I find that the petrol consumption was very small. I found I could average 137½ to 150½ miles per gallon, and at this I was most astonished, especially as one part of my journey took me from Lanslebourg over the Mont Cenis to Milan.

I cannot speak too highly of the splendid reserve of power which I always had in hand when running my machine.

Yours faithfully,

R. G. BALMAIN.



**FIRST  
PRIZES  
AWARDED**

**SPECIAL  
GOLD  
MEDALS.**

**For Power  
and  
Reliability  
in all the  
latest Trials.**

**THIS IS THE MACHINE THAT DOES WHAT HIGHER-POWER MACHINES FAIL AT. YOU'VE NOT GOT THE BEST UNLESS IT'S HAZLEWOOD.**

## **CHAMPION FOR HOME AND COLONIAL USE.**

**LOOK FOR THE  
BIG H  
ALWAYS IN FRONT.**

The World's Greatest Lightweight Manufacturers.  
**HAZLEWOODS, Ltd., Coventry.**  
ESTABLISHED 1876.

**LOOK FOR THE  
BIG H  
ALWAYS IN FRONT.**

For the convenience of tourists the size of the book has been made suitable for the pocket or valise.



## **Know your road before you start.**

**It will save much time and discomfort.**

"The Motor Cycle" Route Book contains carefully selected routes for the whole of the British Isles, with distances clearly shown; 45 Sectional Maps and Index Map (by Bartholomew), Speed Limits, and a copious index.

In every case the BEST route—and not necessarily the shortest—has been chosen. Large towns, congested districts, and bad roads are avoided.

**Before commencing a tour every motor cyclist should study this book carefully. He will be well repaid by the added enjoyment which comes of freedom from worry.**

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(Remittance should accompany orders sent by post.)



## Club News.—

## South Wales A.C. and Cardiff M.C.

The entries close on the 10th inst. for the open hill-climb and speed trials, which will be held at Caerphilly and Porthcawl respectively, on the 18th and 20th inst. There will be classes for motor bicycles, sidecars, and cyclecars.

## Herefordshire M.C.C.

This club joined with the Newport Club on the 23rd ult. in an inter-club run, which took the form of a speed-judging and reliability contest. Result: Hereford M.C.C. lost 91½ marks; Newport M.C.C. lost 62½ marks.

## East Yorkshire M.C.C.

A new club has been formed for Hull and district with the above title. Its features are: No trade influence, affiliation with the A.C.U., limited membership and subscription fee of 10s. 6d., which will cover the period from now until the end of 1913. The hon. sec., Mr. T. H. Straker, 12, Percy Street, Hull, will be glad to send particulars of membership to anyone interested.

## Scarborough and District M.C.

On the 26th ult. a novel endurance contest was held on Sutton Bank, near Thirsk. The competitors had to make non-stop consecutive ascents of this famous hill with hot engines, only thirty seconds being allowed at each end for signing checker's book and turning round. First and winner of gold medal, G. H. Storey (3½ single-gear Norton), who made seventeen consecutive ascents and only retired then because he was the only competitor left running; second, S. H. Clay (3½ F.E. Triumph), eleven ascents; third, J. W. F. Tranmer (2½ Humber lightweight with three-speed Armstrong), eight ascents.

## Belfast and District M.C.

The above club held a petrol consumption trial on the 22nd ult. Results:

Rider and machine.	Total		Petrol	F.M.
	weight.	used.		
	lbs.	ozs.		
1. Hugh Denby (4 Rex) ...	382	42	909	
2. W. Rickerby (3½ Rudge) ...	366	60½	604	
3. Tom Mallon (2½ Premier) ...	346	59½	581	

## Hamilton and District M.C.C.

A hill-climb was held on the Louinsdale Hill, Kirkfieldbank, Lanark, on the 22nd ult.; also a flying half-mile two days later. Results:

## HILL-CLIMB.

Class I.: 1, Dr. Fotheringham (3½ Bradbury); 2, J. Bergman (3½ Rudge-Multi); 3, J. Low (3½ Rudge).

Class II.: 1, T. Gibson (8 Dot); 2, R. McA. Walker (5-6 A.J.S.).

Class III.: 1, A. L. Wilson (2½ Enfield); 2, W. Dick (2½ F.N.).

Sidecar Class: 1, R. McA. Walker (5-6 A.J.S.); 2, — Adams (3½ Zenith).

## FLYING HALF-MILE.

1, J. Bergman (3½ Rudge-Multi) 35½s.; 2, M. Garry (3½ Triumph), 37½s.; 3, J. Low (3½ Rudge), 38s. Fastest time of the day: 1, M. Garry (3½ T.T. Triumph), 33½s.

## Sheffield and Hallamshire M.C.C.

A hill-climb took place on the 29th ult. at Bradfield. Results:

## LIGHTWEIGHTS.

	Time.	Fig. of merit.
1. D. Bradbury (2½ New Hudson) ...	53s.	44.3
2. J. W. F. Tranmer (2½ Humber) ...	59½s.	63
3. J. Carter (2½ A.J.S.) ...	79s.	82

## STANDARD SINGLES.

1. N. Newton (3½ Rudge) ...	44½s.	55.6
2. D. Bradbury (3½ Norton) ...	47½s.	61.8
3. S. Swift (3½ Triumph) ...	48½s.	68.3

## MULTI-CYLINDER MACHINES.

1. R. Garnett (6 Matchless) ...	45½s.	85.7
2. W. Telfer (7 Indian) ...	50½s.	119

E. L. Moxey (8 h.p. Matchless) made fastest time.

An open hill-climb will be held near Sheffield on a very steep, perfectly safe hill, with excellent surface, on the 27th inst. There will be seven classes. Information can be obtained from Mr. D. Bradbury, 3, Fulmer Road, Sheffield.

## Essex M.C.

A gala day will be held at Brooklands on August 17th, when there will be motor cycle, sidecar, and car races, and a hill-climb on the test hill.

## Dublin and District M.C.C.

An examination of the checking sheets of the novices' trial to Maryborough and back, reported in the issue of the 27th ult., showed that there was a tie for first place, J. Livens (3½ Rudge), H. T. Carroll (3½ Singer), and W. J. Towell (3½ Rudge), each scoring the maximum number of marks (100). Seven of the other twelve finishers won bronze medals by scoring seventy per cent. of the maximum marks. In the re-run of the dead heat in the White cup, which was run off in connection with the trial, the two men Roche (3½ Rover) and Browne again tied.

## Cork and District M.C.C.

The following events were run off on Garryvoe Strand on the 26th ult.:

Event I. (sidecars): 1, C. G. Pohlmann (3½ Rudge), 10s. start; 2, L. Dobbin (8 Matchless), scratch.

Event II. (motor cycles under 500 c.c.): 1, M. J. Chambers (3½ T.T. Triumph); 2, R. S. Russell (3½ T.T. Matchless).

Event III. (four mile handicap): 1, L. Dobbin (8 Matchless), scratch; 2, M. J. Chambers (3½ T.T. Triumph).

A scratch race for sidecars resulted in a win for Pohlmann; Dobbin's belt broke.

## Chesterfield and District M.C.C.

There were over fifty entries for the Stanage Hill-climb on the 26th ult. Results:

Event I. Passenger Class.—Fastest time, J. S. Wilcockson, (7 h.p. Indian and sidecar), 53½s.

Event II. Unlimited c.c.—Fastest time: Twin-cylinder, F. B. Halford (8 h.p. Brough), 35½s.; single cylinder, J. J. Kelly (3½ h.p. Bradbury), 39½s.

Event III. Standard Singles in Pairs.—W. Woods (3½ h.p. Triumph), 44½s.

Event IV. T.T. in Pairs.—J. Farrow (3½ h.p. Triumph) 39½s.

J. Farrow (3½ h.p. T.T. Triumph) and J. J. Kelly (3½ h.p. T.T. Bradbury) then ran off for fastest time singles, and Kelly won, his time being 38½s; Farrow's 40½s.

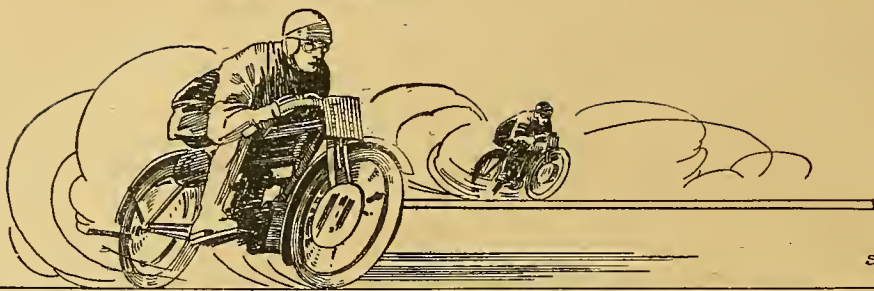


A FULL LOAD.

Frank Smith's Clyno sidecar combination was very popular with the ladies on the "prom" at Douglas, and was always sure of a full load.



## QUESTIONS & REPLIES



SRJ

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Machine will Only Run Fast.

**Q.** My machine refuses to run slowly and constantly stops, but will run fast with the throttle open and the air closed. Will you please advise?—J.S.E.

**A.** We should advise you to take the carburettor down and carefully overhaul it; evidently there is a stoppage. The failure to run slowly may be due to a partial obstruction in the jet or elsewhere in the carburettor, or too much air due to the union not being air-tight.

### One Cylinder Misfires.

**Q.** I have a 2½ h.p. twin which has lately commenced to misfire in the front cylinder. I thought at first the plug was at fault, but find that a plug which sparks regularly in the back cylinder will not in the front. Can you explain this? Is it possible for the carburettor to be at fault? If so, is the getting at the choke tube (as fitted 1910) a difficult matter?—F.J.L.

**A.** It is possible that the magneto carbon is cracked, broken, or making poor contact. We should advise you to examine this. But it is more likely that the carburettor requires cleaning. In these carburettors one jet supplies each cylinder, so if one is choked the result is obvious. They are rather troublesome to dismantle and must be carefully reassembled.

### Oil Grooves.

**Q.** Which is the correct thing to do in building an engine, put the oil grooves on the crank pin or in the bush of the connecting rod? I may inform you that having had the connecting rod rebushed with white metal, and after a run of 100 miles with plenty of oil, it has all been ground out, possibly by the oil grooves in the crank pin. Your opinion on the subject will be looked for by a good many of your readers, as the idea here is that the engine has been constructed wrongly, and I have been advised to have a new crank pin made with no oil grooves in, but oil grooves in the bush.—E.V.

**A.** The answer to your question is that both methods are correct. Grinding should be impossible with spiral grooves properly cut, but if the groove is a straight one and on the side where the pressure is greatest, it might occur, especially if the edge is sharp. It is unusual to bush motor cycle connecting rods with white metal, phosphor-bronze is usual.

### A Holiday in the Isle of Man.

**Q.** I intend soon to go over to the Isle of Man for a holiday, and wish to take my motor cycle, 1912 Clyno and sidecar, with me, and I shall be glad of the following information: (1.) Before embarking at Liverpool must I empty my petrol tank? (2.) Do I require any special licence for touring in the island? (3.) Do the Isle of Man Steam Packet Company's men take charge of putting machine on board ship and unloading? (4.) About how much will the cost be to take the machine from Liverpool to Douglas and back?—O.W.

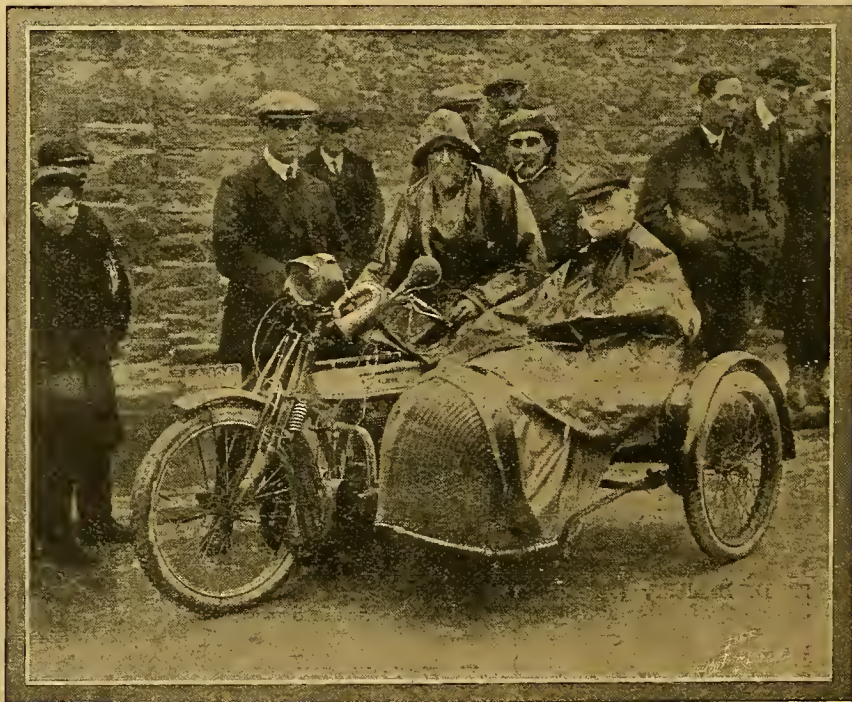
**A.** (1 and 2.) Yes, the petrol should be emptied from the machine before embarking. The steamer authorities, however, are not extremely strict. When you get to the I.O.M. you must call at the offices of the Highway Board in

Athol Street, and fill up a form. This is an act of courtesy; there is no charge for it. (3.) The I.O.M. Steam Packet Company's men and those employed at the Liverpool and Douglas docks see to the loading of the machine. (4.) A sidecar costs 5s. each way. Porters 6d. each.

### Building a Cyclecar.

**Q.** I am contemplating building a small three-wheeled cyclecar. (1.) Would a 2 h.p. motor cycle air-cooled engine be sufficient (weight of car and load thirty stones)? (2.) Are differential gears necessary for three-wheelers? (3.) What is the best material for frames?—L.P.J.

**A.** (1.) 2 h.p. is just about half the power you require. (2.) Differential gears are not necessary. (3.) Special cycle tube, which can be obtained from most large factors of parts and fittings.



### THE MOTOR CYCLE FOR ALL AGES.

Mr. James L. Norton, a well-known competitor in past T.T. races, was seen in the Island on a sidecar this year with his father as passenger. Mr. Norton, jun., is the maker of the machine bearing his name.



## Sidecar on Four-cylinder Machine.

?

As I intend purchasing a second-hand  $4\frac{1}{2}$  h.p. F.N. would you kindly answer the following questions regarding that mount:

(1.) What would the mileage per gallon be? (2.) Is the lubricating oil consumption great? (3.) Would the machine be able to take a sidecar over ordinary roads (20 stones load)? (4.) Is lack of oil the cause of engine seizure? (5.) As it is a fixed engine, what is the best method (and easiest) of starting with sidecar attached?—C.N.R.

(1.) The mileage per gallon would be about sixty or seventy. (2.) The consumption of lubricating oil would be rather greater than that of a twin-cylinder. (3.) The machine would take a sidecar over ordinary roads if a two-speed gear is fitted. (4.) Lack of oil would certainly cause seizure. (5.) We should advise you to have either the two-speed gear sold by this firm, or a free-engine clutch. Without it a sidecar would not be advisable.

## Stamford to Swansea.

?

I shall be glad if you can tell me the shortest and best route, avoiding large towns as much as possible, from Stamford (Lincs.) to Swansea (Glam.)?—S.E.R.

Your best route from Stamford to Swansea would be as follows: Through Rockingham Forest *via* Weldon, Corby, Market Harborough, then two miles after crossing the Leicester-Northampton Road, branch to the left and take the road through Rugby over Dunsmore Heath, through Leamington, Warwick, Stratford-on-Avon, Alcester, Evesham, Tewkesbury; then you can either go to Gloucester and follow the Severn estuary by Newnham, Chepstow, Newport, Cardiff, and Bridgend; or you can go *via* Ledbury, Ross, Monmouth, Raglan, Pontypool, and then follow the railway to Crumlin, Tredegar Junction, Rhymney Junction, Nelson, Aberdare, and Neath to Swansea. We are inclined to think that a combination of the two routes would give you the finest scenery, by going through Ledbury and Monmouth and then turning south to Chepstow along the Wye Valley and taking the coast road.

## Carburettor.

?

I have a 1911 Douglas a.o.i.v. On taking out air and throttle slides after running, I find both saturated with petrol, also petrol on walls and at bottom of air chamber. What is the cause of this, and does it account for carbon deposit forming so rapidly on piston and cylinder heads? I have to scrape deposit off every 500 miles. Inlet valves open  $\frac{1}{16}$  in., springs are strong, and petrol level is not too high. There is no leakage.—A.G.

You might try a rather smaller jet, and this should prevent the deposit forming quite so rapidly, also try reducing the amount of lubricating oil slightly. Also it is quite possible that, although the petrol level is not too high when the machine is standing, the excessive movement of the needle valve may yet allow an overflow when on the move. The needle valve should be able to rise high enough to allow an ample supply of petrol, but no more. Too rich a mixture will cause a deposit.



Latest model Roc tricycle, produced by A. W. Wall, Ltd.

## Various Queries.

?

(1.) Should the exhaust valve click much when the engine is being throttled down? This has only happened since my Easter tour. (2.) How can you prevent an acetylene lamp from going out when one rides fast? I might add I have spring forks and the light is put full on. (3.) What is the gradient of Wrotham Hill, in Kent? (4.) What is the best way to prevent a clutch from slipping?—G.R.F.W.

(1.) The click is probably due to excessive clearance between valve stem and tappet (there should be not more than  $\frac{1}{32}$  in. at the most) or to worn or badly cut gear teeth. The click in itself will do no harm. See that the gear wheel bearings are not too slack. (2.) A good acetylene lamp should not be perceptibly affected by the pace. We cannot answer this question without seeing the lamp. (3.) This is not a severe hill, the steepest part being about 1 in 10. (4.) If a disc clutch, clean out with paraffin and if

possible adjust spring. If this fails, new discs or spring may be necessary, though probably a thorough clean will put matters right. If a leather cone clutch, clean and scrape leather and dress with castor or collar oil.

## Sidecar for a Potterer.

C.

I am thinking of buying a motor cycle and sidecar, and shall feel obliged if you will give me your opinion on the matter. At present I do not know anything about motor cycles, but I want a machine so that my niece and self can jog along the country roads at a nice easy rate. I may say that I am getting on in years (nearly 60). (1.) Could I purchase a reliable second-hand machine and sidecar for about £30? (2.) What kind would you advise me to get? (3.) Is it difficult to understand? (4.) Could I read up the subject in any book? (5.) What is the cost of licence?—G.D.

(1.) £30 is not quite enough for a second-hand motor bicycle and sidecar. (2.) We should recommend a machine with engine not less than  $3\frac{1}{2}$  h.p. and fitted with a change-speed gear. (3-4.) If you purchase a copy of "Motor Cycles and How to Manage Them" you will be able to understand a motor bicycle easily. (5.) The driving licence costs 5s., registration 5s., and local taxation licence £1.

## EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles and accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"H.G.G." (Cambridge).—Bowden two-speed gear and free engine.

"J.G." (Glasgow).—1912  $3\frac{1}{2}$  h.p. Lincoln Elk (clutch model) for solo work.

"W.G.H." (London).—Watawata belt on 6 h.p. Zenith.

"H.B.A." (Folkestone).— $3\frac{1}{2}$  Rudge Multi and sidecar. Belt wear with  $\frac{1}{4}$  in. and lin. belts.

"D.N.R." (Glasgow).—Four-cylinder 1910 F.N. (single-gear) for use with sidecar, particularly as regards hill-climbing, tyre wear and petrol consumption.



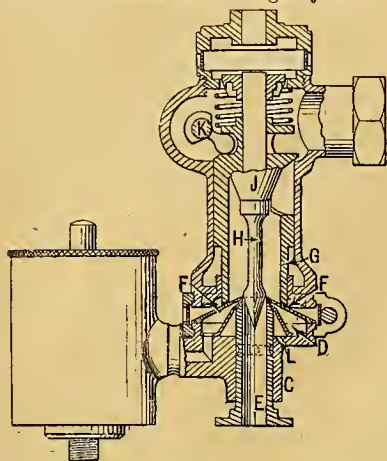
THE DOUGLAS TEAM IN THE JUNIOR T.T.

From left to right the riders are: J. Haslam, J. Stewart, W. H. Bashall (winner), Rex Mundy, and S. L. Bailey. E. Kickham, second to finish.



**Carburettor Spraying Device.**

Petrol is supplied from the usual float chamber to a spraying device consisting of a pair of cones which are superposed and attached to a base C to form an annular chamber D in which the petrol finds its level. An air port E passes through the base C, and other air inlets F are arranged just above



the top cone. The ports F are opened and closed by the operation of a clevee G, which also carries a needle H for regulating the opening of the port E. With this also is combined the engine throttle J, with its control lever K. Small orifices are left at the upper end of the cylindrical port E, through

**A Neat Repair Outfit.**

The Leicester Rubber Company have sent us a very neat tyre repair outfit called the "John Bull." The box measures 3½ in. x 3½ in. x 1½ in., so that its title, "Compact," is a suitable one. This outfit is one of the neatest brought to our notice, and its contents are well selected.

**Racing Helmets.**

In response to our query respecting pneumatic helmets for racing purposes, Messrs. Alfred Dunhill, Ltd., 359-361, Euston Road, N.W., write to say that they have made many such helmets and have several in hand at the present time. They prefer to make them to fit the head. These helmets can be relied upon to prevent concussion, as there is a space of one inch between the outer layer, which is of thick cork.

**Electrically Welded Petrol Tanks.**

It may not be generally known that the operation of welding petrol tanks is employed on some makes of motor cycles. The Enfield Cycle Co., Ltd., have devoted a considerable amount of time to perfecting their petrol tanks, and have now introduced an electric welding machine which welds the top joints.

**T.T. Winners' Selections.**

F. A. Applebee's winning T.T. Scott was equipped with Continental tyres, Bosch magneto, Renold chains, and Brooks saddle, whilst Pratt's spirit and Wakefield Castrol oil were used.

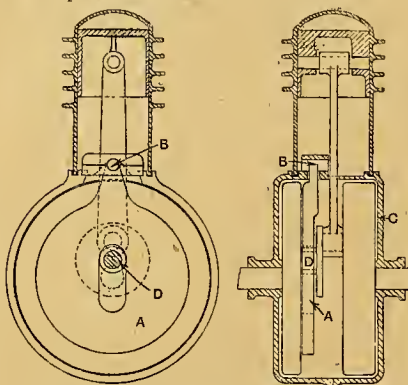
In the Junior Race the results proved the popularity and efficiency of the Amac carburettor, which was used on nine of the ten leading machines.



which the petrol is sprayed by the air drawn in through the ports L and F.—O. H. Austin, No. 19,759, 1911.

**A Balancing Device.**

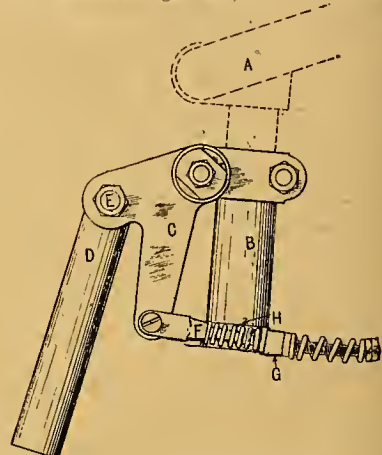
In order to counteract the unbalanced effect produced in a single-cylinder engine the inventor proposes to use a bob-weight suspended in a bearing B on the top of the crank case C. This bob-



weight is oscillated by a pin D, and the direction of oscillation is such as to counteract the unbalanced movements of the engine.—W. E. Lilly, No. 277,071, 1911.

**Spring Handle-bar Mounting.**

The handle-bar A is mounted on a sleeve B carried by a pair of rocking links C bolted to a sleeve D, which passes into the steering head, the attachment



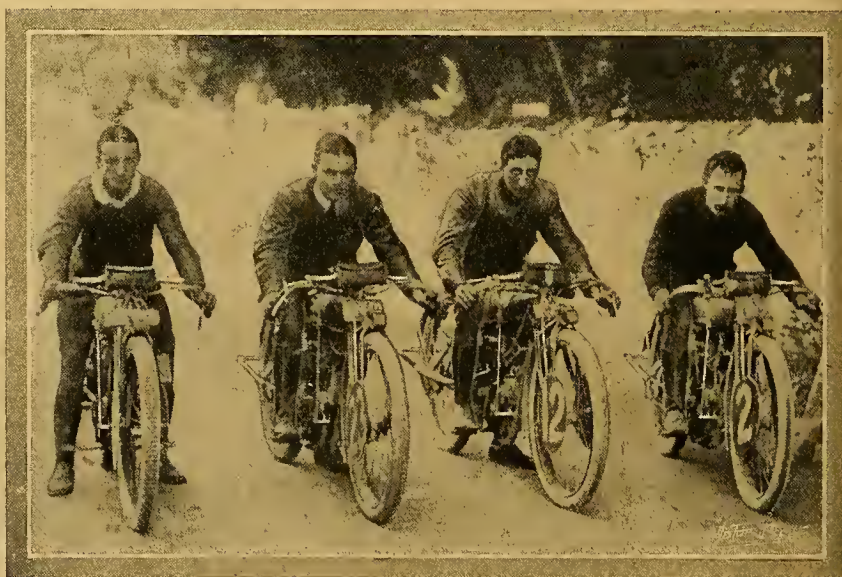
at E being such that the angle of the handle-bar can be varied. The links C carry rods F passing through lugs G on the sleeve and having springs H threaded upon them, allowing resilient movement between the parts.—J. T. Dallaway, No. 13,837, 1911.

**SPARKLETS.**

"Rudge Wrinkles" is the title of a booklet that has just been produced by Rudge-Whitworth, Ltd., Coventry. It gives excellent information on the tuning of engines, and the Rudge engine in particular. It is the intention of the firm to distribute "Rudge Wrinkles" among motor cyclists who enquire.

**Works Extensions.**

The Armstrong Co. are doubling their capacity, and a new building is to be erected at a cost of ten thousand pounds. Another ten thousand is to be spent in additional machinery. These extensions are necessary in view of the demand for the gear, which is fitted to many machines, and the big contracts which have already been secured for 1913.



INDIAN RIDERS IN THE SENIOR RACE.

Left to right: J. F. Sirett, A. H. Alexander, C. B. Franklin, and J. R. Alexander. The machines used were exactly the same as those ridden last year, with a reduced stroke.



# The "T.T." Ballad

## Winners of the Senior "T.T." 1911 and 1912.

*Tune—Ancient Song "Keep on doing it."*

*When Godfrey rode an Indian  
and tuned it up for flight,  
Some scalps were raised,  
and the Indian Braves  
sang round their fires that night.*

*Keep on doing it, keep on doing it,  
Keep on doing it each T.T.  
Keep on doing it, keep on doing it,  
Good old Indian's 1,2,3.*

*When Applebee his partner  
tuned up his British "Scott,"  
He said "O.G."  
just wait and see  
This scalping business stop.*

*Keep on doing it, keep on doing it,  
Keep on doing it each T.T.  
The old Firm's doing it,  
The straight Firm's doing it,  
Good old Scott and Applebee.*

*So shout hurrah for England,  
Three cheers for the trusty Scott,  
Hurrah for the 2 stroke engine,  
So cool when pace is hot.*

*We keep on doing it, keep on doing it,  
We keep on doing it each T.T.  
Keep on doing it, keep on doing it,  
Either Godfrey or Applebee.*

Godfrey & Applebee are now booking orders for 1913  
Scotts, and "keep on doing it." So don't delay if you  
want one as orders are taken in strict rotation.

**GODFREY &  
APPLEBEE Ltd.**

208, Gt. Portland St.,  
London, W.

Telegrams—"Gofrabike,  
London."

Telephone—Mayfair 4350.



Sole London Agents for  
Scott, Trump-Jap, and  
Corah Motor Cycles.

Exclusive Agents for  
Indian Motor Cycles.

Special Agents for  
Alcyon, Bradbury, and  
Zenith.

C.D.C.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*



# Make your choice.

## ALCYON Motor Cycles

## A-C Sociables - - -

## BRITON Motor Cars

The ideal light-weight. 2 h.p.  
Weight 100 lbs.

Much copied but  
unequalled.

British throughout.  
Fully guaranteed.

REPAIRS OF  
ALL KINDS  
BY EX-  
PERIENCED  
WORKMEN.

A-C  
SOCIABLE  
REPAIRS  
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Immediate Deliveries of any of these.

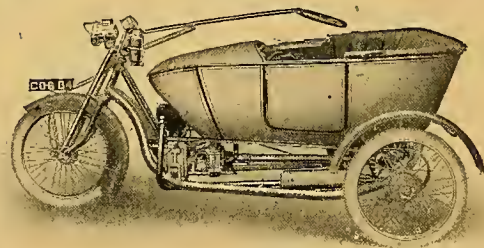
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## G. N. HIGGS,

Victoria 1215.

31, Vauxhall Bridge Road, London, S.W.

O—O



Price, with comfortable two-seater body,

**100 Guineas.**

## THE WALL TRICARRIAGE

The first cyclecar on car lines.

(Frame patented and designs registered.)

Shaft transmission, differential axle, Roc epicyclic change speed gear, tyres interchangeable.

Easy to start, safe to drive, economical to use.

Write for lists and users' opinions to the Sole Manufacturers,

**A. W. WALL, LTD.,**

**ROC MOTOR WORKS, HAY MILLS, BIRMINGHAM.**

Trials daily.

Early deliveries.

## "LINCOLN ELK" New Models, 1912.

Manufactured Completely by

**J. KIRBY,**

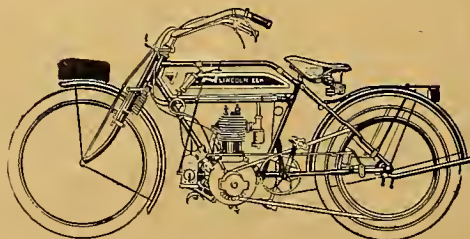
**Broadgate, LINCOLN.**

Telephone:  
2Y5.

Telegrams:  
"ELK," LINCOLN.

Wholesale Agents for Scotland:

The North British Machine Co., Ltd.,  
56 & 58, Great Clyde Street, Glasgow.



3½ h.p., £34 - 0 - 0.

3 h.p., £30 - 10 - 0.

2½ h.p., £28 - 10 - 0.

All Models fitted with Palmer Tyres, Bosch Magneto, and Footrests. "Druid" Spring Forks.

Sole London Agent:

**REY,**

Heath Street Motor Works,  
5, Heath Street,  
Hampstead, London, N.W.

In answering these advertisements it is desirable to mention "The Motor Cycle."



**AMAC****AMAC****Tourist Trophy Race, 1912.****JUNIOR RACE.**

Machines fitted with AMAC Carburetters obtained the following positions in the race:—

**1st, 2nd, 4th, 5th, 6th, 7th, 8th, 9th, 10th.****SENIOR RACE.**

Machines fitted with AMAC Carburetters obtained the positions of:—

**3rd and 4th.**

Excluding machines fitted with makers' own carburetters, AMAC obtained the positions of:

**1st, 2nd, 3rd, 4th, 5th, and 6th.**

Remember the course necessitated not only a speedy carburetter, but flexibility, acceleration, and other qualities were important factors in the selection of same.

**AMAC**ASTON MOTOR ACCESSORIES CO., LTD.,  
TALFORD STREET, ASTON, BIRMINGHAM.**AMAC****They go fast—they last.**

Wood-Milnes have shown themselves unbeatable for that!

The speed capacity of "Wood-Milnes" has been proved repeatedly in the longest and severest road competitions of the season, including the Exeter, Gloucester, Edinburgh, Stratford-on-Avon, and Birmingham-Land's-End Runs.

As to durability—the fabric foundation of a "Wood-Milne" is up to car tyre standard. The canvas is woven from strong-fibred cotton, and there is an extra layer. Its quality of weave, its uniformity, and its perfect rubber-filled mesh make this fabric equal to any strain that road work can put upon it. The "Wood-Milne" Steel rubber tread prevents punctures, grips the road—helps the engine up hill—adds both to speed and lasting power.

**Wood-Milne****MOTOR CYCLE TYRE.**

Made in "Griprib," "Gripstnd," and Rubber Studded Patterns.

*The Wood-Milne Steelrubber belt is the only rubber belt that will not slip when wet.*

Send for Price List.

**WOOD-MILNE, LTD., PRESTON.**

Telegrams:—"COMFORT, PRESTON."

Telephone:—Preston, 413.

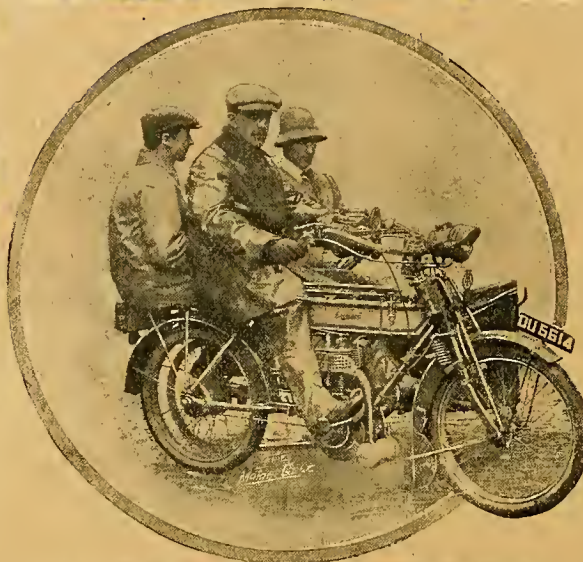
LONDON, BRISTOL, BIRMINGHAM,  
BELFAST, DUBLIN, GLASGOW, PARIS, VIENNA.*In answering these advertisements it is desirable to mention "The Motor Cycle."*



# EXCELSIOR

The Sidecar Machine with the Pulling Power.

The big cylinder (650 c.c.) 4½ h.p. Excelsior will do better work than any other motor cycle that is made. Its pulling power is wonderful. On one occasion this machine took four heavy people up Stoneleigh Hill, and on another three, at a good turn of speed, up



The 4½ h.p. Excelsior two-speeder as it ascended Sunrising Hill with three passengers.

Sunrising Hill. In both cases this was with a substantially-built sidecar. Sidecar work was what this engine was designed for, and in this respect it is absolutely unsurpassed.

4½ h.p. Model with Free Engine,  
57 Gns.

Catalogue and full particulars post free.

**BAYLISS, THOMAS & CO.,**  
EXCELSIOR WORKS,  
COVENTRY.

Established 1874.

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BIRMINGHAM—J. & C. Swanns, Ltd., 211, Broad St.  
LIVERPOOL—F. C. Jones & Co., Redcross Street.  
MANCHESTER—Manchester Motor Exchange, 32, Downing Street.

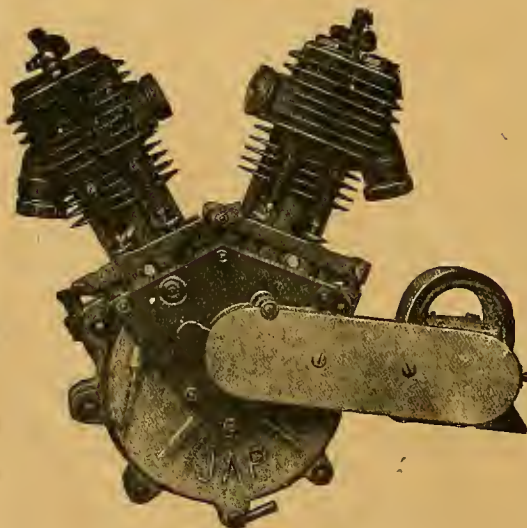
Agents in almost every district.  
Write for the name of nearest.

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**“J.A.P.”**

**MOTORS.** British.



J.A.P. 60 x 76 3 h.p. Twin Engine.

The repeated successes which have been gained on J.A.P. engines, both on the road and track, are ample proof of the high-class workmanship and material used in their construction.

## Tourist Trophy Races, I.O.M.

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| 1907 | J.A.P. 1st.                                     |
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**J.A. PRESTWICH & CO.**  
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# BARGAINS FOR MOTOR CYCLISTS

SPECIAL PRICES during Sale only.

## MOTOR CYCLE DUST CLOTHING.

### JACKETS and SEATLESS GAITER TROUSERS

(Heavily Rainproofed).

Cantoon, Drill, Fawn and Green Shades.  
Double-breasted Jacket (as sketch).



Worth 19/6.

Sale Price,  
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Fitted with V-shaped gusset,  
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Worth 11/6 pair.

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Ditto, short leggings,  
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Sizes in stock—

Jackets, 36, 38, 40, 42, 44  
chest.

Gaiter Trousers, 32, 34, 36,  
38, 40 waist.

Leg measures to each waist,  
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### Holland Dust Jackets.

(Will wash well.)

Single or Double-Breasted  
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Superior Crash.

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117-118, CHEAPSIDE & MILK ST.  
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### OUR "IDEAL" MOTOR SUIT.

Comprising—Double-Breasted Motor Jacket  
(36in. long, fitted with Wind Cuffs, Deep  
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Shaped Thigh Leggings. The above are made  
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Suit complete, 23/11

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Made by the MIDLAND RUBBER CO.

159 only. Heavy Motor Cycle Tubes, very Best  
Red Rubber. Assorted Sizes.

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### MOTOR CYCLE HORNS

Treble Twist, Nickel-Plated.

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### OUR LATEST SPECIALITY FOR MOTOR CYCLISTS.

### Leather Under-Coat.

To be worn under an  
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The Jacket is fitted with a  
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not in use can be folded up  
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Made in Tan Leather.

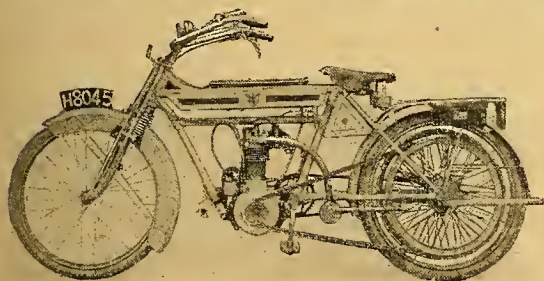
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*This Machine completed the RETURN JOURNEY.*

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GOLD MEDAL in the London to Edinburgh Run,  
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3 h.p. TWIN, with  
3-speed Gear and  
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48 Guineas.

EARLY DELIVERY.

2½ h.p. SINGLE,  
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Free Engine Model,  
£32 17 6

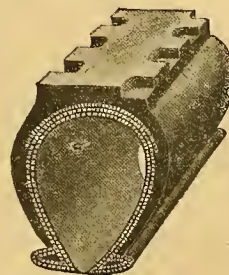
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# SKEW CYCLAR TYRES.

## All Rubber

Round ANTISKID.

Square NONSKID.



NOTE. The heavy section, with re-enforced tread

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Reliability.

Long Life.

Price List and full particulars POST FREE.

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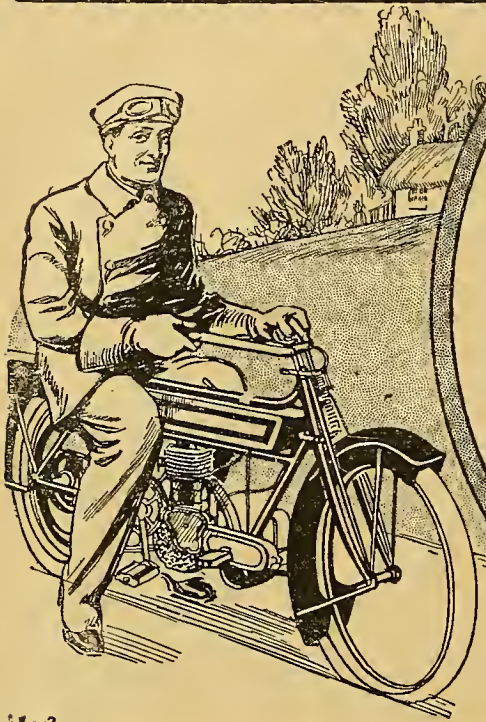
MANUFACTURERS,

35, New Cavendish Street,

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# PARSONS RAPID REPAIR KIT



## Punctures lose their terror

In the old patch and solution days, punctures were serious things. But since the introduction of the Parsons Rapid Repair Kit punctures have lost their terror. With a Parsons Rapid Repair Kit in your toolbag or pocket, the permanent mending of a puncture is only a matter of three or four minutes' easy work. You locate the puncture, take out about a foot of tube, punch the hole clean, insert a plug, and compress same with the special pliers supplied. That completes the job. And a puncture mended in this way is permanent—it can never leak, neither can the plug creep.

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descriptive  
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Complete Kit, which measures 7" x 4", and weighs 1 lb., contains piercing tool, stretcher, closing pliers, and 12 plugs. The cost is

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23, Store Street, London, W.C.  
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# 15/-

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Anyone can pay  
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a motor cycle—  
but why  
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Read it  
Again.

—when Pagets Plan enables you to purchase by monthly instalments—to enjoy the use of the machine whilst paying for it. Anything more easy or straightforward could not be imagined—just pay one-fifth down and the machine is yours. Send us the balance so much a month.

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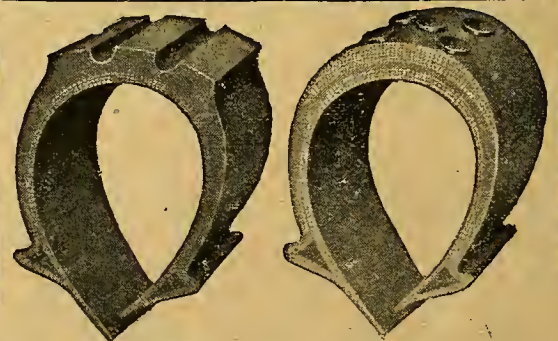
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**PAGETS LIMITED,**

10 and 11, Jermyn Street, London, S.W.

# PAGETS PLAN

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THREE RIBBED.

STEEL STUDDED.

## SPENCER MOULTON

### MOTOR CYCLE TYRES

Made in three kinds—three-ribbed, steel studded, and standard heavy. The same excellence of quality obtains in these covers as in our well-known motor tyres.

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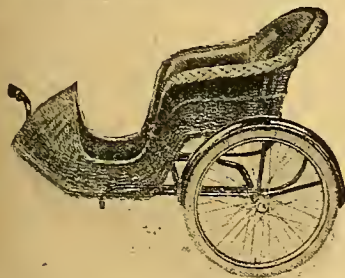
**WILTS.**



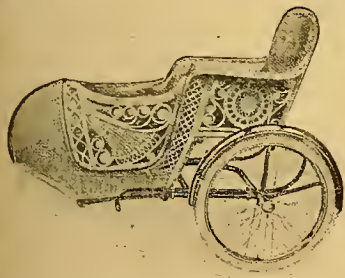
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10 Models to select from. Write now for illustrated catalogue, showing full detailed specification of the World-Famed Coronet Sidecars. Strongest, lightest, and scientifically constructed by practical men.

CAN BE OBTAINED FROM ALL DEALERS.



Model 1. High-class Canoe-front Body, Cranked Axle, and other improvements, £6 6 0.



Model 4. Ornamental Cane Body, as illustration, or Close Reed Cane Body, £8 8s.

**CORONET DETACHABLE JOINTS** enable our sidecars to be detached in one minute.



We illustrate herewith the "Coronet" Quick-detachable joints, which are fitted to all our models. To detach is simply a matter of unscrewing nut about five threads. When attached, and nut screwed tight, the joint is solid and perfectly rigid, and does not rattle like some patent joints held in position by springs and pins that are liable to shake loose.

## MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from 5/6. Your old coil and acc. taken in exchange.

### 25/- ALLOWED

for your B. & B. or Amac Carburetter if fitted with H.B. control in exchange for a new 1912 **SENSPRAY** or **BINKS**.

**BOOTH'S MOTORIES,**  
KEIGHLEY MILLS, BEDFORD ST. NORTH  
(off Pellon Lane), HALIFAX. Tel. 1062.

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3 1/2 h.p. Premier, late 1911, in splendid order, good as new; a bargain to clear, £29.—Turvey and Co., The Motor House, Sunderland. [X5604]

1912 3 1/2 h.p. Premier, 2-speed, free engine, practically brand new, will take sidecar anywhere, cost £60, sacrifice £50; also 1912 2 1/2 h.p. Premier, 3-speed, free engine, cost last month with accessories £50; real bargain, £40; both guaranteed absolutely perfect.—E. G. Eaglesfield, Maryport. [X5709]

## SECTION II.

York and Lancashire.

LIVERPOOL.

SALE of new and 2nd-hands.

DOUGLAS, stock bought before the T.T. boom.—Colmore Depot, 18, Renshaw St., Liverpool. [2328]

CHATER-LEA, No. 7, passenger model, just received.—Colmore Depot, 18, Renshaw St., Liverpool [2329]

BAT, chain drive, 2-speed, 8 h.p., ready.—Colmore Depot, 18, Renshaw St., Liverpool. [2330]

PRECISION, built to order for 38 gns., wonderful value.—Colmore Depot, 18, Renshaw St., Liverpool. [2331]

CLYNO, immediate delivery.—Colmore Depot, 18, Renshaw St., Liverpool. [2335]

BAT, What offers for new but odd stock: 8 h.p., 1912, belt, 2-speed; list price £68/10.—Colmore Depot, 18, Renshaw St., Liverpool. [2332]

TRIUMPH, 1910, 3 h.p., and Humber, 1911, 2-speed, 3 h.p.; £34 each.—Colmore Depot, 18, Renshaw St., Liverpool. [2333]

ENFIELD, 2 1/2 h.p., 1912, only used a few times; reduced from £52/10 to £45; taken in exchange for bigger machine.—Colmore Depot, 18, Renshaw St., Liverpool. [2334]

1911 Scott, new tyres, in fine order; £45.—Cross, agent, Rotherham. [X5889]

1911 Douglas, in fine order, £31; 1911 Rudge, £35.—Cross, agent, Rotherham. [X5851]

MODEL K Douglas, in stock, £50; new free engine Triumph, in stock, £55.—Cross, agent for Triumphs, Matchless, Bradburys, and Douglases. [X5852]

NORTHERN Depot, Ltd., "Everything Motorish," Lece St., Liverpool.

LATEST 1912 Clutch Kerry-Abingdon, been 45 miles; special bargain price, 45 gns., usual price 51 gns. Full makers' guarantee.

ROVER, with mark 111 Armstrong gear, and Brooks pan seat, slightly shop-soiled; £58.

STANDARD Kerry-Abingdon, 45 gns.; clutch model, 51 gns.; latest 2-speed Bradbury, with adjustable pulley, £58; clutch Triumph, £55.

CONE Clutch 4 h.p. Rex-Jap, with Brooks pan seat, £54/12. All the above actually in stock. [2067]

CARRS, Knowsley St., Bury.—1912 Rudge, free engine, only used once; bargain.

CARRS, Bury.—1912 B.S.A., free engine; generous allowance for exchanges.

CARRS, Bury.—1911 2-speed Humber, ideal sidecar machine, excellent order throughout; £38, or offer.

CARRS, Bury.—1911 Zenith, 3 1/2 h.p., excellent order; £39, or offer.

CARRS, Bury.—7 h.p. Swift car, in good running order, tyres, engine, and gears perfect; £29.

CARRS, Bury.—10-12 h.p. Humber, 2-seat, 1906, finest car Humber made, lamps, horn, screen, Stumpey, etc.; £50, great sacrifice. [X4962]

RUDGE Multi in crate; special exchange bargain.—Carrs, Knowsley St., Bury. [X5676]

CLYNOS.—For motor cycles and sidecars try Potter, 21, Leicester Grove, Leeds. [X5681]

1912 Scott Cycle, been 600 miles, as new; £60.—The Motor Garage, Castleford. [2109]

1911 Free Engine 2-speed T.T. Triumph Motor Cycle; £46.—Ewbank and Co., Castleford. [2107]

1911 Motosacoche, lady's, in excellent condition; £20.—R. Ewbank, Aire St., Castleford. [2111]

1911 2 1/2 h.p. 2-speed P.N., splendid order; buying 1912; £28.—240, Wyke Lane, Wyke. [X4029]

1912 Mag. Frontier Lightweight, 2 h.p., as new; £15.—Bartlett, Grove, Early, Colne, Lancs. [2055]

1911 Royal Enfield, 2-speed, free engine; in splendid condition; £34/10.—Atkinson, Nelson. [X4598]

1910 Scott, in good running order, spares, etc.; £32.—Atkinson, Nelson. [X4599]

3 h.p. Clyde, accumulator ignition, running order; £6, no offers.—Atkinson, Nelson. [X4600]

## Brand New Bargains.

Just a few Brand New 1911 3 1/2 h.p. **PREMIERS** at a reduction of £11.

Write for Illustrated Catalogue.

LIST PRICE, £47 10.

OUR PRICE, £36 10.

Fitted with Sturmey-Archer or Armstrong 3-speed gears, £10 extra.

Finest Sidecar Machine made.

CLYNO, 1912, only run 200 .....	£63 10
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N.S.U., 3 1/2 h.p., magneto, h.-b. control, spring forks, 2-speed gear .....	£17 10
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Twin DOT, 5-7 h.p.; 2 speeds, 1910 .....	£35 0
CLYNO New 1912 model in stock .....	£68 5
4 1/2 h.p. PRECISION, Millennium 2-speed hub, 1912 model, only run 300 miles .....	£42 0
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PREMIER, 1912, 3-speed, only run 300 miles .....	£48 10
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HUMBER Tricar, open frame, wheel steering, water-cooled .....	£15 0
ANTONE, 3 h.p., vertical engine, h.b. control, spring forks .....	£8 10

PUSH CYCLES TAKEN IN EXCHANGE.

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3 1/2 h.p. M.M.C., silencer, magneto, M.O.V. ....	£8 10
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4 1/2 h.p. GARRARD, water-cooled, clutch .....	£4 10
2 1/2 h.p. WERNER, 30/- 1 1/2 h.p. MINERVA, 29/6	

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26 x 2 1/2 in. Heavy Pedley Cover; listed 50/-	27/6
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New Lycett Rubber Belt, 7 ft. 6 in., 3 in. ....	11/6

## 4 1/2 h.p. PRECISION ENGINES.

We will make a good allowance for your old engine in part payment for one of the above up-to-date powerful engines.

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New 1912 B. & B. Carburetter .....	23/6
Nearly New 1912 Binks' Carburetter .....	26/6
Bosch Magneto, nearly new .....	£3 6
XL All Spring Forks .....	9/6
Nearly new 1912 Senspray .....	23/8
Bradbury pattern Handle-bars .....	6/8
Lowen Sidecar, cost £14 .....	£5
Longuemare, Minerva, P.N. Carburetters ..	4/8
Long Handle-bars, dropped ends .....	5/6 and 6/6
Coronet Silencers, up to 5 h.p. ....	3/3 and 4/8
Gripskin Belting: 3 in. 10d., 3 in. 11d., 4 in. 1/-	
Wide Mudguards, 4 in. ....	pair 2/11
B. & B. and Amac, h.-b. control .....	13/6
New Amac Carb., h.-b. control .....	20/-
Montgomery Sidecar, 10 guinea model .....	£3 10
Mills-Fulford Sidecar .....	£3 15
Tubular Carriers, with drop ends .....	4/8
New Mirror Lens Lamp with generator .....	12/6
Sidecar Lamps, show red behind .....	6/8

**Booth's Motories,**

Keighley Mills, Bedford Street North, Halifax.  
Tel. 1062.



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—because we deliver when we say we will, and because we do thoroughly tune up and guarantee every machine, new and second-hand and pay carriage. Odd, isn't it, for motor cycle agents? Buy through this approved society and ensure satisfaction and maximum benefits.

### WHAT OFFERS

for new 1912 MORGAN, hood, screen, and 3in. rear tyre, new 1912, for delivery this week?

1912 models actually in stock at time of going to press:

REX SIDETTE, 6 h.p. ....	£75 0
RUDGE, multi, 3½ h.p. ....	£60 0
RUDGE, multi, 3½ h.p. ....	£60 0
RUDGE, standard, 3½ h.p. ....	£48 15
RUDGE, free engine, 3½ h.p. ....	£55 0
RUDGE, free engine, 3½ h.p. ....	£55 0
PREMIER, 3-speed, 3½ h.p. ....	£58 0
ARIEL, 3-speed, 3½ h.p. ....	£55 0
ZENITH, 3½ h.p., Gradua gear ....	£55 13
CLYNO, 6 h.p., 1912, standard ....	£68 5
DOUGLAS, 2½ h.p., model G ....	£41 0
DOUGLAS, 2½ h.p., model K (4 days) ....	£50 0
SCOTT, 3½ h.p., standard (6 days) ....	£65 0
A.C. Sociable de Luxe (14 days) ....	£92 10
BAT, 6 h.p., chain drive, 2-speed ....	£75 0

Any other within 10 to 14 days.

## PORTLAND SIDE-CARS.

THE SIDECAR SPECIALISTS.



The best £6 6s. model made.



£7 7s. model. £8 8s. model.

Lower positions, Chater-Lea hubs, 2 6 x 2½ in Michelin tyres, flat type heavily plated rims, heavier fittings, stronger mudguards. Write for Sidecar List, two stamps.

## MAUDE'S MOTOR MART, 136, GT. PORTLAND ST., LONDON, W.

Telephone: 522, Mayfair.  
Telegrams: "Abdicat, London."

### MOTOR BICYCLES FOR SALE.

WE have the following new and 2nd-hand motor cycles in stock and ready for the road:

- 1912 2½ h.p. Douglas G; £41.  
1912 2½ h.p. Douglas H, 2-speed; £47.  
1912 2½ h.p. Premier, 3-speed and free engine; offers.  
1912 3½ h.p. Premier, 2-speed and free engine; offers.  
1912 3½ h.p. New Hudson, 3-speed and free engine; offers.  
1912 3½ h.p. New Hudson, 3-speed and free engine Jap; offers.  
1912 3½ h.p. James, free engine; offers.  
1912 3½ h.p. James, 2-speed and free engine and Canoelet sidecar; offers.  
1912 3½ h.p. Humber, 2-speed and free engine; £52/10.  
1912 3½ h.p. Multi-speed Rudge; £50.  
1912 3½ h.p. Rudge, free engine; £55.  
1912 3½ h.p. Rudge Lady's, free engine; offers.  
1912 3½ h.p. Triumph, free engine; £55.  
1912 6 h.p. Clyno and Coach-built Sidecar, as new; cost £86/10, accept £70.  
1911 Rudge, new tyres and belt, just overhauled; £37.  
1910 Triumph, just overhauled; £35.  
1909 Triumph; a bargain, £30.  
1909 5 h.p. Vindec Special and free engine; £23.  
1909 3½ h.p. Rex, Whittle belt and new tyres; £20.  
1911 2 h.p. Humber, as new; £23.  
1910 2½ h.p. Moto-Reve; £14, a gift.  
4 h.p. Rex Tricar; a gift, £10/10.

HEBDEN'S Motor Mart, Burnley. Tel.: 498 [2356]

- 1912 2½ h.p. Lady's Douglas, 2-speed and free engine, not run 100 miles.—Hebden's Motor Mart, Burnley. [2357]  
1912 T.T. Triumph Cycle, only been 500 miles; £45.—A. H. Burrell, Aire St., Castleford. [2108]  
TRIUMPH, 3 h.p., mag., new wheels and tyres; £16; photo.—80, Bispham Rd., Southport. [X5688]  
1912 Phelon and Moores; immediate delivery; £64.—The Cycle Shop, 26, Aire St., Castleford. [2110]  
1912 Rudge, standard, new April, scarcely used, as new, complete; £39/10.—Timberlake, Wigau. [X5683]  
TRIUMPH, very late 1911, standard, new Christmas, as new, not ridden 800 miles; £39.—Timberlake, Wigau. [X5684]  
TRIUMPH, T.T. roadster, late 1911, specially tuned for competition work, 1912 footrests and spring forks, been ridden by expert, complete; £40.—Timberlake, Wigau. [X5685]  
TRIUMPH, 1910, standard, thorough good order and condition, climb anything; £33.—Timberlake, Wigau. [X5686]  
6 h.p. Matchless, 1910, a.o.v., standard model, good condition, fast; £50.—Timberlake, Wigau. [X5687]  
TRIUMPH, late 1907, scarcely used, new condition, complete; £25; approval.—80, Bispham Rd., Southport. [X5678]  
VINDEC-PEUGEOT, 5-h.p. twin, mufflers, Bosch, Whittle.—Particulars, 19, Lyndon Av., Garforth, Leeds. [X5746]  
L.M.C., 3½ h.p., 1910, B. and B. carburettor, Palmer tyres; £20, or offers.—Waddington, 53, Norris St., Preston. [2087]  
BRADBURY, 1912 model, free engine, not ridden 50 miles; what offers?—P. Anders, 38, Platt Lane, Hindley, Lancs. [X5695]

MERRICK for Bradburs, Chater-Lea, Rudge, A.J.S., Matchless, etc.—Merrick's Stores, Listerhills, Bradford. Phone: 2439. [0038]

- 1911 T.A.C., perfect order; 42gus., or exchange 6-8 h.p. 2-speed Matchless-Bat or Zenith.—22, Market St., Lancaster. [2250]  
2½ h.p. Cliffe, B. and B., h.b.e., Albion, accumulator, spring forks, just re-hushed, low, in good condition; £12/10.—Cross, 17, Osborne Rd., Levenshulme. [X5644]

# 100

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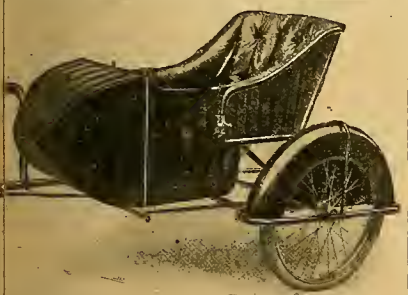
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**SCOTT'S,** Powell St.,  
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ALL MACHINES GUARANTEED AND  
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Two Multi Ridges in stock. First cheque  
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**RUDGE** 2-speed and free-engine and  
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Two Motor Cycles requiring slight repairs, first  
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Write for a sidecar catalogue which tells you the  
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Second-hand 9 guinea coach-built Sidecar ..... **£4 15**  
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by Triumphs, spare tyre and parts; interview by  
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**TRIUMPHS**, free engines, in stock; R.S.A., 2-speed  
models and free engine models, in stock; immediate  
delivery.—Motor Depot, High St., Blackheath, Staffs.  
[X5834]  
**LATE** 1911 Ivy Precision, 3½ h.p., in perfect condi-  
tion, new back tyre, horn, lamp, tools, and spares;  
reason for selling; offers.—Ellis, Salop Rd., Oswestry.  
[X5763]  
**T.A.C.**, 1911, new condition, bucket seat, £35; Bat-  
Jap, 6 h.p., a.i.v., twin, spring frame, and sidecar,  
£32; exchanges entertained.—Hackett, Moor Lane,  
Wilmslow. [X5111]  
**3½ h.p.** Brown, with mag., B.B. carburettor, good con-  
dition, guaranteed in perfect running order; any  
trial; a good sidecar machine; price £24.—W. Riddles-  
worth, 9, Lowe St., Macclesfield. [2132]  
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respect, guaranteed perfect; any trial allowed;  
price £30, or will exchange for a Morgan runabout.—  
R. Bayley, Roe St., Macclesfield. [2133]  
**MOTOSACOCHE**, 1½ h.p., mag., Whittle belt, over-  
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gain, £14, or nearest offer; lamp and generator included.  
—Box L7,952, The Motor Cycle Office, 20, Tudor St.,  
E.C. [2136]  
**ZENITH**, 1912, not run 20 miles, £50; Enfield, 1912,  
2-speed, new, £45; Zenith, Singer, Triumph, En-  
field, Galeott, 1912 models in stock; Triumph T.T. 1911,  
£32; Bradbury and sidecar, £29; Bat 6 h.p., £25; En-  
field twin, £17; Rex mag., £15.—Oswald Parker, Mel-  
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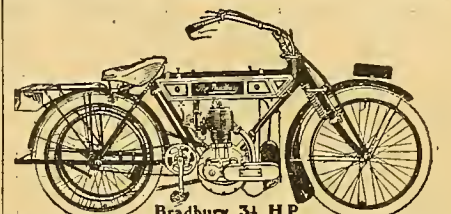
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**P. and M.**, 3½ h.p., 2-speed: £60; another coming—  
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**MATCHLESS**, 6 h.p., 3-speed, passenger model: re-  
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more Row.  
**PRECISION**, wonderful bargain, built to order; 38  
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**TRIUMPH**, free engine model, in stock.—Colmore  
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**PREMIER**, 3½ h.p., with Armstrong 3-speed, best ma-  
chine for sidecar or solo; terms or exchanges  
arranged.—Colmore Depot.  
**SCOTT**: August delivery: open for booking.—Colmore  
Depot, 27, Colmore Row, Birmingham. [2341]  
**ENFIELD** Sidecar Combination; immediate delivery:  
trials.—Colmore Depot, 27, Colmore Row.  
**DOUGLAS**: big stock bought before the T.T. boom.—  
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more Row.  
**PREMIER**—£38 buys an odd stock new 3½ h.p., differ-  
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**SIDECAR** Machines.—F.N. 5 h.p., Vindco 8 h.p., Clyno  
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John Bright St., Birmingham. [2344]  
**JAMES**, 1912, 4½ h.p., 2-speed, kick start, almost new:  
£49.—Colmore Depot, 49, John Bright St., Bir-  
mingham. [2345]  
**DOUGLAS**—Seven 1910 and 1911 2nd-hands, £20  
to £36; call and choose: sent on approval.—Col-  
more Depot, 49, John Bright St., Birmingham. [2346]  
**TRIUMPH**, P. and M. Alldays, Premier, Zenith,  
Singer, and other good 3½ h.p.'s from £20 to £40;  
call and choose: sent on approval.—Colmore Depot, 49,  
John Bright St., Birmingham. [2347]  
**F.N.**, 2½ h.p., mag., splendid order; £15.—Pabner, 33,  
Coten End, Warwick. [X5847]  
**S.A.**, 3½ h.p., 1911, new condition; £35/10.—Palmer,  
33, Coten End, Warwick. [X5848]  
**£5—22h.p.**, 26in. wheels, good running order.—223,  
High St., Bracebridge, Lincoln. [X5900]  
**N.S.U.**, 3½ h.p., free engine, h.b.c., excellent condi-  
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[X5645]

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**1912 BRADBURY'S.**  
THE IDEAL SIDECAR MACHINES.

The greatest power in single-cylinder machines, giving  
maximum efficiency and freedom from attention.  
3½ h.p., tourist .... **£48** 3½ h.p., 2-speed, chain **£53 10**  
3½ h.p., 2-speed, belt **£55** 3½ h.p., 3-speed ... **£58 10**



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Exchanges Quoted. Distance no objection.

**1911** Brand New Tourist and de Luxe REXES  
from stock. Liberal Exchanges in  
addition to special Cash Discount. Easy  
Payments at one-fourth deposit and  
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1910 2-speed **SCOTT** ..... **£37 10**  
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5 h.p. 2-speed Twin **ROC** ..... **£29 10**  
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1911 3½ h.p. **HUMBER** and sidecar ..... **£31 0**  
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3½ h.p. Magneto **REX**, spring forks ..... **£18 10**  
2½ h.p. **KERRY**, runs well, spring forks ..... **£10 10**  
2½ h.p. **ROBINSON & PRICE**, magneto ..... **£14 10**  
1911 3½ h.p. 2-speed **N.S.U.**, spring frame ..... **£35 0**  
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5 h.p. 2-speed twin **REX DE LUXE** and sidecar ..... **£37 10**  
1910 Twin **REX**, special finish ..... **£29 10**  
New 1911 3½ h.p. cone clutch **REX** ..... **39 Gns**  
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3 h.p. Magneto **BRADBURY**, spring forks ..... **£16 10**  
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Twin-cylinder **REXETTE**, to carry three ..... **£28 10**

**£3 DOWN** and 5/- weekly secures  
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2½ h.p. **BAT**, spring frame ..... **£10 10**  
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**Collier's Superbe Side-  
car, with best tyre and  
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Backed by 10 years' experience.  
Every car guaranteed 12 months.

“Popular,” Clipper or Continental tyre ..... **£5 6 0**  
“Superte” type, with best tyre, apron, etc. .. **£6 10 0**  
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Improved Quick Detachable Joints, Cranked Extra  
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1197	RUDGE, 3 1/2 H.P. Splendid order. Lamp, horn, and tools.	£39
1198	TRUMP-JAP, 4 H.P. Brand new engine. Very fast, horn.	£38
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1193	DOUGLAS, 2 1/2 H.P. 2-SPEED and CLUTCH. Lamp, horn, and tools.	£36
1109	DOUGLAS, 2 1/2 H.P. Lamp, horn, and tools.	£29
1141	ENFIELD, 2 1/2 H.P. Beautiful order. Lamp, horn, and tools.	£27
1190	F.N., 2 1/2 H.P., 2-SPEED. Lamp, horn, and tools.	£33
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1187	N.S.U., 6 H.P., 2-SPEED. Fine sidecar machine. Lamp, horn, and tools.	£45
1192	PREMIER, F.E., 3 1/2 H.P. Fine order. Lamp, horn, and tools.	£40
1176	TRIUMPH, F.E., 3 1/2 H.P. Almost like new. Lamp, horn, and tools.	£45
1200	ZENITH, 6 H.P. Splendid for sidecar. Lamp, horn, and tools.	£54
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1129	DOUGLAS, 2 1/2 H.P. Very little used. Lamp, horn, and tools.	£25
1161	SCOTT, 3 1/2 H.P., 2-SPEED, 2-STROKE. Lamp, horn, and tools.	£30
1091	SCOTT, 3 1/2 H.P., 2-SPEED, 2-STROKE. Lamp, horn, and tools.	£32
1191	V.S., 5 H.P., 2-SPEED. Good sidecar machine. Lamp, horn, and tools.	£33

# ROBERTSONS

TELEPHONE: MAYFAIR 5767

157b, GREAT PORTLAND STREET, W.

## MOTOR BICYCLES FOR SALE.

- 1908 Triumph, just been overhauled and new parts fitted: £24.—Plastow, Grimsby. [X5749]
- 1911 5-6h.p. F.N., 4-cyl., bevel gear transmission, excellent order: £28/10.—Plastow, Grimsby. [X5750]
- 2 1/2 h.p. Minerva, Bosch magneto, fitted with Roe 2-4 speed gear, handle starting: £16/10.—Plastow, Grimsby. [X5751]
- 1911 Humber, 2-speed, complete, lamp, horn, whistle, etc. run 2,000 miles, new condition: £37/10.—Plastow, Grimsby. [X5752]
- 1911 Rudge, F.E., lamp, horn, generator, Kempshall heavy tyre: £39/10.—Plastow, Grimsby. [X5754]
- 1912 Multi Rudge, brand new, complete with lamp and horn: offers.—Plastow, Grimsby. [X5754]
- 1912 B.S.A., 2-speed, brand new, complete with lamp and horn, 2 1/2 in. Dunlops; offers.—Plastow, Grimsby. [X5755]
- TRIUMPH, late 1910, condition as new; a bargain, £34.—A.G., 21, Milton St., Mansfield, Notts. [X5699]
- T.T. Rudge, not done 300 miles; too fast for owner, only wants seeing: £42.—Jim Ireland, Atherstone. [X4952]
- JAMES (1912), new, 3-speed, Dunlop tyres, belt, take sidecar anywhere.—54, Raddleborn Rd., Bourville. [X5756]
- GREAT Scott! What about the T.T.?—1910 Scott, any trial, Palmers; bargain, £30.—Vickers, Dnnchurch. [X5846]
- 5 h.p. Twin Rex, 1909, 2-speed: £23.—Main, 36, Parade, Leamington. [X5697]
- 3 1/2 h.p. Excelsior, 1910, Mahon clutch, in good order and condition: 20 gns.—Main, 36, Parade, Leamington. [X5696]
- REX, 5-6h.p., Bosch, handle starting, accessories, perfect: £22, or exchange lower power.—47, Court Lane, Erdington. [X2178]
- HUMBER Lightweight, 2h.p., 1911, new condition, lamp, horn, and spares: £23.—551, Soho Rd., Handsworth, Birmingham. [X5762]
- ROVER, 1912, 3 1/2 h.p. free engine, perfectly new, not ridden; write at once for clearance stock-taking price.—Sturgess, Garage, Leicester. [X4818]
- ROVER, 1912, 3 1/2 h.p. Armstrong Triplex 3-speed gear, quite new, ridden few miles; at stock-taking price; cannot repeat.—Sturgess, Garage, Leicester. [X4819]
- HAZLEWOOD, 2 1/2 h.p., 1912, free engine, 3 speeds, perfectly new; very special price before stock-taking.—Sturgess, Garage, Leicester. [X4820]
- 1910 5 1/2 h.p. Twin Peugeot, single gear, £23; also Millford rigid sidecar, close white wicker, spring wheel, cost £19, take £16.—42, Spon St., Coventry. [X5558]
- CLYNOS, the sidecar machines; three latest 1912 models in stock for immediate delivery; trade supplied.—P. J. Evans, wholesale agent, Sparkhill, Birmingham. [X2219]
- LADY'S Hobart, 1911, 3-speed model, as new; £32, complete.—P. J. Evans, Sparkhill, Birmingham. [X2223]
- 3 1/2 h.p. Minerva, overhauled, engine re-bushed, new piston, cylinder re-bored, new belt, take sidecar: £12.—Morris, Rubber Merchant, Melton Mowbray. [X5892]
- SINGER, 2 1/2 h.p., 1912, standard, extras, ridden 300 miles, going in for sidecar, splendid hill-climber: £30, or nearest offer.—45, George St., Balsall Heath, Birmingham. [X5716]
- 5 h.p. Twin Rex, 1908, free engine, handle starting, Bosch mag., spring forks, very low riding position, splendid condition: £15, bargain.—A. Holland, Clarendon St., Coventry. [X5610]
- 2 1/2 h.p. Clyde, mag., B. and B., h.b.c., low, P. and H. lamp, generator, Shamrock belt, new spare Olmcher tyre; trial here; bargain, £9/10, offers.—F. Brookhouse, 6, Buller Rd., Leicester. [X2280]
- CHATER-LEA J.A.P., 3 1/2 h.p., free engine, Bosch mag., Druid spring forks, B. and B. lamp, generator, spare tube, etc., condition as new; bargain, £27/10.—923, The Motor Cycle Offices, Coventry. [X5764]
- £5/10.—Taken for debt; great bargain.—3 1/2 h.p. Whitley, recently overhauled and enamelled, low, fast, rebushed, new rings, new belt, new accumulator, heavy Dunlops, climb anything; trial here.—Zar-Mo Manufacturing Co., Sketcheley, Hinckley. [X5745]
- 1912 Rudge, T.T., also F.E. Zenith, Singers, immediate delivery: 1911 F.E. Singer, just overhauled by makers, £39; two 1911 Triumphs, standards, condition excellent, not ridden since March, being taken in exchange: £37 each.—Midland Cycle Co., Coalville, Leicester. [X5866]
- 3 1/2 h.p. 1909 Torpedo Minerva, Amac, h.b.c., accumulator, in splendid trim, £13; also 3 h.p. Fafnir, mag., B. and B., h.b.c., Palmer cords, in fine order, £12; exchange both for 2-speed sidecar combination; would ride 50 miles on either.—Patman, Dysart Rd., Grantham. [X2240]

## SECTION V.

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# THE MOTOR CYCLE

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Subscription rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York.  
 PARIS: Smith's English Library, 243, Rue Richelieu. AUSTRALIA: Gordon and Gotch, Ltd.;  
 Melbourne (Victoria) Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.),  
 and Launceston (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd.; Wellington, Auckland,  
 Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 132, Bay Street Toronto. SOUTH  
 AFRICA: Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

### The Cyclecar.

PROBABLY one of the most interesting topics of conversation among motor cyclists, particularly sidecarists, at the present time is that of the cyclecar. The motor bicycle and sidecar, although regarded at first as more or less makeshift device, has proved its worth and survived opposition from other types of motor cycle passenger carrying vehicle. A miniature motor car embodying all the advantages of a sidecar and none of its disadvantages has been the dream of the motor cyclist and the ambition of many motor cycle engineers and designers for years past.

Are these desires about to be realised? In other words, will the new type supplant the sidecar in popularity or only become another class of motor cycle passenger vehicle with a limited sale, and consequently high cost? Designers and builders of cyclecars appear to have followed two distinct lines in the production of vehicles of this class—those built on motor bicycle lines and those constructed as miniature replicas of motor cars.

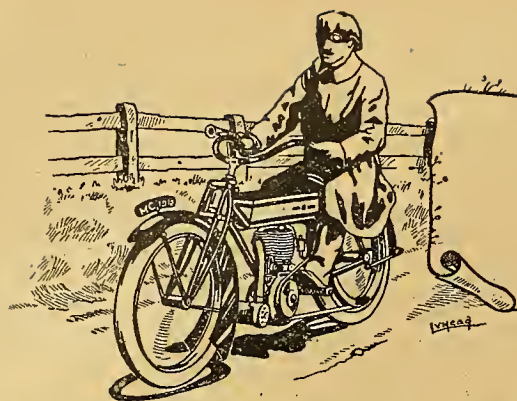
On many of these machines stock parts originally designed for both motor cycles and cars have been used, and when this policy has been followed the result *ensemble* has usually been a most unhappy one. A cyclecar is to be a success it must be made throughout with parts specially designed for it, and it is rather a costly, although most necessary, feature of the future that a complete set of shop patterns be prepared. This and other works' processes can only be undertaken by firms with capital who are prepared to bear such costs as these over a large output, otherwise the price of the completed vehicle must be prohibitive.

There is no gigantic difficulty in making a motor car on small lines, omitting some of the refinements which are not absolutely essential to a vehicle of the cyclecar class, but the obstacles in the way of marketing it at a price which will bring it within the reach of motor cyclists are great. Only the largest and best-equipped firms in the motor cycle business can hope to make the cyclecar remunerative at the price they will be called upon to produce it, either by placing on the market a set of parts from which the assembler can build a machine or marketing a complete vehicle in sufficiently large quantities to enable the price to be kept low.

In our opinion there is no necessity for sidecar makers to worry themselves unduly regarding the immediate future, even if the cyclecar should take a sudden bound into popularity, as the handy sidecar will remain as a passenger-carrying adjunct to the motor bicycle for some time to come. Many will still prefer it to any form of four-wheeler because of its extra speed (particularly uphill), low cost of upkeep and reduced running expenses, initial lowness of price, and ease of storage.

The *jeunesse dorée* of the motor cycle world—they who always invest in the latest and best irrespective of cost—will be the cyclecar makers' customers for a year or so at any rate, but it will be some time before the cyclecar, fascinating as it may be, can oust the sidecar from its popular position. The cyclecar appeals strongly to the motor cyclist who as a sidecarist can afford to keep two machines, but the greatest feature of the sidecar is its easy detachability, enabling the owner to have the advantages of two machines in one. This will cause sidecars to die hard.





## PREPARING FOR THE SIX DAYS' TRIAL.

BY AN OLD COMPETITOR.

**I** DO NOT propose to travel over familiar ground, and describe how such basic details as engine, carburetter, and ignition should be tuned up. A rider who is *au fait* with these things needs no instruction from me, and the novice should send his machine to the factory, and personally see that the head tester tries it before return. I will only suggest that in all modern six days' trials genuine freak hills are now part of the daily menu; and therefore a carburetter which can puff out a good head of gas at low engine speeds, and a magneto timing which can give a real hot spark with the piston on dead centre, are absolute essentials. Big choke tubes and early timings should be reserved for Brooklands.

### Tyre Troubles.

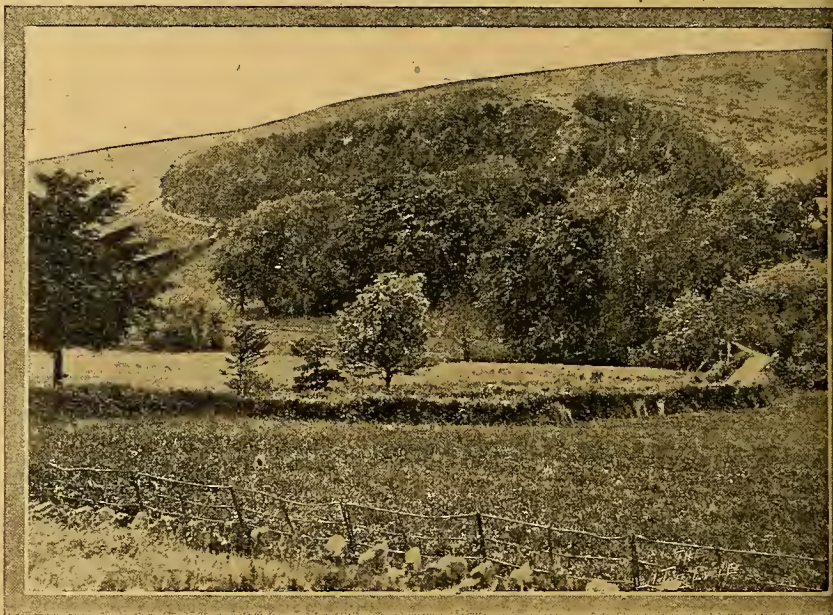
The trouble most likely to rob the aspirant of his gold medal is spelt with a T—tyres! Hence I plump for the heaviest beaded-edge tyre obtainable, with a good thick non-skidding tread.

If it be fitted immediately before the trial, it should be attached and removed three or four times, till its beads grow supple, or else ridden 100 miles and then removed and replaced. A brand new cover may spoil the score sheet, by protracting the time lost over a puncture. Within the cover there should be an endless tube at the start, because endless tubes are less likely to give internal trouble than butts; there is no reason why the tube should be new; an unpunctured tube that has done 2,000 miles without a puncture is a proved article; a new tube may split.

### After Tyres, the Belt.

The majority of riders using *rational* covers get through six days without inflation; but should a puncture occur, the endless tube should be cut out, and a butt-ender inserted; never employ a type of butt-ender that has not been tested. One butt-ender may be buttoned round the handle-bar, and a second spare may be furled round the body under the waistcoat. The tyre repair kit is best carried in a separate bag, and should include a gaiter in case of emergencies.

After tyres the most probable cause of lost mark is the belt. If the route be severe, belt troubles are inevitable, since there is almost sure to be rain on some of the days. My own tip is to carry three belts. One is the "service" belt, always used when time permits, and it contains two adjustable fasteners. By the aid of these fasteners, and an adjustable pulley time need seldom be wasted in punching and drilling if the belt has to be cut, care is taken to cut off the oldest bolt-hole of the four.



The easy road out of Lynmouth (avoiding Countisbury Hill), leading from Oare Church to the main Porlock Road.

A second belt is carried looped round the tank ready for rapid substitution if the "service" belt gives trouble when time is pressing. It is cut to suit a medium gear, and has a plain hook fastener. The third belt is carried in a case, and is ready for virulent belt slip on rain-soaked mountains; it is cut to suit the lowest obtainable gear, and also has a hook fastener; some riders would use a well-stretched leather belt for this third belt, and, if so, they should carry a stick of Beltecum. The pulley flanges may be drilled all over, if of stout section: otherwise they should be drilled at the height of the lowest gear.

Control wires need attention, which they do not often receive. At the start of the Six Days, all control wires should be open to the full adjustment, and their





TOURING IN DEVON. View of the Coast Road from Hunters' Inn to Woody Bay. Observe the low wall at the side of the road, and the big drop into the valley.

nipples should be perfect; if the rules permit, a spare exhaust lifter wire, tested for fit, should be carried throughout—no breakage is more aggravating.

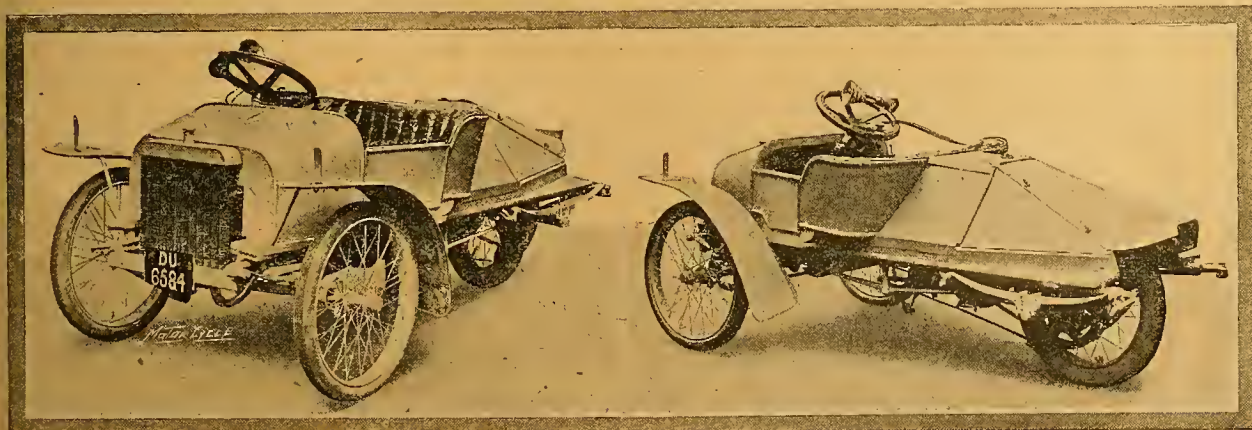
The magneto should be fully shielded, and sparking plug protectors are desirable.

A complete kit of spare valves and springs and cotters, all tested for fit, should be carried, and if the makers' valve cotters have a tendency to burr, special cotters of harder metal should be used, or the strength of the valve springs reduced.

A petrol filter is advisable, and some riders like gauze air screens, which prevent dust entering the

engine. Such screens should be cleansed whenever a chance occurs in dry weather, for if dust collect it will interfere with carburation.

Finally, the time schedule is the real crux of the trial, and consequently a reliable speedometer and two watches are needed; it is foolish to rely on a single watch, which may become erratic or stop altogether. The regulations should be carefully studied, and a half inch map of each day's route should be carried. You may lose your way just when time is most pressing, and the arrowman has had a breakdown.

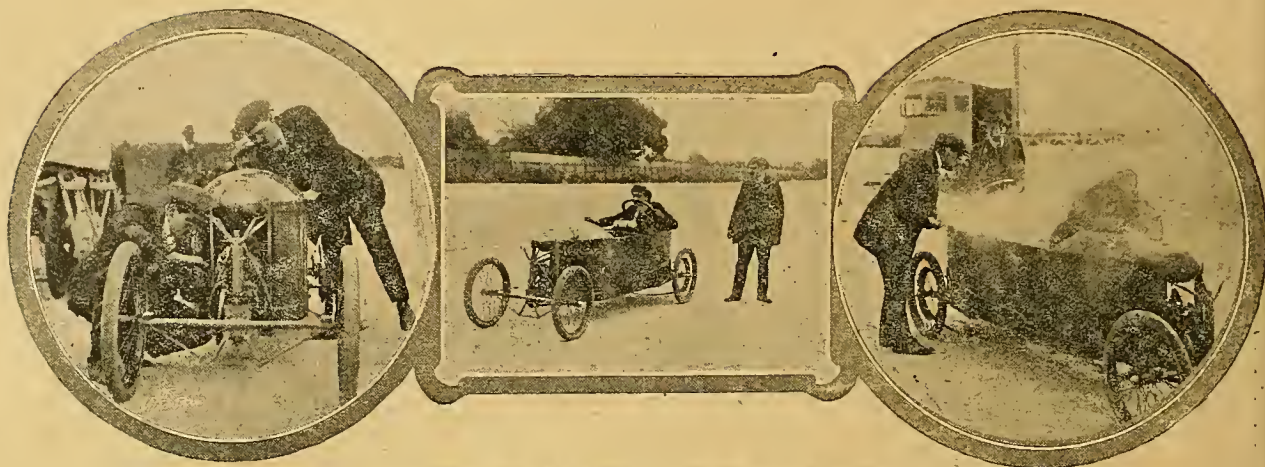


AN UP TO DATE CONVERSION.

It is difficult to believe that the above side by side two-seater was originally an 8 h.p. twin-cylinder Rexette with tandem seats. It was "converted" by Mr. F. H. Hand, of Earlsdon, Coventry.



## NEW CYCLECAR HOUR RECORD.



## INCIDENTS OF THE NEW CYCLECAR HOUR RECORD.

The final touch-up before the start.

H. Ward (Bedelia) starting.

Putting out the fire after the eleventh lap, caused by the heat of the exhaust pipe.

ON Wednesday last week a Bedelia cyclecar, driven by H. Ward, regained the hour record previously held by the G.W.K. The record now stands at 45 miles 278 yards, or 388 yards better than the old record. Ward was lapping at 50 m.p.h. for six consecutive circuits, but speed fell off in the last six laps caused by a control wire fouling its protecting tube and preventing the ignition from being fully advanced. The lap speeds as given out by Mr. A. V. Ebbelwhite (timekeeper) were:

Lap.	Speed. m.p.h.	Lap.	Speed. m.p.h.	Lap.	Speed. m.p.h.
1	44.95	7	50.07	13	40.80
2	50.33	8	49.82	14	38.88
3	50.38	9	50.12	15	38.55
4	50.02	10	43.95	16	35.71
5	50.33	11	50.43	17	35.05
6	50.38	12	45.50		

The effect of the ignition trouble is very plainly seen in the lap table. Two attempts were made previous to the successful effort, as after running half an hour on the first attempt the driver threw out a blazing piece of floor cloth and then pulled up with smoke

rolling from the back of the machine. Sand and water were hastily obtained and the flames were extinguished after a few minutes, and before they had time to damage more than the wood side pieces, floor boards, and rear crosspiece. An exhaust pipe placed too close to the woodwork of the frame caused a conflagration which was quickly extinguished; thereafter the woodwork in the neighbourhood of the exhaust pipe was flooded with water and no further trouble occurred. The machine used had not been run in or tested on the track previous to the record. The 80 by 100 mm. 90° twin-cylinder engine was exactly similar to standard except that a Nilmelior magneto was fitted with a special contact maker designed to interrupt at the correct firing point to suit the angle of the cylinders. Minor alterations which had been embodied in the chassis design were a tubular torque rod between the engine crank case and the frame, thicker steel steering wires running in flexible metal casings, and an improved type of foot brake, which advances will be incorporated in further deliveries of Bedelia cyclecars which are sent over to England.



The Bedelia at full speed round one of the bends.



## OCCASIONAL COMMENTS.

By "IXION."

**A Cyclecar Tourist Trophy.**

Only one cyclecar—a grey streamline Rollo—was in evidence at Douglas during the Isle of Man races, but its presence caused many riders to remark that a cyclecar T.T. would be extraordinarily interesting. Suppose the fact of the matter is that at present there are not sufficient cyclecars made to justify a race, and many of their manufacturers are small firms, not well-endowed with capital, there would have been no chance for a race to fill.

With two or three exceptions cyclecars are rather in the experimental stage at present, but by next year or the year after they may have entered upon a major boom. They should develop faster than any previous type of motor vehicle has done, as the engine, the ignition, and the carburation were all untried problems at the advent of previous types; these are now successfully standardised, and it is only the chassis of the cyclecar which needs perfecting. Consequently a cyclecar T.T. will soon be required, the type is to be permanent, and it is conceivable that a race would fill in 1913. If the race were organised in good time, and the conditions settled before autumn, some of the more sporting and wealthy clubs might assist the experiment by designing and building special cyclecars, and putting up an experienced member to drive the vehicle. Some enthusiasts are clamouring for a sidecar T.T. I can only say I do not envy the passengers. Fancy occupying the rear of a sidecar in a T.T. race when the driver is being excited! At speed on corners sidecars are often readily overturned at the best of times, and accidents would be somewhat numerous.

**Buying a Racing Mount.**

It is the custom of the trade at present to send out their T.T. roadsters tuned for racing speeds. This implies three main items, viz., early timing of the ignition, special valve setting, and special carburettor setting.

The two first items are perfectly adaptable to ordinary work, but the special carburettor setting usually implies a certain difficulty in starting. The "choking" device is of large aperture, and the machine requires to be pushed off very energetically before an explosive mixture can be sucked out of the jet. Such setting is a nuisance in ordinary roadwork, especially when frequent stoppages are necessitated, and purchasers will do well to modify it by fitting a small orifice over the "bottom air" orifices. This enables the rider to get a fierce starting suction on the throttle, and yet to retain the free pull essential to really high speeds.

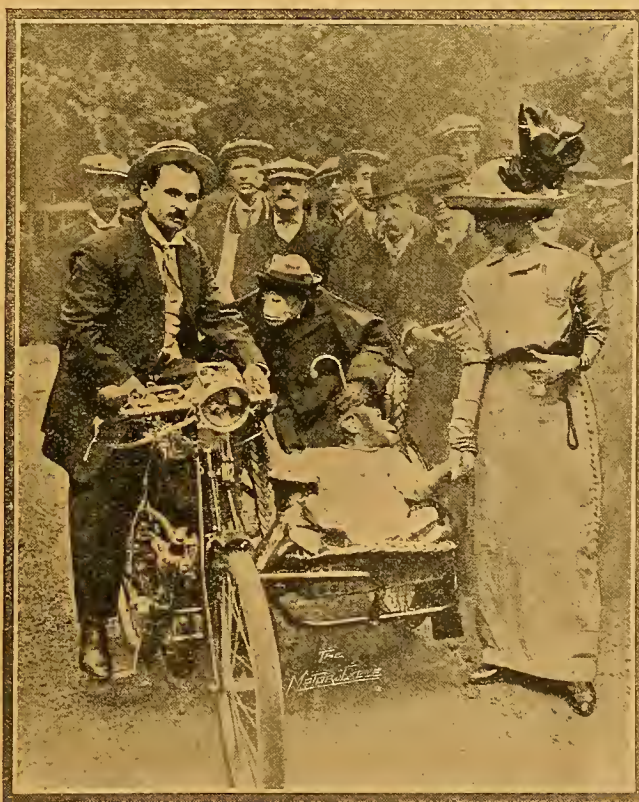
**Variable Gears.**

Once again variable gears emerged triumphantly from a fierce racing test. Gears have now vindicated themselves magnificently in two successive races, as well as in last year's Six Days, and when the Taunton Six Days are over, their position should be completely assured. In the old days we eschewed variable gears, because they increased the certainty of trouble; but now it is hardly too much to say that a first class gear is as reliable as a magneto or a carburettor. Apart

from this will the lessons of the T.T. Races shape the tendency of development in favour of the countershaft gear? Hub gears proved their reliability, but in the course of practice and racing we learnt two definite facts. The one is that extra weight is best situated in the centre of the wheelbase: a heavy back wheel does not enhance perfection of steering, either on grease or at high speeds over dry roads. The other is that small engine pulleys are not ideal, and that the two-step drive, embodying a 6in. or 8in. drum as the minimum, avoids belt troubles and prolongs belt-life.

**A Luggage Carrier Problem.**

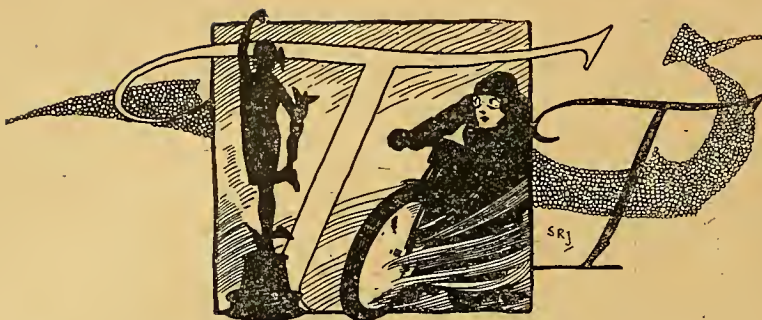
What is the use of providing a strong carrier with plenty of space on it if any bag strapped thereto hits the unfortunate rider about the region of his back brace-buttons? After years of tribulation we have reached a point at which we can rely on receiving a strong and spacious carrier as an integral portion of any machine we order. But on many machines carrying a large bag means a mass of blue and black bruises on the small of one's back. I have been riding two machines fitted with very similar carriers. I put my Brooks kit bag on the one carrier, and never knew it was there, except in mounting, when I had to vault high. I put it on the other, and it ceaselessly nagged my vertebræ every mile I rode.



THE THEATRICAL GARDEN PARTY.

Consul, and his adopted daughter, Nancy (who appears to be shy of having her photograph taken), arrive by motor cycle and sidecar.





## THE FUTURE OF THE T.T. RACES

### SOME SUGGESTIONS.

By B. H. DAVIES.

**A**FTER a T.T. race regrets and gloatings are rife, and without doubt an immediate vote would command a huge majority for a repetition of the T.T. races. Towards winter the blood cools down a trifle, and it is difficult to awake private enthusiasm, whilst works managers are thinking more of undelivered material and angry customers than of defeating ancient rivals in a road race. As a consequence the fate of the T.T. often trembles in the balance as December comes round. History is tolerably certain to repeat itself, and by next Christmas it may once more be exceedingly doubtful whether there shall be a race in 1913.

The first question we must ask is

#### Are the Races worth while?

A famous constructor remarked to me in Douglas the other week, "You know I voted for continuing the races, although other makers voted for abstinence because they thought they could not beat us and one or two others. Why, we learnt 75% of what we know from T.T. experience, and if the others keep out of racing we shall stay on top indefinitely!" That was a manufacturer's private opinion, and the opinion, moreover, of a manufacturer whose special reputation has been won by reliability and by durability; his machines don't break down, and they don't wear out quickly. Or again, take points accessible to the general public. It is an obvious fact that the 1911 races once for all established variable gears as integral parts of a full roadster specification; that variable gears have increased the popularity of touring by 50%, and have multiplied sidcar sales by five. It is early days to say what will result from the 1912 races. Doubtless there will be many a subtle and secret modification of internal construction, new cam shapes, new valve timings, new valve sizes, and new metals applied to valves, etc. There will probably be fresh attention given to steering design and weight distribution; the diamond frame may possibly time its decline from last month, the combined belt-cum-chain drive should gradually acquire popularity. In short, the T.T. exercises a profound and all-pervading influence upon design and manufacture; and if this is so, whatever the trade think about it, private users will certainly vote to perpetuate an event which has brought many valuable benefits.

#### Racing and the Industry.

If it is agreed that the T.T. must be perpetuated, the question arises whether in its present form it satisfies the needs of the moment, or whether like the reliability trials, it requires stiffening up. The routes and regulations of all legal limit trials have been made vastly more stringent during the last two years, but the

T.T. race of 1912 was similar to that of 1911. It should be remembered that the present race is exact chiefly from a rider's point of view. It is not a very frightful undertaking regarded as a mechanical trial. A ride like Franklin's 300 miles on Brooklands takes far more out of a machine, though it requires a machine of rather different type (or tuning). The prevalence of variable gears has relieved the demand for a flexible engine within limits, cooling difficulties have been largely surmounted, brakes last out well. As a mechanical test the existing course is deficient in two main respects: it is very short (187 miles, as compared with Franklin's 300 miles), and it does not include a really steep hill.

Snafell would be contemptible were it not for the corners—there is no extremely severe grade from bottom to top. Thus any stiffening of the T.T. could only be obtained by lengthening the course, as a better hill-climb cannot be found nearer than the Alps, and as the riders could not be set to race over more than 200 miles at a stretch on two-wheelers, the first stiffening of the race must take the form of a two-day race with up to 200 miles racing each day.

#### The Financial Side of the Question.

Turning to the financial aspect, there is no doubt that the A.C.U. must face a loss on this year's race, though the loss will not be so great as one might expect, since expenses were economised.

The A.C.U. is now offering so many benefits for a 5s. subscription that its increased membership could not bring it a large balance to play with. If there is no trade bond next year a Manx race should be more remunerative. If many trade concerns once more



A SIGN OF THE TIMES.



## The Future of the T.T. Races.—



THE FIRST LADY MOTOR CYCLIST IN MANXLAND.

Miss Eileen Woods, daughter of Dr. Woods, and her 2 h.p. Moto-Reve.

abstain, the A.C.U. must count on more private entrants; and its obvious plan is to enquire into the cost of running off the 1913 T.T. in France, where sixty additional entries could easily be secured.

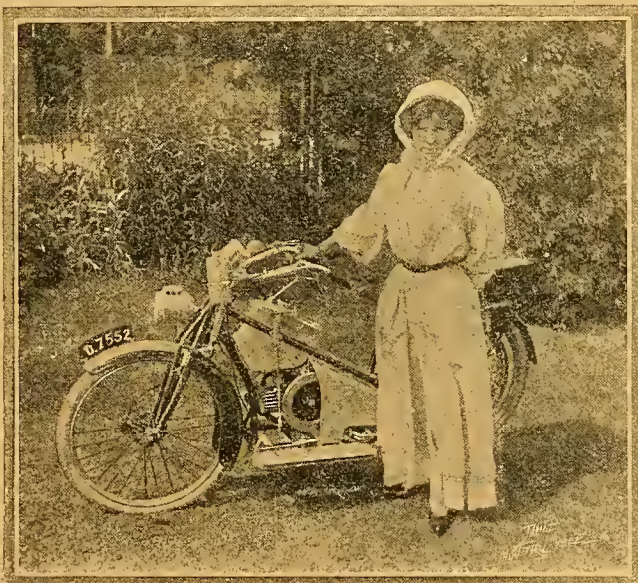
A French course would be considerably more convenient for most British spectators, and would tap the huge London district of a great army of petrol enthusiasts. The sole difficulty about a French course would be the inclusion of a real hill; police expenses might be greater, as a Continental crowd is comparatively uncontrollable.

The line of progress seems, therefore, to indicate a race over a longer distance, possibly in the island, if the trade compete; probably in France if the trade

are so short-sighted as to abstain, and this would in any case be a two-day race. The need for a prolonged race is not so urgent but that a 187 mile course would suffice in 1913, but by 1914 a two-day race will be inevitable if the lessons to be learnt are to touch the maximum. The order and number of the finishers in any previous race would probably have shown large variations if the race had been continued for a second day.

## The Second Day.

On the second day the precedent of the Grand Prix would be followed, and only those who finish within a time limit on the first day would be allowed to start. Moreover, it should be permissible for every rider to change both his tyres under strict observation. I regret this necessity, for tyres need development more than anything else we use, but in a race a rider's life may depend upon his front tyre, and for this reason we have no right to make a road race into a tyre test.

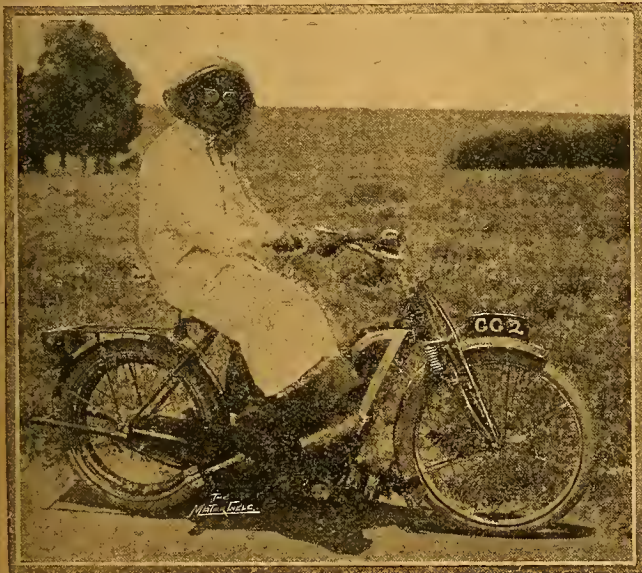


A FRENCH LADY AND HER ENGLISH MOUNT.

Malame Alderson, of Orpington, Kent, a new member of the Woolwich P. Umstead and District M.C. This French lady rides a 2½ h.p. two-speed, Douglas, and is very keen on competitions. She has won prizes at rinking and tennis, and finds her motor cycle invaluable in connection with sporting and social events.

## DEMONSTRATION OF A TWO-JET CARBURETTER.

Mr. H. D. Ashworth, who is representing Messrs. C. Binks, Ltd., recently demonstrated to us the capabilities of his firm's two-jet carburetter, fitted to a 3½ h.p. single-cylinder machine, and, although greatly handicapped by the traffic, gave an excellent proof of its flexibility, which was remarkably effective. The pick up was very rapid, while the slow speeds at which the engine could be run on the road were decidedly more extreme than the average. In fact, the writer calculated, by timing the beats, that at its slowest the engine (an inside flywheel type) was turning at only about 160 revolutions to the minute. There was another very valuable point, too, that was noticeable about the working of the Binks, and that was in suddenly opening the throttle to the full, it did not seem to upset the mixture.

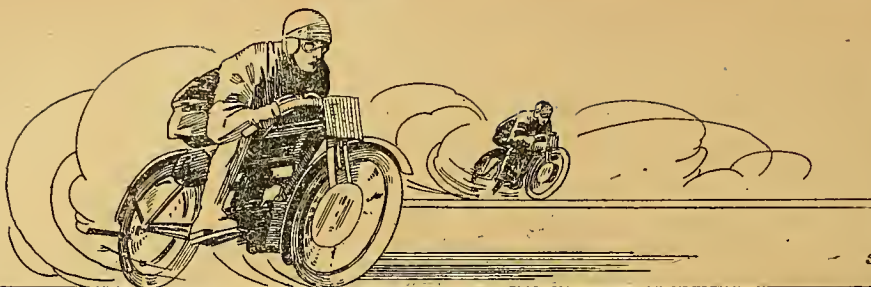


THE MOTOR CYCLE IN THE TRANSVAAL.

A pioneer lady motor cyclist in South Africa mounted on a twin Forward



## QUESTIONS & REPLIES



S.S.

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Leeds to Grimsby and Bangor.

**?** (1.) Would you kindly give me particulars of the best route to take from Leeds to Grimsby, starting from Leeds and avoiding the hilly districts, and also the mileage? (2.) Also the best route to Bangor in Wales, and the mileage starting from Leeds?—I.F.

(1.) Leeds, Hambleton, Selby, Howden, Newport, Welton, Hull (cross Humber to New Holland), Uleby, Laceby, to Grimsby (eighty-two miles). (2.) Leeds, Huddersfield, Marsden, Stalybridge, Stockport, Northwich, Chester, Hawarden, Rhuddlan, Abergelle, Conway, to Bangor. This route (about 160 miles) is hilly, but you cannot cross the Pennines without encountering hills. If you wish to avoid the ferry from Hull to New Holland you can go by Doncaster, Gainsborough, Market Rasen, Caistor to Grimsby, but this route is longer.

### A Trip to the Continent.

**?** A friend and I intend to take a short trip abroad this year. We wish to do from 800 to 1,000 miles, and shall spend about two weeks on the road. The only town we definitely wish to visit is Paris. Can you advise us of an interesting route with fairly good roads? We shall be glad to have any suggestions which you can make.—INDIAN.

We should advise you to join the Scottish A.C., or a club affiliated to it, which is in turn working in conjunction with the A.C.U. or A.A. and M.U. This will entitle you to apply to the Touring Department of either body, where every facility is given to those wishing to tour both in England and on the Continent. We should not advise you to visit Paris with your machine. What you had better do is to cross over from Newhaven to Dieppe, or Southampton to Havre, and run down the Valley of the Seine, from Dieppe to Rouen *via* Tôtes, or from Havre to Rouen *via* Caudebec, continuing through Rouen and Les Andelys. If you cross to Dieppe a good plan is to go to Pontoise; there leave your machine and go into Paris by train. From Pontoise there is a road encircling Paris from the south, going round Versailles, which allows you to see the Palace. There is a certain portion of bad road to be covered going round Paris, but not so much as going in and out of the city, where the roads are appalling, and the traffic very badly regulated.

### Hot Spark at Slow Speed.

**?** (1.) I have had my machine one year and ridden 4,000 miles, and now it does not start (by decompressor) as easily as when I first had it. It will fire at a sharp walking pace, but will not pick up when put in free engine. Originally it would pick up after firing twice. The decompressor itself is in perfect condition, and the machine runs splendidly. Could this be owing to the magneto not giving quite such a hot spark at slow speeds as when new? The points are properly adjusted, etc. (2.) I do most of the distance with sidecar, and get 1,400 miles out of a tin rubber belt. Is this what I must expect with the variable gear fitted to the machine? (3.) Do you recommend a rubber or leather belt for a gear of this type, which is naturally rather severe on the pulley and belt as regards slipping for starting, etc.?—H.E.C.

(1.) We should think it is quite possible that the magneto is not giving as good a spark as it was when new. You might try adjusting the sparking plug points a little closer. The mileage you are getting from the belt is not at all bad considering the nature of the gear. A rubber belt is best for this type of gear.



L. W. Learmount, of Penang, Straits Settlements, who is an enthusiastic rider of a 3½ h.p. Rudge. The owner tells us that he has no trouble to keep the engine cool even when riding "all out" mile after mile in a temperature of 150°. Incidentally, the picture shows the riding apparel of motor cyclists of the Straits Settlements.

### Newcastle-on-Tyne to King's Lynn.

**?** I am riding from Newcastle-on-Tyne to King's Lynn, Norfolk, next week-end—could you kindly give me the most direct route? I do not mind riding through big towns. Will there be any stiff hills, and in what condition are the roads, also what is the distance?—E.G.G.

Your best route would be as follows: Newcastle, Nevill's Cross, Darlington, Northallerton, Boroughbridge, Wetherby, Aberford, Ferrybridge, Doncaster, Retford, Tuxford, Newark, Sleaford, Spalding, Long Sutton, to King's Lynn. There are hardly any hills worthy of the name on this route. The surface is good almost the whole way. The distance is approximately 220 miles.

### A Lightweight in Switzerland.

**?** I should be indeed obliged if you would kindly give me the benefit of your advice and experience in the following: I purpose taking a tour of some 1,600 miles roughly as follows: Boulogne, Paris, Geneva, Chamounix, Little and Great St. Bernard to Martigny, thence over Simplon to Domodossola, thence over St. Gothard, Grimsel, and Furka Passes to Interlaken, Zurich, Lucerne, over the Arlberg Pass to Innsbruck, Meran, over the Stelvio to Colico on Lake Como, thence over the Splügen Pass to Basle. This may seem a terrific programme, but I only weigh 9½ stones, and shall travel practically without luggage. I shall never travel more than 100 miles per diem on the level, and of course have some kind of variable gear. Taking this into account, I fancy a 2½ h.p. machine will suit me better than a 3½ h.p. one. What do you think? With reference to the passes mentioned above, none have a grade of more than 11%, and that only occasionally. All are traversed by diligences, and are regularly crossed by motor cars.—H.St.J.B.

With regard to your route. There is now a road from Chamounix to Martigny, but it is in a very bad state, and it is said that its condition is dangerous. Martigny is inaccessible over the Great St. Bernard, and motor cars are forbidden from the Swiss frontier on. You could easily do the journey on a 2½ h.p. change-speed, except that the pace would be somewhat slow travelling over the long straight roads in France to your destination.



to enjoy the tour at all and safely reach your destination, we should advise you to avoid Boulogne and Paris, and to travel *via* Newhaven and Dieppe, then through Rouen, Chartres, and Orleans, where the roads are very much better. Only those who have ridden in and out of Paris know what this means. We should strongly recommend you to consult the managers of the A.A. and the R.A.C. Touring Departments to which you are entitled if you are a member. A lightweight machine with a variable gear should suit you admirably.

#### Second-hand Machine for Beginner.

**Q.** I am trying to procure a good second-hand motor cycle. I can only afford about £15 15s. for a beginner's machine. Should I be better treated by a dealer or a private seller? Could I get a decent machine to last a year to learn upon for the amount mentioned?—H.H.

You can get a fair second-hand machine for about the price mentioned in your letter. As to whether you go to a dealer or a private owner does not matter very much, as often bargains can be picked up from either, but before purchasing the machine you should get an independent expert's opinion on it, so as to make quite sure that the machine is what it is represented to be.

#### Carburettor Adjustment.

**Q.** I should be much obliged if you could help me with regard to the following. I have a 1912 twin Fafnir 70×80 mm. (magneto) which I cannot get to run at all slowly. When in the low gear (10 to 1) or free engine, the engine races away at a very high speed (even when retarded). The carburettor is a 1908 pattern. The throttle control is extremely poor, and seems to have no effect at all on the speed. I may say the carburettor was recently fixed on a single-cylinder engine; perhaps it is not suitable for engine, or would a more recent make be advantageous?—LC 1811.

The trouble is probably due to bad carburettor adjustment. What you have to aim at is to get a strong mixture and little of it to run at slow speeds. Obviously you would get better results by fitting a modern carburettor.

#### Fulham to Wellington (Salop).

**Q.** Will you be good enough to forward me details of the best route from Fulham to Wellington, Salop, avoiding hills, and if possible quoting mileage?—

F.E.H.

Your best route would be as follows: Go straight over Putney Bridge, down Upper Richmond Road, and straight as you can go through Richmond, Twickenham, turning to the right across the River Crane at Fulwell Park, go straight on till you come to the Bath Road, then go through Colnbrook, Slough, Maidenhead, Henley, Nettlebed, Benson, Dorchester, Oxford, Woodstock, Chipping Norton, Moreton-in-the-Marsh, Evesham, Worcester, Kidderminster, Bridgnorth, Wellington. The distance is approximately 170 miles.

#### Camborne-Reading-Aberdeen.

**Q.** Could you inform me the best routes from Camborne to Reading, passing through Ashburton, and from Reading to Aberdeen, avoiding as many large towns as possible, but at the same time taking as little time over the journey? Please inform me where to look out for police traps?—A.McN.F.

Your best route would be as follows: Camborne, Redruth, Zelah, Mitchell, Bodmin, Liskeard, Callington, Two Bridges, Ashburton, Chudleigh, Exeter, Honiton, Chard, Ilchester, Ilminster, Edmonton, Hindon, Amesbury, Andover, Whitechurch, Kingsclere, Aldermaston, Reading. To Aberdeen: Reading, Marlow, High Wycombe, Amersham, Dunstable, Luton, Hitchin, Biggleswade, Eaton Socon, Buckden, Stilton, Stamford, Grantham, Newark, Tuxford, Retford, Bawtry, Doncaster, Ferrybridge, Aberford, Wetherby, Boroughbridge, Leeming Lane, which follow right to the end, then go through Bishops Waltham, Corbridge, joining the Carter Fell road beyond Otterburn, over Carter Fell to Jedburgh, Earlston, Lauder, Dalkeith, Edinburgh, Granton, by ferry to Burntisland, Kinross, Perth, Coupar Angus, Glamis, Forfar, Brechin, Stonehaven, to Aberdeen. You can, if you like, go from Burntisland to Kirkcaldy, then through Cupar, Newport, Dundee, Arbroath, Montrose, Stonehaven, to Aberdeen. We do not know of any police traps on the routes we have given.

#### Engine Noises when Running Light.

**Q.** I have a 1907 Triumph which is a simple, reliable, and entirely satisfactory machine, but the engine knocks when there is no pull, such as down hill or on the flat, a rattle which I ease by using the exhaust lever a little, when at the same time there is an increase of speed. The compression bears 14 stones on the pedal a few seconds. (1.) What requires to be done? (2.) Would it be better to send the engine by itself to Coventry or take the bicycle complete to a local engineer, and let it be repaired there?—UBIQUE.

The rattle, of course, may be due to a loose bearing. To find out if this is the case it would probably be necessary to take down the engine. We should think it would be advisable to send the engine complete to Coventry and let the makers overhaul it. Of course, the rattle may only be due to the noise of the valves, and we should recommend you to try and make certain of this point before going to the expense of having it sent away. The knock is likely to be more serious when it occurs with the engine running under load.

#### Overheating.

**Q.** I have a 1911  $3\frac{1}{2}$  h.p. free-engine Triumph motor cycle (purchased new), and wish to know if it is strong enough to take a sidecar? The combined weight of self and passenger would be about twenty-three stones. The gradients in this district are very slight, the steepest being, perhaps, 1 in 20, and only for short lengths of a furlong or so. If I can use a sidecar with the machine, how much should I lower the gear? For solo work, I use 4½ to 1 gear. If the gear is lowered to, say, 5 or 6 to 1, would it in any way be detrimental?—E.M.R. (Jhansi, India).

A Triumph should take a sidecar very satisfactorily on the gradients you mention. We should recommend you to lower the gear to about 5½ to 1. This should not cause overheating. The heat of the atmosphere makes some difference, but not as much as might be supposed. *e.g.*, Captain Scott's air-cooled motor sleigh had to be abandoned because it overheated in South Polar regions. On the other hand, some of our correspondents assert that their engines never overheat in hot countries (120° Fahr. in the shade, for instance).

#### EXPERIENCES WANTED.

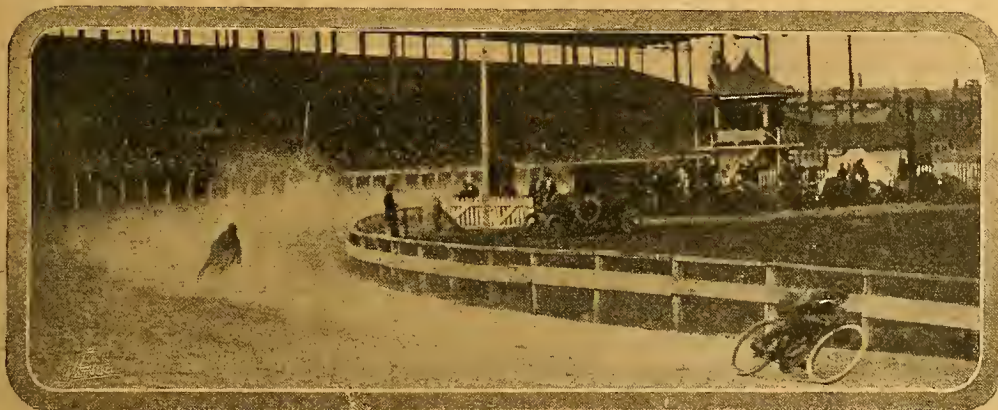
"R.C.G." (Bridlington).—5.6 h.p. Bat, with and without sidecar.

"E.P.R." (Cowbridge).—Heron two-speed fitted to 3½ h.p. with chain drive and sidecar.

"Zenith" (Glasgow).—Decompressors on a big twin, particularly as regards ease of starting and slow running.

"Roc" (Rugby).—Puncture-proof bands.

If "Shone" (Hawarden) will comply with our rules his query will be dealt with.



AN IMPRESSION OF SPEED ON A TORONTO RACE TRACK.

The picture gives an idea of the immense crowd (the stand is packed) which witness the meet, the sharpness of the bends, and the extraordinary angle the riders assume in rounding the bends at speed. On these dirt tracks the dust is appalling and dangerous when several riders are competing together.



## A Trial of the Arden Cyclecar.

IT is some weeks since we described and illustrated the Arden cyclecar made by the Arden Motor Co.,

Berkswell, and now, thanks to the kindness of the manager, Mr. E. A. Isherwood, we are enabled to speak of its behaviour on the road. Before doing so we may mention one or two more or less important alterations since our first reference appeared. The petrol tank has been moved behind the dash, and is neatly located under the scuttle. Formerly it was in front of the dash and under the bonnet. The fan drive is also differently arranged. It will be remembered that a belt was used at first, but this broke occasionally and disappeared altogether. The drive is now by friction wheel, and proved to be efficient by the cool running of the 8 h.p. J.A.P. engine. The fan, it may be mentioned, is in front of the engine, the cylinders being set transversely. To form the friction wheel three discs of leather are clamped between metal plates, and bear on the periphery of the clutch drum, a spring helping to keep them in contact. A further amendment in design is the substitution of 28in. wheels for the 26in. fitted to the first model. Our trial was on the experimental cyclecar which has now run several thousand miles. Starting away, the top gear lever was engaged in about thirty yards, and there it remained for practically the whole of our trial, except after stopping.

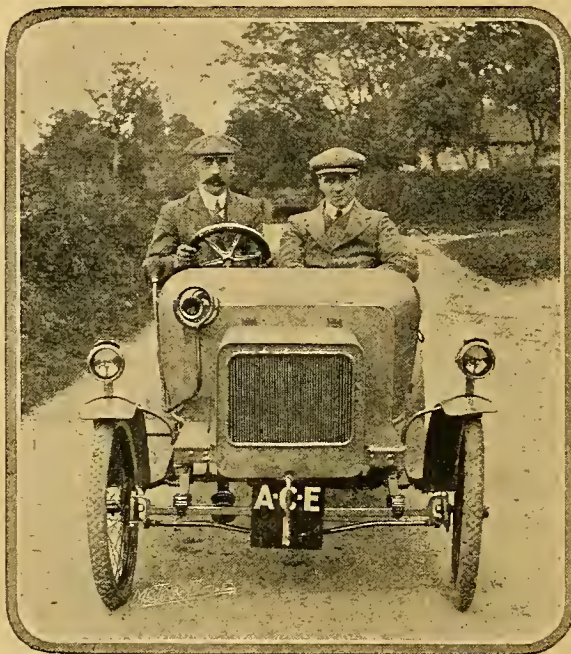
We first steered for Stoneleigh, the Coventry test hill, and accelerating to about 30 m.p.h. at the hill foot, the little car ascended the 1 in 8 gradient on top gear without hesitation. The dozen or so testers we noticed in the shade of a huge oak tree, with all makes of machines, could really be forgiven for a smoke and chat that close afternoon. Continuing *via* Milverton and Warwick, and repeating the top gear run through the

centre of the latter town, which is no easy matter on account of the combination of narrow streets, traffic, and tramcars, we ran along the main road to Stratford-on-Avon. Changing places with the driver, we were impressed by the ease of steering, but for that matter we always had a high opinion of the wire and bobbin method on the 8 h.p. Rover for light cars. The vibration at the steering wheel was, however, rather discomforting. It disappears, we found, at faster speeds, but is always present at about legal limit pace. The bodywork and springing was quite comfortable, and should be better still after the substitution of

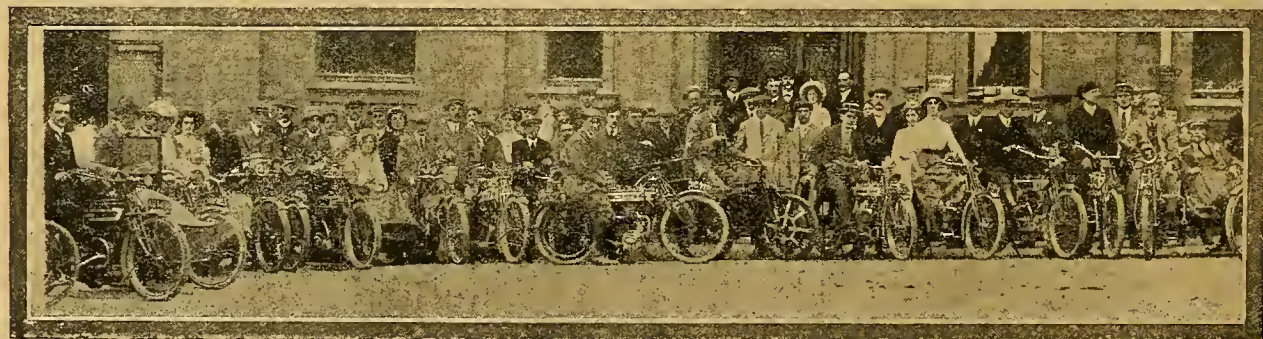
28in. wheels. The control is simplicity itself. The ordinary Amac air and throttle levers are clamped to the steering pillar, and with these alone one can throttle down to about 10 m.p.h. and accelerate to nearly 40 m.p.h. without a change of gear, but in our opinion the top ratio could be raised with improvement. Any machine is much more pleasant to drive with the engine turning over at a comfortable speed.

A long gradual rise known as Sherbourne Hill, the Arden simply revelled in. Satisfied with its hill-climbing we retraced our path, the good J.A.P. again making light of the gradient past the Leicester's Hospital, Warwick, and so on back to Coventry, *via* Gibbet Hill. Only once did we have occasion to use the change-speed lever;

it acts on a quadrant and was rather stiff in action, but details such as these have been amended on the standardised car. To sum up, the Arden is fast enough for all reasonable minded tourists. The gears and differential are practically silent, and if one may judge from a short trial, it is reliable and economical in running. Finally, the weatherproof shaft drive is a big point in its favour.



The first model of the Arden cyclecar.



Group of members of the Leicester & District M.C.C. who made a tour of inspection of the Singer Company's works last Thursday.



# LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

## Power for Sidecar Work.

Sir,—If you will allow me a few lines I can further endorse Mr. R. H. Adams's statement. On June 2nd I returned from Bristol to Manchester, a distance of 200 miles. This was done in the day with a standard  $3\frac{1}{2}$  h.p. single gear Sun and sidecar (gear  $4\frac{3}{4}$  to 1), my passenger being over 11 stones. We came without a single stop, except for the changing of a belt, as it poured with rain the whole of the way. This, I think, is a splendid performance for a  $3\frac{1}{2}$  h.p. machine, as the country is by no means flat. We had many a burst of 35 m.p.h., and the machine is still running well.

V. SUTTON.

## The Danger of Uncontrolled Dogs.

Sir,—I am very pleased to see this matter is being taken up by your correspondent, Mr. Wilks, and others. I have had several nasty spills caused by dogs charging me, and many narrow escapes. My experience is that the owners do not "care a rap" as long as the dog comes to no harm, and they very seldom make any effort to check them. I could supply a few names for the black list.

CHARLES F. BERRIDGE.

Sir,—With reference to letters on page 726 of *The Motor Cycle* on the danger of uncontrolled dogs, I received the other morning no less than fourteen complaints from your readers. The law requires that it shall be proved that the owner of the dog knows of its dangerous habits. On a dog being reported, full details are entered in the black list, a registered letter sent to the owner of the dog, and the police asked officially to warn the owner. Should the dog offend again, chances of success in "legal action" are fairly rosy. Full name and address of owner of dog and a description of the "bow-wow" should be sent. Under no circumstances is the name of the informer betrayed, but anonymous letters will be ignored.

L. C. WILKS.

(Gordon House, Woodford Road, South Woodford, Essex.

## Steel Pistons for Motor Cycle Engines.

Sir,—At the present time a large number of motor cyclists throughout the country are endeavouring to improve their machines in various ways in order that they may get faster and better results from them. As one who has had some, I am sending this letter to warn them not to spend their money on experimenting with steel pistons.

I had a couple made for my lightweight Humber, fully expecting that they would be considerably lighter than the standard Humber piston, which is, however, quite light, and to my surprise when they arrived they were only one ounce lighter than the standard piston, in addition to which they were extremely roughly finished, although they were very expensive. By dint of a lot of drilling, turning, and machining, I managed to lighten them considerably, but the weight so saved is so slight as not to warrant the expense for the very real and genuine risk of scoring the cylinders by the use of a steel piston.

I know of a case where a steel piston was fitted to a  $3\frac{1}{2}$  h.p. machine by an engineering expert who fully understands the properties of steel and the necessity for exceptionally easy and careful fitting, as well as ample lubrication. In his case, it has spoiled his cylinder, and he had to purchase another one, whilst, as in my case, the money laid out on the steel pistons is wasted.

I give these experiences in order to save motor cyclists their money as well as annoyance.

S. W. PHILPOTT.

## The 1913 T.T. Races.

Sir,—I think that the A.C.U. is to be congratulated on carrying through the T.T. Races this year in the face of much opposition. As a competitor, I can truthfully state that the organisation was perfect, and it will be a bad day for the English motor cycle when races are done away with. To strengthen the hands of the A.C.U., I have decided to enter for the T.T. Race next year, and if other riders would do the same, immediately, the A.C.U. could then set to work and frame the regulations.

In the course of conversation, a leading manufacturer stated to me that he would immediately set to work and prepare for next year's races. From this it seems that races will be held, and if they are to be a success every prospective rider should send his name in immediately to the A.C.U. and support it in its go-ahead policy.

IVAN B. HART-DAVIES.

## The Cost of Motor Cycles.

Sir,—With reference to the letter from Mr. Fitchett upon the above subject. Are there not a number of persons, who, thinking of paying from £20 to £25 for a motor cycle, would rather purchase a second-hand machine, with magneto, etc., than a new machine without the refinements of the present day motor cycle?

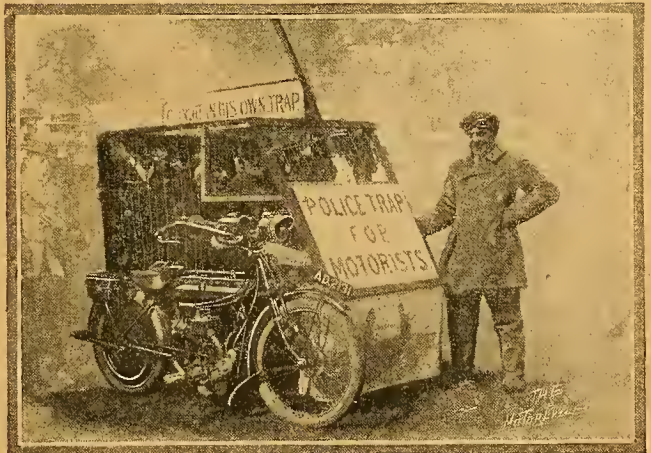
Nevertheless, I am sure there are many who would welcome such a machine as Mr. Fitchett suggests, especially as ignition by dry battery and coil is now so reliable. If Mr. Fitchett puts his idea into execution let us hope it will be in time for exhibition at this year's show.

I have before me a 1912 catalogue of a machine fitted with accumulator ignition, and minus spring forks, mudguards, stand, or carrier. This is sold (?) or offered to the public as a racing model, and the price is 36 guineas nett.

How, then, is Mr. Fitchett going to get his price down, even to £25, without sacrificing the essential parts of a touring mount?

I trust that more will be heard of this interesting subject, although it seems scarcely feasible to expect a reliable machine at half the price of the majority of present first-class machines.

LIONEL EVERSHED.



A novel decorated motor cycle and sidecar turn out at the Stroud carnival. The machine, as may be observed, is a B.S.A.



Sir,—Replying to Mr. W. J. Fitchett's recent letter, I am perfectly convinced that he would be courting disaster by fitting any other type of ignition except magneto, for I think it is pretty generally acknowledged that it is to the magneto, more than to any other source, that we owe the absolute reliability that petrol engines display to-day. Then again, as regards cheapness, I feel sure that, except for a slight difference in the initial cost, the magneto would prove much the more profitable investment, as it is both icksome and expensive to be compelled to buy new batteries every few hundred miles, besides having a feeling of uncertainty after they have been run for a time. No, sir, there are only two ways by which the motor cycle can be materially cheapened—firstly, absolute standardisation, and secondly, facilities and a market to turn them out in huge quantities, say 1,000 per week. Against these two essentials we have to place the inane faddiness of the average motor cyclist, and what is more lamentable still the fact that whereas every alien Tom, Dick, and Harry can dump his machines down here free of charge—nay, we even welcome them—the English manufacturer is fenced out of foreign markets on every side by a huge tariff wall, so high in many instances that the smaller firms fail to surmount them. At the present time England is by far the foremost country in the motor cycle industry, and everyone interested should do all in his power to keep her there, as it is one of the very few things in which she is first, but I know for a fact that there is a movement afoot in America for the turning out of motor cycles on the same principle as the cheap American car. Should this come about, the English manufacturer must look to his laurels. Mr. Fitchett is quite right in supposing that there is a demand for the £25 motor bicycle. I have no doubt that there is a huge demand. It is merely a question of whether we shall be sharp enough to supply the demand ourselves, or whether we shall wait for Cousin Jonathan from across the Atlantic to do it for us. I must remind you, sir, in conclusion, that already Americans hold nearly all the world's records.

FRED PEEL.

#### Motor Cycle Insurance.

Sir,—I have never yet taken up any of your valuable space in the correspondence columns, although I have been a motor cyclist since the very early days. I now feel, however, that I should like to give publicity to the very generous treatment I have just received from Mr. Priestley under the A.C.U. insurance policy. Although I have always been insured I have never had a claim until this year, when I joined Mr. Priestley's Co. Now, in less than six weeks, I have had two bad accidents, both costing Mr. Priestley's Company a good deal of money. Both claims were promptly admitted, and the repairs executed by the Service Company in less than a week, although the machine in each case had to be taken right down and new parts obtained from the makers and afterwards re-enamelled.

ALFRED R. ABBOTT.

#### Devonshire Roads.

Sir,—Having seen some correspondence in your columns lately on routes in Devon, and having just returned from a trip in North Devon, I think it might interest some of your readers to know that the main road from Bideford to South Molton is absolutely disgraceful, being so cut up by heavy lorries and traction engines as to render a journey over it a torture in fine weather and positively dangerous in wet weather. I intended to avoid this road on return by going over the Exmoor Road through Simonsbath, or by the Lynton-Minehead Road, but was informed by local garage owners that the moor roads were so rough as to be almost unrideable on motor bicycles, and that the Lynton-Minehead Roads, on account of a wet June, were very dangerous as the surface on the steep hills was extremely bad.

I might mention that North Devon motorists are so disgusted at the state of the roads that they are paying their licence and registration fees to other counties, and that on both my trips between Barnstaple and South Molton I saw only one motor cyclist, no cars at all, but I should think about a dozen heavy lorries or traction engines! The absence of motorists on the main road across North Devon speaks volumes in itself. The road between South Molton and Taunton is an improvement on the Bideford-South Molton portion, but requires care, as it is narrow and, in places

"pot-hole"; repairs, such as Noah might have carried out on the deluge-damaged roads, that is, pot-holes filled in with loose stones, the sharpest point upwards on top, make matters worse for any but a large shareholder in tyre companies. Local garage owners complain a lot of the absence of motorists. Is the Road Board unable or unwilling to rectify this and give "Glorious Devon" a chance?

#### BADLY BUMPED.

[The fault does not lie with the Road Board, which has, we believe, reserved £15,000 for Devonshire upon certain conditions with which the local authorities refuse to comply. —Ed.]

#### Tips for Douglas Riders.

Sir,—Perhaps the following tips may be of use to Douglas riders of 1911 machines:

- (1.) For easy starting, shut off most of the main air by fitting a piece of metal to slide over and cover a portion of the gauze-covered spoon-shaped air intake. This can be removed after starting. The tickler need not then be used.
- (2.) Place a rubber band on the magneto to hold the snap-on terminals in position, as after protracted use on bumpy roads they are liable to come off.
- (3.) When cleaning the back wheel on the stand, fasten exhaust lifter close up to the handle grip with a rubber band or piece of copper wire twisted.



Blackpool and Fylde M.C.C. Reliability Trial to Harrogate and back. The early arrivals at the turning point. (See Club News.)

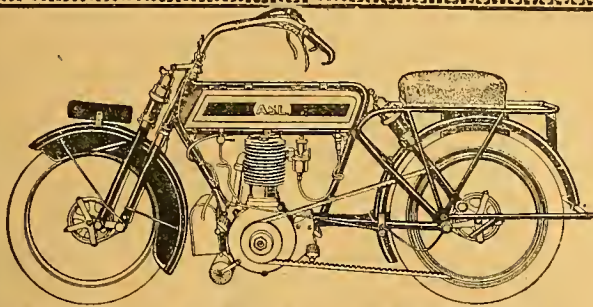
(4.) The plug at the top of the crank case for paraffin swilling is very inaccessible and often needs the removal of carburetter, induction pipe, etc., to get at it. My plan is to wait till the lubricating oil chamber is empty, then put the requisite amount of paraffin in it and pump it into crank case. This plan needs nothing removed, and also keeps oil tank and oil pipe in clean condition.

(5.) After a few thousand miles have been covered, watch carefully the exhaust valve lift. The bell crank tappet ends have a hollow worn in them by the valve stem ends, and, recently, by the closest possible adjustment of the two ends when hot, I was able to put an extra ten miles an hour on the speed and to get up the steepest hills without pedalling. Previous to this close adjustment, the last third of the throttle lever opening was ineffective. Now, throttle opening right to the end produces acceleration.

(6.) If the tickler end of nozzle pin in float chamber ever gets stuck up, and the float chamber top refuses to unscrew, turn the petrol tap three-fifths off and run the machine without float chamber control of the petrol. I recently rode twenty miles like this without any discomfort.

I should be glad to read in your paper of other tips used by riders. Personally, they would be more interesting to me than accounts of minor hill-climbs. T. WINTERBOTTOM.





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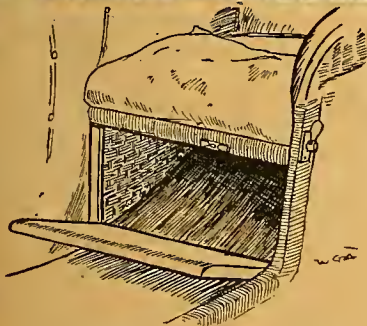
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C.D.C.

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The conveniently arranged cupboard fitted to the Wolbrown Sidecar.

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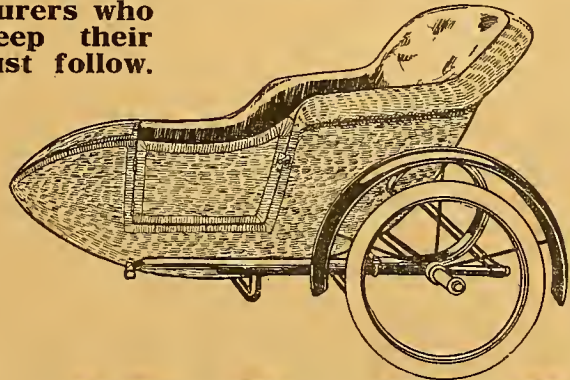
The unprecedented success of the "Wolbrown" (reg.) has brought the usual crop of imitations—mostly bad. Don't be misled, insist upon the genuine Wolbrown—the first sidecar body to be made in solid reed cane.

**A step forward which all manufacturers who want to keep their business must follow.**

**"WOLBROWN"  
REGISTERED.**

A Wolbrown registered label (as above) is attached to every sidecar we send out, and none is genuine without it. For your own protection—

**Look for the label.**

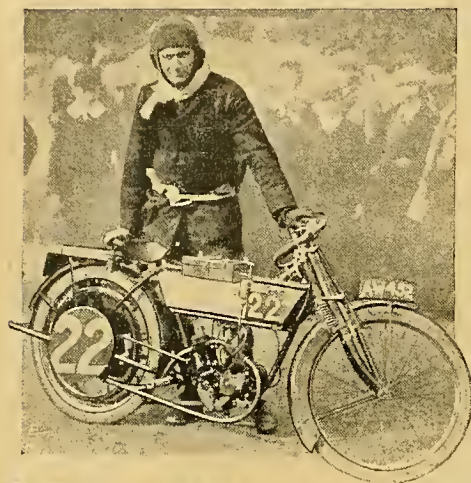


A SIDECAR you will be proud to possess—a carriage you can without diffidence ask your best friend to ride in—comfortable, convenient, and smart. It is designed on quite original lines, and possesses distinct advantages over the usual type. Roomy and practically weather-proof. No "sagging" of basketwork. No draughts. First on the market, made of solid reed cane, which gives great rigidity and strength, and does not wheeze like wicker or split cane.

Manufactured by... **W. H. BROWNLOW,**  
Portland Gate Works, Portland Crescent, Leeds.  
Behind The Coliseum. Telephone No. 223x Central, Leeds.



# 3 RD for two years running in the Junior T.T. RACE is the RECORD of The Reliable 'FORWARD'



**NO  
ONE YEAR  
ACHIEVE-  
MENT.**

**ONLY TWO  
FORWARDS  
ENTERED,  
GAINING  
3rd and 5th  
PLACES.**

## The Winning V Twin

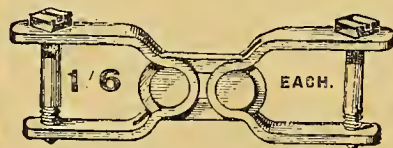
38 guineas complete. **LISTS FREE.**

**FORWARD CYCLE & MOTOR CO.,**

7 & 9, EDMUND ST., BIRMINGHAM.

## CONVINCING PROOF—For the last

3 successive years in the Senior T.T. Race.



## FORWARD FASTENERS

have been fitted to the Winning Single Cylinder Machine.

**INSIST on a  
FORWARD.  
SIMPLE YET  
PERFECT.**



Pat. No.  
19183,09

3", 4", 5", 1" and 1 1/2".

## FORWARD EJECTOR, the plug

Read this unsolicited testimonial. one of hundreds.

Dear Sirs,

It may interest you to know how the Ejector Plug, with which you supplied me shortly before Easter, has behaved. I used this Plug for a week's practising on Brooklands, then in the Short Race on Easter Monday. Since then it has done about 3,000 miles, partly on the free engine Triumph used in the race, and the rest on the back cylinder of my twin N.S.U. which was previously rather addicted to sooting up. Not once, however, have I had a stoppage for plug sooting, and this, I think, speaks well for the design of the plug, as I am a firm believer in generous lubrication for a small low geared twin. Congratulating you on your success in once again obtaining 3rd place in the Junior T.T., I remain, Yours faithfully, K. VAUGHAN.

P.S.—You are at liberty to use this if you so wish.



26" x 2 1/4 in., per cover 37/6.

**FOR  
SOLO  
WORK.**

*The motor cyclist who has equipped his mount with*

**S.-E. S.-G.**

**SHAMROCK & SHAMROCK  
EXCELSIOR GLORIA**

**TYRES BELT**

*is the man who has decided to have NO TROUBLE in his tyre and belt departments.*

Fully priced booklet sent free on request.

**THE HANOVER RUBBER CO.,**  
17, Goswell Road,  
Aldersgate Street,  
LONDON, E.C.

**FOR  
SIDECAR  
WORK.**



26" x 2 1/4 in., per cover 52/6.



**A Couple of Hints.**

Sir,—The following hints may be of some use to your readers:

Eisemann magnets. There is a spring stop like a little spanner to prevent the central contact breaker bolt turning round. If this stop is pressed inwards, it allows the hexagon to revolve when unscrewing the spring stop to one side.

Cleaning platinum points. Very good tools for this job are the little sandpaper boards which are sold by chemists for trimming one's finger nails. If it is not convenient to detach the contact breaker, they are thin enough to go between the points. As they are made in different grades of fineness, it is possible to use a coarse grade for grinding out the black pitted marks, and then obtain a very highly polished surface with one of the finer grades.

POINTICURE.

**A Sidecar Picnic.**

Sir,—I am venturing to enclose a photographic print of a sidecar picnic I took part in this month. All, save two people and my hosts who invited me to join the gathering, were strangers to me, and it was not until a roadside halt occurred near our destination that it was noticed that all, save one pair (riders of a Bat-Jap), were mounted upon  $3\frac{1}{2}$  h.p. two-speed Humbers, and all were members of the A.A. Considering the event somewhat unique, is my excuse for inflicting my handiwork upon you, but I am aware of your interest in the pastime as well as the sport of motor cycling, and I think my snap-shot shows, not only the popularity of the Humber and the A.A., but that sidecaring for married folk is also A1.

W. HAROLD GOODENOUGH.

**The Over Zealous Policeman.**

Sir,—Owners of A.C. Sociables and similar tricars may be interested in an experience I had recently. I was driving my A.C. from London to Heathfield during the early hours of the morning. My machine suddenly stopped for want of petrol. I got out to fill it, and a policeman came up, and on going round the car informed me my rear light was out. The machine was standing still when he came up. I showed him my oil reservoir was full, and plenty of wick, and informed him that I had inspected the lamp eight miles back, when it was alight. He pointed out that the wick was charred, and said that as I had come over some bumpy roads it had evidently been jerked out. I was surprised to receive a summons to appear at Uckfield Police Court for driving a motor car without a lamp illuminating my back number. After the constable (P.C. Morris, of Nutley) had given his evidence, on being asked by me he denied mentioning anything about the charring of the wick. I then contended that the machine was not a car, but a tricycle, and by the law was not required to have a back light, and also quoted the case of the R.A.C. appeal, *Printz v. Sewell*, the decision of which is, "That if the lamp which illuminates the number plate accidentally goes out owing to no fault or neglect on the part of the motorist no conviction can be recorded." The Bench upheld me, and the case was dismissed.

It seems that the policeman is a youngster only too eager to get some sort of case.

R. JONES.

**Some Old Memories.**

Sir,—I notice in your issue for July 4th a query re Birdlip. This brings back old memories. Seven years ago I took delivery of the first Quadrant  $3\frac{1}{2}$  h.p. motor cycle, engine No. 3,001. The first ride I had on this machine was up Rowinham Hill, accompanied by Messrs. Silver and Harrison, of Quadrant's Bristol depot. The machine roared over the hill at such a pace that I had to cut out to round the halfway corner. I should think the pace was about 35 m.p.h.

A few days after, when I had altered the choke and jet in the Longuemare carburetter, and raised the gear to

$3\frac{1}{2}$  to 1, I tackled Constitution Hill, and was successful first time. When I told Silver, he would not believe me until he saw it done. Speaking from memory, I should say the gradient was 1 in 4 and the length 600 yards. This hill had to be taken at a very low speed at the bottom, owing to the bad surface and nasty bend. The hill itself had no surface; in fact, it was more like a river bed than a road.

A month after that I tackled Birdlip, and ascended this hill first time, using the same gear of  $3\frac{1}{2}$  to 1. I have also taken a trailer with a 9 stone passenger over Dinmore Hill without any trouble.

On this machine I covered over 10,000 miles in twelve months, and never had any trouble with it. I attribute my success largely to the fact that I kept the machine clean and looked after the valves regularly.

ANODE.

**Short Measure in Petrol.**

Sir,—Like a great number of your readers, I started about the middle of last summer to check my petrol consumption, and soon noticed that the two gallon cans did not contain



A SIDECAR PICNIC. All the machines save one are  $3\frac{1}{2}$  h.p. two-speed Humbers, and all the owners members of the A.A.

that measure. Right up to the present time I have not had a single can containing two gallons. They are usually about a pint short, and in one instance the can only yielded a short seven quarts. I was told at the garage that the cans are just as they receive them.

Now that we are paying more for petrol I think we should at least be guaranteed measure, and I should be glad to hear through *The Motor Cycle* if any other readers have noticed the same deficiency. The seals in each case did not appear to have been disturbed, and I do not stick to one brand of petrol.

FAIRNESS.

**Another Road Danger.**

Sir,—May I trespass on your valuable space to draw attention to the great danger to which motor cyclists are exposed at night by cattle and horses wandering on to the roads from the adjoining common and forest lands on which they are allowed to graze. Last Sunday night, in a dark country road in Epping Forest, I suffered a severe collision with one of these trespassers in the shape of a stray horse standing "broadside on" across the road, having come there from the common land close by. Although I had a good lamp and was not travelling fast, the animal loomed out of the darkness before I could possibly avoid it, the results being disastrous to my machine, though fortunately I escaped serious injury myself. Cannot something possibly be done to protect motorists against this unlooked for nocturnal danger? Why should it be lawful for owners, although they may turn their animals on to common by day, to allow them to wander at will by night.

OSCAR H. CORBLE



# A SEVERE ONE-DAY TRIAL.

Coventry and Warwickshire Motor Club's 182 Miles Trial for Manville Trophy.

ONE of the hardest tests for motor cycles crammed into a day event was the Coventry Club's contest last Saturday. The course was much the same as that used on May 4th in the open trial, when only nine of fifty-four starters claimed non-stop runs. Two further ascents were included in the more recent event, viz., Edge Hill and Sunrising, which, together with Ilmington, Campden, Saintbury, Birdlip, Sudeley, Guiting Grange, Weston-sub-Edge, all steep acclivities boasting gradients of about 1 in 6, provided a sporting test. The Coventry Club Committee have long adhered to the practice of selecting a really difficult course to determine the winners in preference to split seconds timing, which proves little or nothing of the capabilities of the motor cycle. There were thirty-two competitors, including a number of leading riders, the entries being divided into twenty motor bicycles—four of these lightweights—six sidecars, and five cars. The start was 8 a.m., rain falling at the time. All hills were observed, but there was little need for an official on Edge Hill, as every competitor made a clean ascent. At Stratford, Reg Hollaway who was mounted on a  $3\frac{1}{2}$  h.p. three-speed Premier and sidecar, was obliged to withdraw, as he discovered a fracture in the frame. He had made a splendid ascent of Edge Hill. All got up Ilmington, though Harold Williamson (Calcott) retired at this point with magneto trouble. The first secret check was on Saintbury Hill, and as a number of competitors had stopped to cool their engines at the hill foot, they were considerably out in the timing. C. T. Lloyd (Rex) was nearest with only three seconds error. Nearing Stow-on-the-Wold, G. E. Cuffe (7 h.p. Indian and sc.) stopped for a puncture in the sidecar tyre. Undaunted, he strapped the cushion on the carrier, left the sidecar at a wayside cottage, and continued with his passenger. From Guiting Grange to Winchcombe the competitors were taken over grass grown roads, only just rideable, which the Coventry Club term the colonial test. Hereabouts S. Wright (Humber) punctured, but effected a lightning repair. Down Sudeley, the latest Cotswold terror, then Cleeve Hill, through Cheltenham to Cross Hands and Birdlip. In the corresponding trial last year only eight competitors got up Birdlip, but on Saturday only two stopped. These were Alec Walsgrove (Hazelwood), whose overalls suddenly caught fire and caused him to divert his attention from the control levers to beating out the fire, and W. H. Carson (Excelsior sidecar), who got to the top knuckle before his engine finally gave out. The competitors arrived very punctually at the Queen's Hotel, Cheltenham, where lunch was taken, after a morning's run of ninety-eight miles. At half distance the three leaders were: C. T. Lloyd (Rex), total error 21 $\frac{3}{4}$ s.; A. N. Barrett ( $3\frac{1}{2}$  Rudge), 30s.; and H. D. Teage (Clyno), 30 $\frac{1}{2}$ s. A feature of the trial run was the wonderfully regular running, trouble being comparatively non-existent.

The homeward course was over the same ground as the outward run but omitting the Birdlip section. A sharp shower had rendered the surface of Cleeve Hill tacky, and a number were brought down to low gears. We passed V. A. Holroyd (Rudge multi) adjusting his belt, and later he suffered a puncture, so retired.

## The Steepest Test Hill.

Few dare attempt Sudeley on the run with hot engines, but all made clean ascents excepting Carson and Walsgrove. The hill has several deep ruts and the surface was moist and holding, and it was regarded as the most difficult climb of the lot. Only three single-gear machines were in the trial. These included W. F. Newsome's Triumph, C. F. Newsome's Rover, and W. F. Wartnaby's W.D. The last mentioned machine, which possesses the desirable feature of forced lubrication to all bearings, made a most creditable debut. The twin Humbers, ridden by S. Wright and G. Smith, were the lowest powered machines to climb all the hills, and both easily accounted for Sudeley. J. F. Spencer's performance on the big single-cylinder Excelsior sidecar is also worthy of a word of praise. He ran most consistently throughout, and no hill proved too much for him. Guiting Grange was climbed by all, and after Stow-on-the-Wold, Weston-sub-Edge followed. Unfortunately, K. A. Bennett (Rover) and B. Yates (Humber) went off the route in this neighbourhood and missed Weston altogether. E. A. Gorton (Rex sidette) was the only one to come to a standstill, and that was owing to a broken belt—hard luck indeed, as up to that point he was leader of the sidecar class. The second secret check proved to be a mile outside Stratford, and timekeeper D. K. Hall caught most of the motor cyclists ahead of time. A small crowd of motorists assembled at Sunrising, the last test hill, but this ascent did not trouble the competitors after what they had gone through. The run home was *via* Kington, Wellesbourne, and Warwick, only D. Elson (Rex) failing to put in an appearance before the timekeeper left.

The complete results are given hereunder. The system of marking was—a stop on a hill entailed a loss of five marks, and for every minute early or late after the first minute a mark was deducted:

## WINNER OF MANVILLE TROPHY.

Rider and machine	Total error.
-------------------	--------------

H. Nelson Smith (25 h.p. Hillman car) ...	2m. 9 $\frac{1}{2}$ s.
---	------------------------

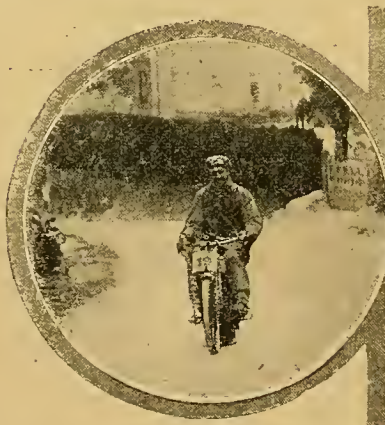
## BEST PERFORMANCE BY A PRIVATE OWNER.

Cars.—Gilbert Spicer (Loreley).

Motor Cycles.—C. T. Lloyd (6 h.p. Rex sidette).

## MOTOR CYCLE CLASS.

- |   |                         |
|---|-------------------------|
| 1. W. F. Newsome ( $3\frac{1}{2}$ h.p. Triumph) ... | 3m. 13s.                |
| 2. J. H. Pountney ( $3\frac{1}{2}$ h.p. Rover) ...  | 3m. 40 $\frac{1}{2}$ s. |



(1). C. T. Lloyd (6 h.p. twin two-speed Rex) on Birdlip Hill.



(2). J. F. Spencer (Excelsior Sidecar) who won the sidecar prize, making a good ascent of Birdlip.



(3). G. E. Cuffe (7 h.p. Indian) on the corner on Birdlip. He left his sidecar at a wayside cottage and mounted his passenger on the carrier.



**A Severe One-day Trial —**

**BEST PERFORMANCE ON A LIGHTWEIGHT**  
S. Wright (2½ h.p. Humber).

**BEST PERFORMANCE ON A SIDECAR.**

J. F. Spencer (4½ h.p. Excelsior).

Souvenirs are awarded to the following, who completed the course with a loss of not more than ten marks.

**MOTOR BICYCLES.**

*W. G. Blatch (3½ h.p. Rudge) ...	Non-stop
A. N. Barrett (3½ h.p. Rudge) ...	"
P. Moss (3½ h.p. Premier) ...	"
*G. Smith (2½ h.p. Humber) ...	"
W. F. Wartnaby (3½ h.p. W.D.) ...	"
L. A. Bees (3½ h.p. L.M.C.) ...	"
*H. D. Teage (5 h.p. Clyno) ...	"
*C. T. Lloyd (6 h.p. Rex) ...	"
W. E. Roots (3½ h.p. Singer) ...	"
C. T. Newsome (3½ h.p. Rover) ...	"

**SIDECARS.**

\*E. Gorton (6 h.p. Rex) ... Belt broke Weston Hill

**CARS.**

Gilbert Spicer (12 h.p. Lorchley) ... Non-stop.

E. W. Cheshire (12-14 h.p. Wolseley) ...

\*Private owners.

The under-mentioned made non-stop runs, but ran off the course: K. A. Bennett (3½ h.p. Rover) and Bert Yates (3½ h.p. Humber).

The assistant hon. sec., Mr. Ambrose Elson, ably organised the event.

**SPANISH ROAD RACE.**

A motor cycle road race was held on the 29th and 30th ult., the course on the first day being Irun to Bilbao *via* San Sebastian and Vittoria, distance 124 miles. The second day the return journey to Irun was made by another route, distance 95 miles. Big crowds assembled in the towns along the route, the number of spectators at San Sebastian being estimated at 10,000. The first six places were all gained by Spanish riders mounted on Rudge machines.

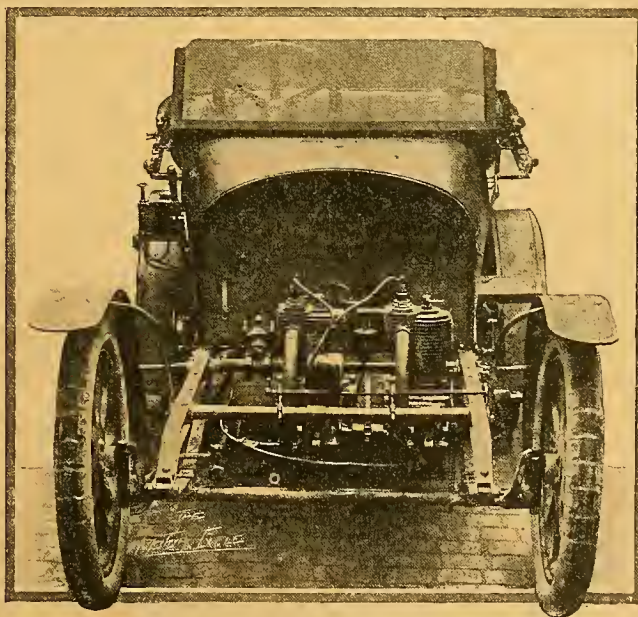
## Leicester Club Members at the Singer Works.

ON Thursday afternoon last some forty members and friends of the Leicester and District M.C.C. accepted an invitation of Messrs. Singer and Co., Ltd., Coventry, to visit the works and make a tour of inspection. Commencing with the frame building department, the members were escorted through the different shops and the various processes through which the hundred and one parts of a motor cycle are passed briefly explained by the guides, Messrs. W. E. Bullock (works manager), G. H. Mansell (sales manager), and C. Pole (traveller). Everyone must have been impressed by the great activity which prevails in the Singer works, though it is an open secret that the company have had a record year, and at the time of the visit had actually turned out 1,500 motor cycles since the Olympia Show. In the grinding shop a group of members of the Leicester Club were much interested in the operation of finishing a connecting rod; one member who had watched with open-mouthed interest a grinder sending a shower of sparks in a perfect line, picked up the rod for examination. The hasty manner in which he dropped it reminded one of the Irish boy who caught a wasp thinking it was a pretty fly, and threw it down exclaiming, "My, his feet were hot!"

**An Experimental Cyclecar.**

The engine assembling shop commanded the most attention. Here the members saw engines being timed like clockwork, and other delicate operations performed with precision. A specially light T.T. piston drilled like a lantern came in for a good deal of attention; it scaled 14 ozs. In the erecting shop an experimental cyclecar with two standard 3½ h.p. engines in front, and to which we vaguely referred recently, held up the party for some time. It is illustrated on this page merely as a matter of interest to show how up-to-date makers must keep abreast of the times. The Singer Co. have gained a good deal of useful knowledge from this experimental four-wheeler, but it will not be offered for sale. After the

tour of inspection the party was entertained to tea in the board room, and subsequently returned home after a most interesting and instructive afternoon.



The experimental Singer cyclecar with double engines. It will not be marketed.

## A.C.U. SIX DAYS' TRIAL ENTRIES.

It is to be hoped that a record entry will be received for the above trial, to be held from August 12th to 17th, as it will undoubtedly be the most severe of its kind which has ever been held. Taunton will be the centre, and the routes will include the most difficult ascents to be found in the West Country. The new system of marking which prohibits competitors being more than ten minutes in advance of or behind schedule time at any point without loss of marks should make it a difficult matter for machines to come through with a clean sheet. Twenty-two machines have already been entered. The entry list closes on July 29th. The Auto Cycle Union will be glad to receive offers of assistance from any motor cyclists or local repairers willing to assist in directing the competitors upon the correct routes or to undertake checking the competitors where required. A tyre and belt trial will also be held in conjunction with the Six Days' Trial.

The following is a complete list of entries for the Six Days' Trials up to date:

**MOTOR BICYCLES.**

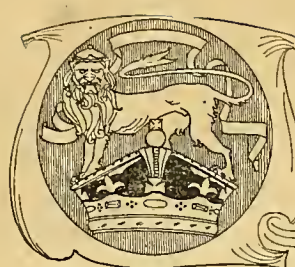
Rover Co. (3½ Rover)	P. Shaw (3½ P. and M.)
Rover Co. (3½ Rover)	S. H. Drake (3½ P. and M.)
Rover Co. (3½ Rover)	W. J. M. Sproule (3½ P. and M.)
G. T. Gray (3½ Rudge)	J. F. Sirett (7 Indian)
A. N. Barrett (3½ Rudge)	B. Alan Hill (7 Indian)
C. L. Scott (3½ Rudge)	A. H. Alexander (7 Indian)
W. Cooper (3½ Bradbury)	F. C. Wasley
A. Raymond Penney (2½ A.J.S.)	G. B. Fry
W. Pratt (3½ P. and M.)	A. G. Barr

Bristol  
M.C.C. Team

**PASSENGER MACHINES.**

J. R. Haswell (3½ Triumph sc.)





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

July 18th	...	9.6	p.m.
" 20th	...	9.4	"
" 22nd	...	9.2	"
" 24th	...	8.59	"

## "The Motor Cycle" Index.

The index for the six months ended June 27th is now ready. Subscribers will receive it free on application, non-subscribers can obtain copies, price 6d. each, on application to *The Motor Cycle*, 20, Tudor Street, E.C.

## Stolen Machines.

A 1912 B.S.A. free engine model, registered No. LE2825, engine No. 1904, with all accessories, including lamp and two generators, was stolen on Thursday evening, the 4th inst., about 10.30, from outside the "Duke of York," Potters Bar. The owner, Mr. Samuel Landy, 151, Grosvenor Road, Canonbury, N., is offering a reward of £5 for information which will lead to its recovery.

## Accident to H. Collier, Senior.

We regret to report that in the early hours of Friday morning last, a car containing Mr. H. Collier, sen., and a mechanic, overturned at the junction of the Bromley and Beckenham Roads at Southend village. Both occupants were pinned under the vehicle, and some little time after they were released Mr. Collier was found to be rather severely hurt and was taken to the Lewisham Infirmary, where he is progressing favourably. The car had to swerve to avoid a large cart, which, it is said, had no rear light.

## A.C.U. Notes.

**R.A.C. AND A.C.U. RACE MEETING.**—The annual inter-club meeting and gala day of the associated clubs will be held at Brooklands on Saturday, July 27th.

**THE A.C.U. MEMBERSHIP.**—The returns to the end of last month show that the membership is, approximately, 9,000, a very satisfactory increase from this time last year.

**SILENCER TRIALS.**—It is expected that the preliminary tests in connection with the silencer trials which the Auto Cycle Union proposed to hold will take place shortly. The experimental silencers have now been fitted to standard  $3\frac{1}{2}$  h.p. Triumph and Rudge machines respectively. These will be ridden before the judges and adjusted until they are satisfied that the noise made by the machines will be such as to cause no annoyance or inconvenience to other users of the highway. The results of the preliminary tests will be communicated to the various manufacturers and those specialising in the manufacture of silencers, and the Auto Cycle Union will then be prepared to accept entries for the open trial, which will be held in about six or eight weeks' time.

## French Hill-climb.

In the Val-Suzon (Dijon) hill-climb, held on the 7th inst., there were numerous classes for motor cycles. Cuzean (on a Terrot) won Classes B and E; Guignet (Motosacoche) Class F; Pean (Peugeot) Classes C and G; and Gabriel (Triumph) Class H. The fastest time was accomplished by Pean on a Peugeot—2m. 54s.

## Hill-climbs and the Surrey Police.

Organisers of hill-climbs would do well to obtain written permission from the police authorities before the contest takes place, as the following will show: C. W. Meredith was fined 20s. and costs for riding up Pebble Hill at an estimated speed of over 35 m.p.h. The hon. secretary stated that he had permission, but was unable to show anything in writing. W. I. Stratin was fined 30s. and costs for a similar offence after the competition was over. He seemed to be acting in a spirit of bravado.

## A Warning.

The inhabitants of Ruabon are pressing for a speed limit in consequence of the inconsiderate driving of many motor cyclists who, especially on Sundays, cause great annoyance by riding at an excessive pace through the town and with their cut-outs open. There are four churches along the main road, so it can easily be understood that noisy machines disturb many people. It is riders of this class that bring the motor cycle into disrepute.

## SPECIAL FEATURES.

### CYCLECARS.

## PREPARING FOR THE SIX DAYS' TRIALS. IRISH END-TO-END TRIAL.

## Mont Ventoux Hill-climb.

There will be four classes for motor cycles in the above hill-climb, which will take place on August 10th and 11th. Class I., 500 c.c.; Class II., 350 c.c.; Class III., 250 c.c.; Class IV., sidecars and tricars carrying two passengers. The event always attracts a big and important entry. The entrance fee for motor cycles is £2 each machine, and should be sent to reach l'Automobile Club Vauchusien, 9, Place Crillon, Avignon, France, on or before Friday, the 9th August.

## Marseilles Race Meeting.

The Marseilles Auto Cycle Club held a race meeting on the 1st inst. with the following results:

- Class I. (250 c.c.) Laurent (Alcyon).
- Class II. (300 c.c.) Sain (Alcyon).
- Class III. (twins) Arnaud (Peugeot).
- Class IV. (500 c.c.) Perrin (Peugeot).
- Class V. (650 c.c., twins) Hurstel (N.S.U.).
- Class VI. (twins over 650 c.c.) Chabaud (Peugeot).
- Class VII. (variable gears) Perrin (N.S.U.).

First prize in general classification, Perrin (Peugeot); Auto Cycle Club Cup, Arnaud (Peugeot).



ANNUAL WELSH RUN OF THE BIRMINGHAM M.C.C.  
A group of competitors at the surprise check, who arrived with sealed watches in hand.



**The Cyclecar.**

A persistent rumour was circulated last week-end that the Ford Co., of America, were about to build a large quantity of cyclecars for the British market to sell at about £60. We asked the firm if there was any truth in the report, and their reply, received by wire, was most emphatic. It read: "No! No! No!"

**Cyclecar Trial Abandoned.**

For the second time the Birmingham M.C.C. have had to cancel their open cyclecar trial. Saturday, the 20th inst., was the day fixed, but only two entries were forthcoming, so the committee decided to abandon the event. The hon. sec., Mr. Brook, gives as the reason for the scarcity of entries the severe nature of the course.

**German Motor Cyclists.**

As on previous occasions the place of meeting of the Allgemeine Deutsche Automobil Club constituted a rally for motor cyclists and light car owners. Nearly forty motor cyclists entered. The winners of the classes were as follows: Lightweights, C. Muller (1½ N.S.U.). Under 500 c.c., A. Boldt (3 N.S.U.). Over 500 c.c., K. Gassert (6 N.S.U.).

**Next Year's T.T.**

Next year's Tourist Trophy Races promise to be more interesting and instructive than ever if the recommendations of the Auto Cycle Union Competitions Committee be adopted. It is suggested that the races occupy two days, Friday, June 6th, and Monday, June 9th. On each day the junior machines would be required to cover four laps of the Snaefell course, and the Senior machines five laps. In the interval the machines would be kept under lock and key. No changes are recommended in regard to the cubical capacity limits, viz., 350 c.c. for Junior machines and 500 c.c. for Senior machines, and no handicap is suggested for the two-stroke motors.

**British Imports and Exports.**

From the following table, the value of the imports and exports of motor cycles for the periods of one and six months ended June 30th may be seen at a glance:

**IMPORTS.**

For month ended June 30th.

	1910.	1911.	1912.
Motor cycles ...	£6,389	£5,973	£3,803
Parts thereof ...	4,615	4,144	14,886
<b>Total ...</b>	<b>£11,004</b>	<b>£10,117</b>	<b>£18,689</b>

For six months ended June 30th.

Motor cycles ...	£26,974	£28,528	£24,828
Parts thereof ...	28,344	33,413	57,292
<b>Total ...</b>	<b>£55,318</b>	<b>£61,941</b>	<b>£82,120</b>

**EXPORTS.**

For month ended June 30th.

Motor cycles ...	£7,859	£13,408	£23,115
Parts thereof ...	3,569	3,731	9,878
<b>Total ...</b>	<b>£11,428</b>	<b>£17,139</b>	<b>£32,993</b>

For six months ended June 30th.

Motor cycles ...	£44,019	£95,878	£195,311
Parts thereof ...	19,006	30,393	74,187
<b>Total ...</b>	<b>£63,025</b>	<b>£126,271</b>	<b>£269,498</b>

**A.A. and M.U. Membership.**

The membership of the A.A. and M.U. now totals 48,620.

**Six Days' Record.**

Last week J. Guzwel, of Cleethorpes, riding a Rudge-Multi, claims to have regained the six days' record from W. J. Clark, of Doncaster. Guzwel reports having ridden 3,080 miles, beating Clark's performance by seventy-two miles. The route followed lay principally in the Midlands and East Anglia.

**Police Traps.**

It is reported that there is a police trap at Godstone just past the station bridge. This is worked two or three nights a week and nearly every Sunday.

What appears to be a new police trap is working in Bounds Green Road. Wood Green, N. The trap commences quite close to Jolly Butchers' Hill and extends for 220 yards.

FUTURE EVENTS	
July 18 & 20.—South Wales A.C. and Cardiff M.C. Open Hill Climb at Caerphilly.	
18.—Taunton & District M.C.C. Open Hill Climb.	
20.—B.M.C.R.C. Race Meeting.	
20.—Liverpool A.C.C. Open Speed Trials.	
27.—R.A.C. Associates' Gala Day at Brooklands.	
27.—Oxford M.C.C. Open Speed Trials.	
Aug. 2.—Bristol B.&M.C. Open 24 Hours Trial to Land's End and back.	
3.—Cumberland C.M.C.C. Open Speed Trials.	

**French Competition Notes.**

Prizes to the value of over £100 are to be awarded in the M.C.F. Grand Prix on August 25th, particulars of which were announced last week. The Circuit de Trets is the title of a 200 kilometre contest organised by Le M.C. de Marseilles to be run on August 4th. There are classes for 300 c.c. and under, 400 c.c. 500 c.c., and over 500 c.c. Entries should be sent to the Secretary, Marseilles M.C., 14, Cours Belsunce, Marseilles.

**Grand Prix de France.**

The above event, of which we gave details last week, is to take place on Sunday, August 25th, over a course of 450 kilometres. We hear of three British motor cyclists who will take part, including S. L. Bailey (Douglas) and Ivan B. Hart-Davies (Triumph).

**Snowden Climbed.**

On Saturday last, L. W. Spencer, of Uxbridge, riding a three-speed Rover, succeeded in climbing Snowden. Mr. Spencer will be remembered as the writer of the article in our Summer Number, "A Week-end Exploring Exmoor."

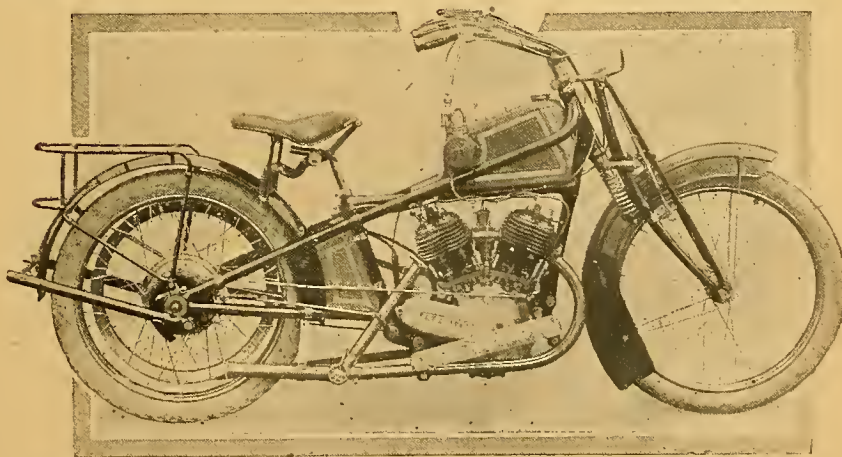
**A.C.U. Six Days' Trials.**

New features to be introduced into the regulations of the Six Days' Trials in the West Country are slow climbs of two test hills, in each case over a measured mile. Competitors will be expected to keep below 10 m.p.h. For every ten seconds or part of ten seconds in excess of this speed, a mark will be deducted. A special prize is offered in each class for the best performance. One of the test hills suggested is Countisbury.

Those competitors having machines capable of climbing Lynton Hill, Lynmouth, and Beggars' Roost, may receive a bonus of twenty-five marks for each ascent, though it has been decided that no competitor will have marks deducted if he be unsuccessful in the attempt.

**Roman Roads.**

A special committee of the Roads Improvement Association is now investigating the whole system of the old Roman roads in this country to decide whether, in view of the facilities now afforded by the Imperial Road Improvement Fund, any action can usefully be taken to bring any of the roads, now disused, into service again. The stability and thoroughness of construction of the old Roman roads are well known, but during the railway era a number of them became obsolete. It has frequently been suggested that, now that traffic is rapidly returning to the roads, many of the old Roman highways, which have excellent foundations, might be made up and utilised for cross-country traffic.



A newly-designed 6 h.p. Rex which is being standardised. Miss Hind took delivery of the first model a week ago, and rode it in the Irish End-to-end trial last Monday. She has also entered it for the Scottish Trials which commence on Monday next.



# THE IRISH END-TO-END TRIAL.

Forty-one Competitors in the Annual Trial for the Palmer Trophy.

**T**HIS year the entry of forty-one was a record one. About twenty-five competitors arrived at Goleen, some three miles from the start, on Saturday afternoon and evening. Frank Smith (Clyno sidecar) did not arrive till eight o'clock on Sunday evening. For the first time a lady motor cyclist in the person of Miss Muriel Hind entered for this severe test of both rider and machine. She was mounted on a new design 6 h.p. Rex. Soon after midnight on Sunday the competitors left Goleen for the starting point (which they left at one o'clock), and unlike the usual English trial all competitors were started together, some getting away at the word "go," others waiting back till the dust had somewhat abated.

Below is a complete list of starters:

J. Stewart (3½ Triumph)	W. J. O'Callaghan (3½ Zenith Gradua)
J. Lavery (3½ Ariel)	P. J. Brady (3½ Rudge)
P. Phillips (2½ Douglas)	L. Dobbin, jun. (8 Matchless)
E. Clark (2½ Douglas)	S. S. Sloane (3½ Rudge)
W. J. Chambers (3½ B.S.A.)	F. Short (3½ Humber)
F. C. North (3½ Ariel)	W. J. Towell (3½ Rudge)
J. R. Thompson (3½ B.S.A.)	R. Walshe (3½ Calthorpe)
H. Gibson (3½ Bradbury)	G. Roche (3½ Rover)
Miss Muriel Hind (6 Rex)	T. Greer (5 Rex)
R. Lord (6 Rex)	C. Kirk (3½ Triumph)
J. Clarke (3½ Rudge)	W. Parker (3½ Humber)
P. H. Hulse (3½ Rudge)	W. Dowse (3½ Zenith Gradua)
P. Beattie (3½ Rudge)	W. Kirk (5 Indian)
F. Smith (6 Clyno)	W. J. Burney (2½ Enfield)
W. F. Adams (3½ B.S.A.)	D. Gray (3½ James)
C. E. Murphy (3½ Triumph)	H. P. Mooney (—)
R. S. Russell (3½ Matchless)	T. J. Woods (3½ Ariel)
H. Greaves (2½ Enfield)	Rex Mundy (2½ Douglas)
W. Humphreys (3½ Humber)	M. Shields (3½ Humber)
S. Ruddell (3½ Bradbury)	
J. Levins (3½ Rudge)	
T. E. Greene (3½ Rudge)	

Promptly at 1 a.m. the competitors were despatched on the journey north by the chief coastguard from the coastguard station at Mizenhead. The first 28 miles of the course to Skibbereen is undoubtedly the worst portion, being extremely bumpy, twisty, and stony; This had to be traversed in the dark. The first man to experience trouble was North, who punctured some two miles from the start. Later his rear cover unfor-



W. Parker (3½ h.p. two-speed Humber) preparing to leave Dublin for the completion of the Irish End-to-end.

tunately came off six times. On reaching Dublin he bought a new cover, but found he was two and a quarter hours behind time, so he retired from the trial and enjoyed a fast ride to the finish. Near Dunmanway, 44 miles from the start, we passed Dobbin, who had collided with a stray donkey in the dark and knocked it over, of course coming down himself. Russell also hit the same donkey with his footrests without, however, falling off. The first check was held at Cork, where sandwiches and coffee could be obtained, thence the route lay to Dublin with checks at Michelstown, Cashel, Maryborough, and Dublin. At Dublin one hour was allowed for unch. Miss Hind said she was troubled with her wrists owing to vibration from the rough roads. Considering the loose state of the surface in most places very little tyre trouble was experi-



F. Short (3½ h.p. Humber) at the Dublin control.



W. J. Chambers (3½ h.p. B.S.A.) leaving the garage at Dublin



## The Irish End-to-End Trial.—



Competitors in the End-to-end trial passing over Inchicore Bridge.

enced, though we passed Lavery on two occasions with his rear tube out.

After lunch the competitors proceeded through Drogheda, Dundalk, Banbridge, Co. Antrim, and thence to the finish at Fairhead, some three miles from

## BIRMINGHAM CLUB'S TWO-DAY TRIAL.

The Birmingham Motor Cycle Club held their annual trial for the Sangster trophy last week-end over a course from Birmingham to Aberystwyth and back. A secret check was arranged both on the outward and homeward run, and many of the competitors ran very close to their twenty-mile schedule. The following checked in at the finish: A. D. Arter (3½ James and sc.), T. Pollock (3½ James), W. H. Egginton (3½ New Hudson and sc.), B. Bourke (3½ New Hudson and sc.), K. Clarke (3½ Corah), B. Ball (3½ Triumph), R. N. Corah (3½ Corah twin), S. Smith (3½ Norton), R. W. Duke (3½ Zenith), F. T. Hill (3½ Zenith), F. C. Sangster (3½ Ariel), W. H. Edwards (3½ New Hudson and sc.), H. G. Blackwell (6 Zenith), P. J. Taylor (2½ Veloce), W. E. Baylis (3½ New Hudson), S. A. Rowlandson (3½ Rudge), N. Newey (2½ Levis), V. Underhill (3½ Monarch), A. Webster (Hobart), E. T. Blumfield (3½ water-cooled Blumfield), and V. Busby (Humber).

## ANOTHER ACCIDENT DUE TO ABSENCE OF A REAR LIGHT.

We deeply regret to record a fatal accident to Cyril Bailey, hon. secretary of the Leicester and District M.C.C., and a member of the Coventry and Warwickshire M.C., which occurred on Saturday evening last. Mr. Bailey was returning from Barrow-on-Soar at about 10 p.m. on his motor cycle and sidecar, and when descending Birstall Hill, ran into the rear of an unlighted trolley car. The sidecar was overturned, pinning the unfortunate driver underneath. He sustained a fractured skull and died in a few minutes. His lady passenger luckily escaped with a shaking.

This accident again draws attention to the urgent necessity for all vehicles—and especially those of the slow moving type—to exhibit a rear light after dark. It would be difficult to say how many lives could have been saved if only this simple provision were included in all byelaws. Years ago, the Coventry Club started an active campaign to render rear warning lights compulsory on all vehicles, and thousands of signatures were obtained in its favour.

Later the Royal Automobile Club took up the campaign, but still without general success. It is shameful to think that fatal accidents are constantly occurring, due to the absence of warning lights, and yet the authorities refuse to heed continued appeals on the matter.

At the inquest, the Coroner, Mr. E. G. B. Fowler, drew attention to the subject, and we are glad to say that the jury returned a verdict of accidental death, the foreman saying "they considered rear lights to be indispensable for

Ballycastle, which the first man was due to reach at 9.42 p.m. During the latter part of the journey a very great deal of dust was encountered, which made it far from comfortable. Eight miles from Moira, Rex Mundy ran over a dog, unfortunately killing it and breaking his oil pump, he was obliged to stop every few miles and fill the crank case from an oil gun.

Hugh Gibson finished five minutes late, but explained that he had run short of petrol. The committee will consider this in company with Rex Mundy's application, the latter arriving at the finish four minutes early, being under the impression that the trial terminated at Ballycastle. C. E. Murphy rode a Triumph with three-speed Sturmey-Archer gear and Triumph decompressor.

All watches were placed in a sealed cardboard box in which a circular hole was cut for examination of the dial. Each man was therefore timed by his own watch, an idea first adopted by the Bradford Club. Great difficulty was experienced by the timekeepers at the checks, as all competitors being despatched together caused a great number, sometimes a dozen or more, to arrive at a check at the same time. We would suggest in future that the competitors be started at one minute intervals.

## IRISH TRIAL RESULTS.

The results of the above trial, subject to confirmation, are:

## GOLD MEDALS.

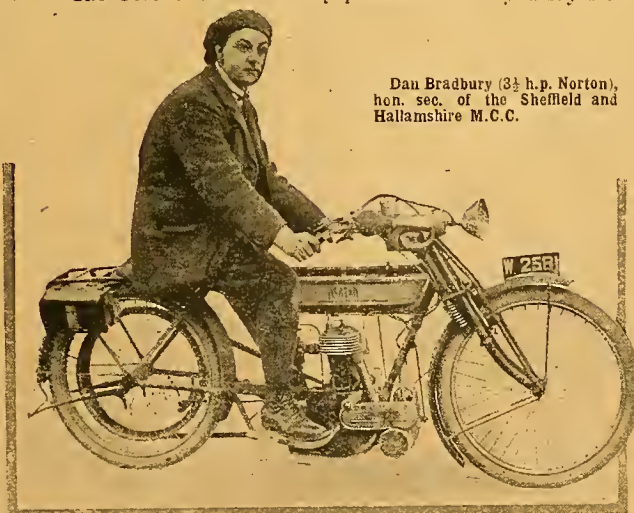
J. Stewart (3½ Triumph)	C. E. Murphy (3½ Triumph)
J. Lavery (3½ Ariel)	R. S. Russell (3½ Matchless)
P. Phillips (2½ Douglas)	H. Greaves (2½ Enfield)
Miss Hind (6 Rex)	T. E. Greene (3½ Rudge)
R. Lord (6 Rex)	L. Dobbin (8 Matchless)
W. F. Adams (3½ B.S.A.)	S. S. Sloane (3½ Rudge)
W. J. Chambers (3½ B.S.A.)	W. J. Towell (3½ Rudge)
E. Clark (2½ Douglas)	C. Kirk (3½ Triumph)
J. R. Thompson (3½ B.S.A.)	T. J. Woods (3½ Ariel)

## SILVER MEDALS.

W. Humphreys (3½ Humber)	G. Roche (3½ Rover)
P. J. Brady (3½ Rudge)	T. Greer (5 Rex)
F. Short (3½ Humber)	M. Shiels (3½ Humber)
R. Walshe (3½ Calthorpe)	

safe traffic, in the country perhaps more than the town. All vehicles ought to carry rear lights."

The Coroner: "I am very pleased to hear you say so."



Dan Bradbury (3½ h.p. Norton), hon. sec. of the Sheffield and Hallamshire M.C.C.



## Motor Cycle Racing at Brooklands.

**A**LTHOUGH there was only one race for motor cycles in the programme of the B.A.R.C. meeting on Saturday last, yet that one was of a particularly exciting nature from the spectators' point of view. Moreover, the weather was such as to make a pleasant afternoon under the Brooklands pines one of the most enjoyable ways of spending one's time.

There was a large entry, of which no fewer than eight were Rudges. A certain number of entrants were obviously from the amateur class, and it is to be hoped that of the many motor cyclists who are capable, a further number will realise that racing at Brooklands has much to teach an enthusiastic rider.

The authorities are to be congratulated on the erection of an additional tier on the press stand, so making the view from it one of the best to be obtained from any part of the track. The starters were as follows:

**THE TENTH SHORT MOTOR CYCLE RACE.**—Distance, about  $5\frac{1}{2}$  miles.

	Handicap, m. s.
R. L. Prince (2-cyl. Bat, 748 c.c.)	scr.
K. Yano (2 Bat, 658 c.c.)	6
P. Newbold (2 Zenith, 771 c.c.)	6
H. Jepson (1 Zenith, 488 c.c.)	18
H. Martin (1 Martin, 339 c.c.)	26
F. H. Hannis (1 J.A.P., 493 c.c.)	26
"A. E. Pontin" (1 Rudge, 499 c.c.)	36
Scott Aitken (1 Rudge, 499 c.c.)	36
S. Day Timson (1 Rudge, 499 c.c.)	36
Basil Collier (1 Rudge, 499 c.c.)	36
A. G. Walker (1 Rudge, 499 c.c.)	36
B. C. Remington (1 Rudge, 499 c.c.)	36
L. L'E. Edwards (1 Rudge, 499 c.c.)	36
A. G. Fenn (2 Humber, 359 c.c.)	36
E. B. Ware (2 Zenith, 494 c.c.)	36
J. A. Manners-Smith (1 Triumph, 499 c.c.)	36
G. E. Stanley (1 Singer, 294 c.c.)	48
C. Pressland (1 Rudge, 499 c.c.)	48
J. Cocker (1 Singer, 294 c.c.)	1 0
D. R. O'Donovan (1 Singer, 294 c.c.)	1 0
H. H. Square (1 Minerva, 258 c.c.)	2 30

Looking round the machines before the start, it was apparent that many were trying various devices in the hope of getting some additional efficiency from their engines. Pressland's Rudge had a big extra air pipe curiously contrived out of bent sheet copper and rubber tape. "Pontin's" Rudge had a large copper pipe leading from the timing case near the magneto to the extra air pipe.

presumably in order to get an injector action above the jet. A similar device, but with a rubber tube and a different general arrangement, was on Hannis's J.A.P. Basil Collier's Rudge had a Bowden wire and spring-controlled oil pump adaptation.

At the start the field bunched together well, the Minerva leading on its starting allowance, but travelling slowly. The first circuit saw the Minerva still ahead, with Stanley (Singer) hard behind and Cocker (Singer) pressing him close. Walker (Rudge) had come up to sixth place, while Timson (Rudge) was also well up.

### The Result.

At the finish Ware (Zenith) got well home an easy first and passed the post looking round and wobbling badly.

Handicap.  
SECS.

1. E. B. Ware (2-cyl. Zenith-Gradua)	36
2. A. G. Walker (1 Rudge)	36
3. S. D. Timson (1 Rudge)	36
4. C. Pressland (1 Rudge)	48
5. J. A. Manners-Smith (1 Triumph)	36

The main body came in together. Stanley's Singer did not seem up to its usual good form, and for some reason Hannis did an extra lap, so finishing some time behind the field. Taken as a whole the race was extremely well handicapped.

### B.A.R.C. AUGUST MEETING.

The Brooklands Automobile Racing Club will hold a meeting on August Bank Holiday, the 5th proximo, when the following motor cycle races will take place.

The eleventh short motor cycle handicap for all classes of motor cycles. Distance,  $5\frac{3}{4}$  miles.

The ninth long motor cycle handicap for all classes of motor bicycles. Distance,  $8\frac{1}{4}$  miles.

The first sidecar and cyclecar handicap. For all motor bicycles with sidecar, not exceeding 1,000 c.c., and carrying a male passenger weighing not less than  $9\frac{1}{2}$  stones, and for cyclecars as defined by R.A.C. and A.C.U., chassis weight unladen 6 cwt., engine not exceeding 1,100 c.c. Distance,  $5\frac{1}{4}$  miles.

In each case the entrant of the winner will receive 10 sovs. or cup at option, second 5 sovs. or cup, and third 3 sovs. or cup.

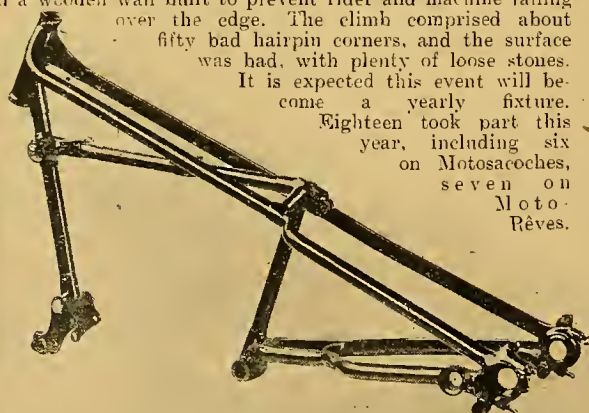
Entry fee for the first two events 10s. 6d. each, sidecar race £1. Entries close 23rd inst. to Secretary B.A.R.C., Carlton House, Regent Street, W.

## A SWISS HILL-CLIMB.

A hill-climb, which can best be described as a race up one of the famous Swiss mountain roads, was recently held in the neighbourhood of Geneva—the summit of the hill is called Treize Arbres. At one bad corner on the road a swerve would have meant a fall of about 1,600 feet, so the organisers had a wooden wall built to prevent rider and machine falling over the edge. The climb comprised about fifty bad hairpin corners, and the surface was bad, with plenty of loose stones.

It is expected this event will become a yearly fixture.

Eighteen took part this year, including six on Motosacoches, seven on Moto-Rèves.



New straight tube dropped frame of the latest 6 h.p. Rex for use by either sex.

and two on Peugeotts. The results were:

Class I. (Singles 300 c.c. Twins 350 c.c.)—1, Berlie (Moto-Rève); 2, Guignet (Motosacoche); 3, Jaquemod (Motosacoche).

Class II. (Single and Twins over 300 and 350 c.c.)—1, Lavanchy (Motor-Rève); 2, Pontis (Moto-Rève); 3, Pean (Peugeot).

Class III. (Open).—1, Ervin (Moto-Rève); 2, Lapalud (Moto-Rève); 3, De Angelis (Moto-Rève). These three also won the Amateur Class, finishing in the same order.

### SPEED TRIALS IN HEYTHROP PARK.

The open speed trials promoted by the Oxford M.C.C. are to be held in Heythrop Park, near Chipping Norton, Oxon, on Monday, the 22nd inst.

Double fees will be charged for late entries received up to 12 noon on the 20th inst., and should be sent to Mr. R. C. Davis, 12, Cornmarket Street, Oxford.

The classes have been arranged under the open competition rules of the Auto-Cycle Union, and the club regulations, as follows:

Class 1.—Junior T.T.

Class 2.—Senior T.T.

Class 3.—Standard touring singles or twins up to 350 c.c.

Class 4.—Standard touring single twins up to 750 c.c.

Class 5.—Single-cylinders (unlimited).

Class 6.—Twins (unlimited).

Class 7.—Touring sidecar combinations up to 1,000 c.c.

Class 8.—Touring cyclecars up to 1,000 c.c. R.A.C. definition.



# ENGLISH-DUTCH TRIAL.

## The Transit Arrangements for British Competitors and their Machines.

**T**HE complicated work of arranging a tour abroad has been rendered as simple as possible to the British contestants in the above trial, thanks to the help of the Touring Department of the Royal Automobile Club. Every competitor has had a type-written copy of the special transit arrangements forwarded to him. In brief the details are as follows:

On Saturday, August 3rd, the British riders will leave Liverpool Street Station (Great Eastern Railway), London, at 4.10 p.m., arriving at Parkeston Quay, Harwich, alongside the steamer at 5.45 p.m. A special truck will be attached to this train for the conveyance of motor cycles, and passengers' accommodation will be reserved on the train. The special rates are: 7s. 6d. for the transport of each motor cycle from London to the Hook of Holland (owner's risk), return fare 15s. (payable to the R.A.C. in advance).

Passengers' return fare from London to the Hook is £2 2s.; second class rail and first class on the steamer.

### Transit Arrangements from Harwich only.

Those who cannot join the party at Liverpool Street should make a point of reaching Parkeston Quay not later than 5.30 p.m. The cost of first-class return tickets between Harwich and the Hook is £1 13s. The cost for the transport of each motor cycle from Harwich to the Hook, at owner's risk, is 4s. 6d. each way, double journey 9s. The cost of the transport between Harwich and the Hook, and any passenger ticket required, should be sent in advance to the Secretary of the Royal Automobile Club (Touring Department), Pall Mall.

Motor cycles with sidecars will be charged double.

The return journey will be made on the night of Wednesday, August 7th.

It will be necessary for each member of the party, whether an actual team member or reserve, to obtain from the Royal Automobile Club before departure:

1. A special Customs card, by which the machines may be taken into the country free of duty.

2. An international pass, which gives the holder the right to travel in Holland on his ordinary British numbers.

### How to obtain the International Pass.

It is necessary for the holder of each international pass to carry a little oval plate bearing the letters "G.B." but this plate is supplied with the international pass. Before an international pass can be issued it is necessary for the owner and the machine to be examined by a duly authorised examiner, and it is necessary to write to the most conveniently situated examiner well in advance, making an appointment for the examinations to take place on a specified date. After undertaking the necessary examinations, the authorised examiner sends in a certificate to the R.A.C., who then forwards the international pass to the applicant.

It is most important that arrangements should be made well in advance, as the ordinary work of the Touring Department is excessively heavy at the present time of the year.

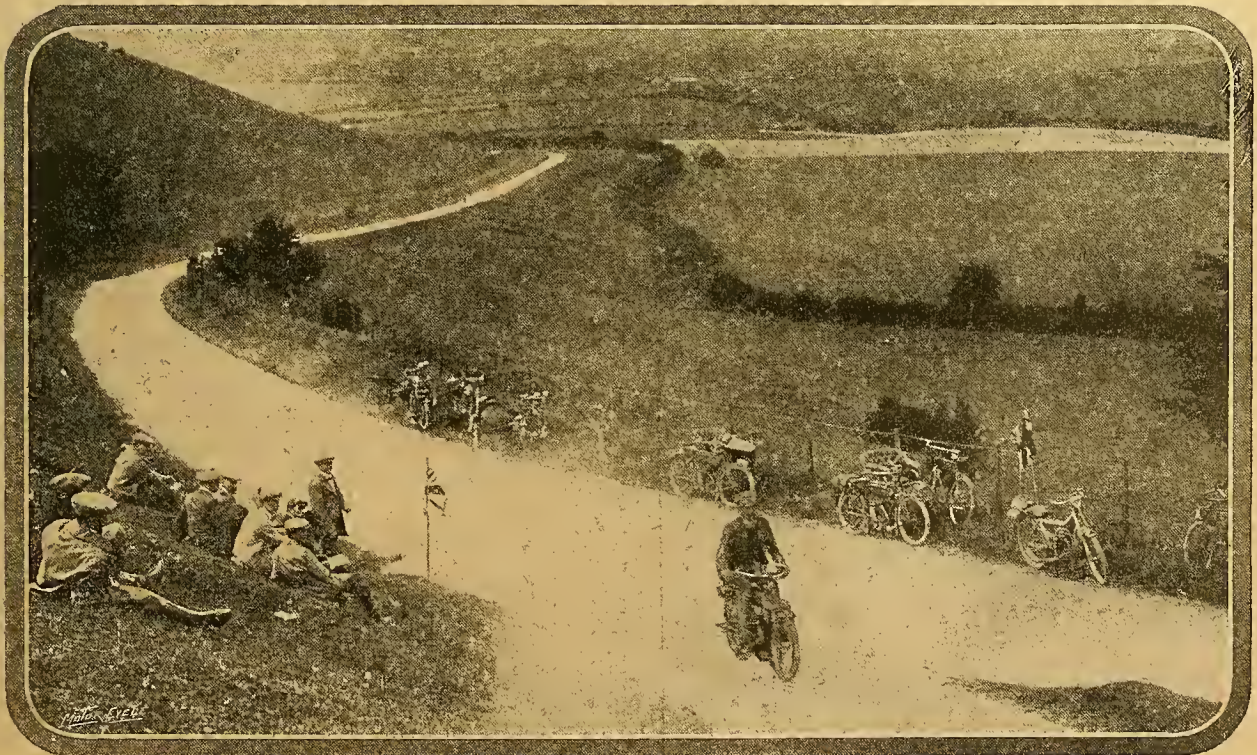
It is essential that the examiner should be supplied with three small photographs of each driver, measuring about 1½ in. square, head and shoulders only, unmounted.

### How to obtain the Special Customs Card.

The special Customs card, by which a motor cycle only, or a machine fitted with a sidecar, may be taken into Holland free of duty, can be obtained from the Touring Department of the R.A.C. on behalf of the A.C.U. free of charge, but it is essential that the following information concerning the machines should be supplied well in advance:

1. Owner's full name.
2. Home address.
3. Profession.
4. Make of machine.
5. Horse-power.
6. Number of cylinders.
7. Maker's number on engine.
8. Maker's number on frame (if any).

One of the small photographs is attached to the card.



Hampshire Motor Cycle Union hill-climb at East Meon. Percy Kiln (New Hudson) nearing the top of the rise. The hill, which is nearly two miles in length, appears to be an ideal one for hill-climbing purposes.



# Inter-club Hill-climb at Arms Hill.

North-west London M.C.C. v. Oxford M.C.C.



R. C. Davis (Oxford) makes a good climb with his 8 h.p. Chater-Lea sidecar.

W. A. Matthews (Triumph) of the winning team on the steepest part.

THE venue this year for what has now become an annual contest between these two clubs was Arms Hill, near Heuley-on-Thames. Each club turned up with fourteen starters, and as the performances of six only on each side were to be taken into account, it was thought that the struggle would be a very close one.

Shortly before five o'clock, Mr. F. G. Barton sent away the first man, R. A. Bishop, Oxford (6 h.p. Enfield sc.), who drove up without a falter. Following Bishop were H. F. S. Morgan, Oxford, and F. J. Wilmott, London (Morgan runabouts). Hal Hill, London (6 h.p. Zenith sc.), broke a belt; he was offered another start, but did not avail himself of it. It was unfortunate, as his failure meant a loss of 100 marks to his club. R. C. Davis, Oxford (8 h.p. Chater-Lea sc.), successfully accomplished the ascent. The passenger machines having been disposed of were followed by the solo motor cycles, each Oxford man being followed by a member of the N.W.L. The star performance of the day was undoubtedly A. C. Hardy's, Oxford (Norton), whose speed at the cannons approached 40 m.p.h.; he went up as straight as an arrow.

According to the regulations, six performances were chosen from each club to determine the winner. One of these had to be a sidecar, two had to be multi-speed solo mounts, while of the remainder not more than three must have engines over 500 c.c. The Oxford Club team proved the winners, with 560 points to 420.

The complete list of members of each club with their performances in marks are set out below:

OXFORD M.C.C.		N.W. LONDON M.C.C.	
R. A. Bishop (6 Enfield sc.)	100	F. G. Wilmott (Morgan)	100
R. C. Davis (8 Chater-Lea sc.)	100	H. Karslake (3½ Rover 3-sp.)	100
H. G. R. Slingo (5-6 Clyno 2-sp.)	100	G. E. Purchase (2¾ Douglas 2-sp.)	100
H. F. S. Morgan (Morgan)	100	E. F. Lawrence (3½ Rudge)	60
A. C. Hardy (3½ Norton)	100	King Smith (6 Bat)	60
F. Cooper (3½ Triumph)	100	H. E. Taylor (5-6 F.N. 2-sp.)	40
J. W. Tolladay (3½ B.S.A.)	100	G. H. Hollis (2¾ Douglas 2-sp.)	40
J. Lee-Evans (3½ Ivy)	100	H. Berlandina (2¾ Douglas 2-sp.)	40
H. A. Beard (3½ New Hudson 3-sp.)	60	L. Joiner (3½ Brown)	40
H. G. Hill (2½ Calcott)	60	W. King (S.I.A.M.T.)	40
H. G. Hill (3½ Bradbury)	60	Eric Rose (3½ P. and M.)	40
H. Askew (3½ Triumph)	60	H. J. Pooley (3½ Premier)	40
W. A. Matthews (3½ Triumph)	40	Claude Rose (3½ Rudge)	20
T. G. Hill (3½ James)	20	Hal Hill (6 Zenith sc.)	0
Total	1,100	Total	720

## SCOTTISH SIX DAYS' TRIALS.

The organisers of the Scottish Trials, the Edinburgh and District M.C., have been favoured with seventy entries for this important event. Below will be found a complete list.

The competition commences on Monday next, the 22nd.

R. Holloway (3½ Premier)	G. Bell (3½ New Hudson)
J. Oliphant (3½ Premier)	J. E. Chisholm (3½ James)
A. D. Scott (3½ Triumph)	Duncan Bell (5 A.J.S. sc.)
J. D. Morrison (5-6 Bat)	Charles W. Munro (2¾ Douglas)
R. S. Hood (6 Brough)	L. Newey (3½ Ariel)
A. A. Hay (4½ Quadrant)	C. T. Newsome (3½ Rover)
R. White (3½ Alldays-Matchless)	P. E. Tollfree (3½ Bat)
N. Soresby (3½ L.M.C.)	J. Steel (3½ B.S.A.)
A. J. Sproston (3½ Rover)	M. Pratt (3½ Alldays-Matchless)
F. Begley (3 Hazlewood)	A. F. Downie (3½ Ariel)
F. S. Douglas (8 Dot)	N. W. Downie (3½ James)
E. P. Macdonald (4 Norton)	A. O. R. Downie (2½ A.J.S.)
G. E. Cuffe (7 Indian)	R. G. Mundy
H. G. Dixon (3½ New Hudson)	G. T. Wood (8 G.W.K.)
H. Douglas (3½ New Hudson)	H. Baxter (3½ L.M.C.)
C. M. Keiller (8 G.W.K.)	

T. Silver (3½ Quadrant)	H. E. Wace (3½ L.M.C.)
L. E. Cass (4½ Quadrant)	W. Houghton (3½ Bradbury sc.)
Miss Muriel Hind (6 Rex)	W. Westwood (3½ Triumph)
S. J. K. Thomson (8 Bat sc.)	George Brough (6 Brough)
V. Taylor (3½ Rudge)	G. Taylor (3½ Rudge)
C. W. Meredith (3½ Bradbury)	Frank Smith (5-6 Clyno)
W. D. South (3½ Rudge)	J. R. Alexander (7 Indian)
Hugh Gibson (3½ Bradbury sc.)	W. B. Gibb (2¾ Douglas)
B. A. Hill (7 Indian)	G. L. Fletcher (2¾ Douglas)
J. S. Holroyd (2½ Moto-sacoche)	A. H. Alexander (2¾ Douglas)
H. Le Vack (2½ Motosacoche)	W. G. McMinnies (3½ Triumph)
J. H. Begg (3½ Rudge)	J. F. Morrison (2¾ Douglas)
R. Lord (6 Rex)	W. B. Little (3½ Premier)
F. C. North (3½ Ariel)	F. G. Edmond (3½ Humber)
P. W. Bischoff (3½ Triumph)	Bert Yates (3½ Humber)
E. B. Keiller (3½ Rudge)	A. G. Fenn (2¾ Humber)
W. Pratt (3½ P. and M.)	W. Creyton (2¾ Humber)
G. T. Gray (3½ Rudge)	F. J. Hutchison (5-6 Rex-Jap sc.)
G. E. Whitehouse (3½ Rover)	A. J. Dixon (3½ Singer)
J. Cocker (2½ Singer)	





### A Further Development.

YET another field of military utility has been found for the motor cyclist, who is gradually coming into his own (everything is gradual in this country where military matters are concerned). A new and somewhat romantic corps is in process of formation in which motor cyclists will be asked to volunteer their services. The new corps is termed the "War Kite Squadron," with headquarters at 11, Adam Street, Adelphi, Strand. It is a very high-flying corps both in actuality and metaphorically speaking, for it cares not a snap of the fingers for the War Office or the Royal Flying Corps—in fact, it is rather inclined to fancy itself a cut above both those institutions. The War Kite Squadron aims at producing on a voluntary basis an ideal intelligence service for our armies in time of war. Its man-lifting kites can go up even in a gale of wind to carry observers up into the air; the observer is linked to *terra firma* by a telephone wire, and next door to him a wireless kite is flying to speed all the information gathered across the waves of ether. The squadron has not sought, nor does it propose to seek, the approval of the military authorities—it is quite content to bide its time as a volunteer institution until the War Office itself makes the first advances. Already the London squadron has completed its skilled aeronautic ratings with willing recruits, and it has invited the Legion of Motor Cyclists to provide the men for the motor cycle section. Each squadron requires to enrol the services of one motor cyclist officer and ten N.C.O.s and men on motor bicycles. Their chief duty will be to carry messages telephoned down to them from the kite-lifted observer to army headquarters and to subordinate generals in the vicinity. Incidentally, also, the motor cyclists will be taught how to lay a telephone line when travelling at a high speed and also how to pick it up again at at least twenty miles an hour.

### A Uniform for the Legion.

It will be seen from the official notices in the Legion Magazine that a uniform has been designed and sanctioned for those corps of the Legion who decide to adopt it. The design is extremely ingenious, for it enables the jacket to be used both for civilian and military purposes by the simple expedient of turning up the collar and buttoning up the revers and adding the authorised belt and cap.

The material is of greyish waterproof fabric, the knickers are cut like riding breeches and laced below the knee, which gives a very smart appearance. When the collar is turned up it shows a band of scarlet round the neck, but when turned down it presents the appearance of an ordinary lounge jacket with outside breast pockets. The buttons are of leather. Messrs.

Alfred Dunhill, Ltd., are the contractors, and the whole outfit can be obtained for thirty-five shillings if ordered through organising officers.

### Army Manœuvres.

The Legion of Motor Cyclists has been invited to furnish motor cyclist despatch carriers for the army manœuvres in September this year, and this invitation may be considered as the first olive branch towards official recognition. Full details will be published in *The Motor Cycle* as soon as they are divulged. This is an extremely enjoyable way of taking one's holiday, and economical withal, since the pay and allowance will amply cover all expenses of the individual and of his machine.

### The Third Mobilisation.

It is greatly to be regretted that urgent affairs prevented Capt. Trapmann from being present at Nottingham on this occasion, and it is feared that owing to his absence several motor cyclists who wished to join the test failed to get their postcards returned to them in time. Owing to the holidays and manœuvres no further tests will be held until the autumn, and it is to be hoped by then that the military authorities will have been so favourably impressed with the value of the motor cycle that they will not require any more tests to prove to them that which is so obvious.

### The Legion of Motor Cyclists.

I am asked to say that all members of the Legion who have not yet provided themselves with the Legion badge should do so at once. This can be obtained from the Hon. Sec., at 128, Jermyn Street, price 1s. 4d. post free.



Mr. and Mrs. Barnes, of Surbiton, who are enthusiastic users of a 3½ h.p. Premier and sidecar. The hood and screen on the sidecar are worthy of note.



## CLUB NEWS.

**North Birmingham A.C.**

A hill-climb will be held at Weatheroak on the 27th inst.

**Mersey M.C.**

The team trial to Uttoxeter and back was held on the 14th inst. The winning team consisted of Baxter (6 Rex), P. Syvrett (6 Rex sidette), and A. J. Mason (3½ Rudge).

**Evesham M.C.**

On the 11th inst. a speed-judging competition was held. The numbers in brackets are the miles per hour the competitors drew. G. W. Whitehouse (Rudge-Multi) (16), 16½ miles per hour; R. D. Hodgkinson (6 Enfield and sc.) (20), 19½ miles per hour; E. Holloway (3½ Triumph two-speed and sc.) (9), 9½ miles per hour.

**Western District M.C. (London).**

The reliability trial for the Winter Cup was run off on the 14th inst., and proved most exciting. The course was 16½ miles round, starting from Gerrard's Cross, and had to be traversed eight times. The total distance amounted to 132 miles. Each circuit was timed. The results, subject to confirmation, were: 1, H. J. M. Hughes (6 N.S.U.), error (fast or slow in seconds) 73.9s.; 2, W. F. Ritchie (3½ Bradbury), 82.9s.; 3, R. F. Addey (3½ Triumph), 188.5s.

The next run is to Boulter's Lock, Maidenhead, on the 21st inst.

The petrol consumption trial fixed for the 27th inst. has been postponed until September, as the R.A.C. Associates' Meeting at Brooklands Motor Track takes place on that day.

**Brecon and Radnor M.C.C.**

The above club held its first reliability trial on Wednesday, July 3rd, over a course of 140 miles, *via* Builth to Aberystwyth, hence to Lampeter, Llandovery, and Brecon.

The following qualified for first-class medals: C. Nott (3½ Humber), F. Morgan (3½ New Hudson), J. G. Morris (3½ Bradbury), H. Jones (3½ New Hudson), J. Beynon (3½ Rudge), D. Fryer (3½ Premier), E. J. Allen (3½ Lincoln-Elk), R. S. Powell (3½ Bradbury), G. F. Jones (3½ Rudge), T. Cooper (3½ Rudge), G. Childs (3½ N.S.U.), L. Harpur (3½ Triumph), F. Phillips (3½ Rudge), P. Albutt (3½ Bradbury), and W. Evans (3½ Humber).

The special prizes for those running nearest to their schedule time were gained as follows: 1st, Hubert Jones (3½ New Hudson); equal 2nd, G. F. Jones and J. Beynon (3½ Ridges); equal 3rd, C. W. Nott (3½ Humber), F. Morgan (3½ New Hudson and sc.), and D. Fryer (3½ Premier).

**Grosvenor M.C. (Manchester).**

On July 7th this club carried out a very successful hill-climbing competition at the famous hill at Heyden Bridge on the borders of Cheshire and Yorkshire. The full course of two miles was taken. There were two classes, bicycles and three wheelers or cyclecars, of which there are several in the club. Results: Bicycles, H. V. Prescott (3½ Ivy-Precision); cyclecars, E. E. Crisp (4½ Eagle Runabout). (This machine, it is interesting to note, is twelve years old and the first made.)

**Lincolnshire A.C.**

Speed trials will be held at Thorrock Park, near Gainsborough (by permission of Sir Hickman Bacon) on the 20th inst. There will be three classes, No. 1 up to 350 c.c., No. 2 up to 500 c.c., No. 3 over 500 c.c. The formula  $C \times \sqrt{V}$  will be used.

**Rotherham and District M.C.C.**

A reliability run to Bridlington and back was held on the 7th inst. Owing to the rain in the morning only a poor number turned out. The results were:

Solo Mounts.—1, R. H. Gilling (P. and M.); 2, E. Cross (Triumph).

Sidecars.—1, W. Davis (James); 2, H. Page (Premier).

**Merionethshire M.C.C.**

The above club held a hill-climb on Bwlch-y-Groes on the 11th inst., starting from Bala, the distance being five and a quarter miles. Results: E. Wynne Hughes (3½ Triumph), 11m. 50s.; Arthur Williams (3½ Triumph), 12m. 49s.; O. P. Hughes (3½ three-speed Arno), 15m. 11s.; Dr. E. Williams (3½ Triumph), 18m. 48s. Enion Pierce, on his Rudge, failed at his first ascent, but afterwards was successful.

**Bristol M.C.C.**

The trial to the top of Porlock Hill and back was re-run on Saturday last, and a fine entry was obtained, with the result of a splendid competition and the conquest of Porlock Hill (despite its present very bad condition) by a large majority of the competitors.

The trial was a go as you please to Alcombe, 58½ miles from Bristol, then a non-stop to the top of Porlock Hill at 20 m.p.h., and then home again, checking at headquarters; total, 136 miles. One mark penalty for every second early or late. All over five minutes early or late declared out of competition. Results: 1, J. B. Kellar (B.S.A.), total error 8s.; 2, H. Wasley (Douglas), 21s.; 3, E. Kickham (Douglas), 25s.; 4, P. Grout (Quadrant), 74s.; 5, H. Moxley (Rover), 97s.

**Glasgow M.C.C.**

This club held their annual twelve hours' reliability trial on July 6th, and secured a record entry of twenty-six. There were twenty starters, and of these fifteen finished the severe course of 205 miles. In addition to the ordinary checks there were secret controls on certain twenty mile stretches, and the winners were those whose times were nearest to the schedule at all checks, both open and secret.

The following riders completed the course without loss of marks, and hence qualify for gold medals: W. Hood (Rudge), H. J. Macial (Rudge), W. Deans (Rudge), A. Pow (Triumph), A. Fraser (Rudge), G. W. Orr (Ariel), D. Reid (Rudge), G. Thomson (James), and J. Garner (Triumph).

The president's prize for the best performance was won by W. Deans, and the special prize, offered by Messrs. Stich and Roberts, for the best sidecar performance, went to Duncan Beel (5 A.J.S.). Lindsay (3½ Rover and sc.) was awarded a gold medal for his excellent performance.



Grosvenor M.C.C. hill-climb at Heyden Bridge. A group of competitors at the foot of the hill.



## Club News.—

**Redditch and District M.C.C.**

The result of the speed-judging contest was as follows: 1, E. Webb; 2, E. White; 3, L. Hadley.

**Oxford M.C.C.**

The second social run, to meet members of the Reading Motor Cycling Club, took place on the 26th ult., to the George Hotel, Wallingford.

**Ipswich and District M.C.C.**

The team trial arranged for the 29th ult. had to be postponed on account of heavy storms, until the 20th inst., the occasion of the run to Southwold.

**North Middlesex M.C.C.**

The Devonshire tour will start on August 3rd. at 3 p.m. On August 10th there will be an open reliability trial for ladies only.

**Hunslet M.C.C.**

There was a muster of over forty for the first invitation run. The route was *via* Otley, Ilkley, Wharfedale, Newbiggin, Masham, Ripon, and Harrogate.

**Blackpool and Fylde M.C.C.**

On the 7th inst. there was a reliability run to Harrogate and back, 155 miles, *via* Longridge, Clitheroe, and Skipton. Result: 1, S. O. Taylor (8 Rex-Jap); 2, R. G. Parker (2½ Douglas); 3, H. B. Bailey (3½ Triumph).

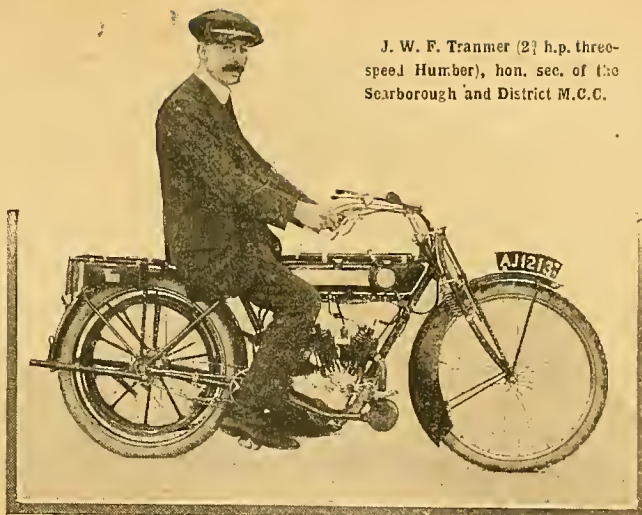
**Surrey M.C.C.**

A reliability competition from Guildford to Lyme Regis will take place on the 20th inst. The controls will be as follows: Alton, Romsey, Ringwood, Dorchester, to Lyme Regis. Every section must be covered without a stop.

**Middlesbrough and District M.C.C.**

The fuel consumption trial was held on Saturday, 6th inst. Result:

Competitor and machine.	Fuel.	m.p.g.	ton-m.p.g.
Gilchrist (3½ Zenith) ...	benzol	162	27.7
Liddle (3½ Triumph sc.) ...	"	92.3	24.8
Challons (3½ Premier) ...	petrol	133	21.1
Deuchars (3½ Roc-Jap) ...	"	115	18.8
Bowers (3½ Roc) ...	"	104	16.3
Jefferson (3½ Triumph) ...	"	88.8	12.7



J. W. F. Tranmer (2½ h.p. three-speed Humber), hon. sec. of the Scarborough and District M.C.C.

**Speedwell B.C.**

The Speedwell Bicycle Club, which was founded in 1876, has formed a motor cycle section, to be run on touring and sociable lines. Anyone interested can obtain information and entrance forms from Mr. W. V. Pinfield, 1, St. Alban's Road, Moseley, Birmingham.

**South Birmingham M.C.C.**

On the 20th inst. the club will hold a sporting competition, run, and hill-climb on an unknown hill.

The committee have decided that the Allday cup be awarded as a perpetual trophy to the member making the best performance in club competition during the season, and the Lyett cup be won outright by the amateur in a similar manner.

**NOTICE.**

Owing to the great increase in the number of clubs in the country and the general desire expressed for notices respecting club doings to appear in the club news pages, secretaries are requested to be as brief as possible.

**THE MOST NORTHERLY MOTOR CYCLE CLUB.**

The most recently formed and the most northerly motor cycle club on the mainland is called the John-o'-Groat's M.C.C. It is open to the County of Caithness with headquarters at Thurso. The opening run consisted of a tour of sixty miles by John-o'-Groat's and Wick. The run was not

officially observed, and the stops for tyre and thirst troubles were not recorded against the riders. The home journey was broken at Wick, where the club had tea. The club is to arrange for a speed trial and a hill-climb during the summer.

The newly formed John-o'-Groat's Motor Cycle Club—the most northerly club in Great Britain.



Members gathered at John-o'-Groat's on the occasion of the opening run.

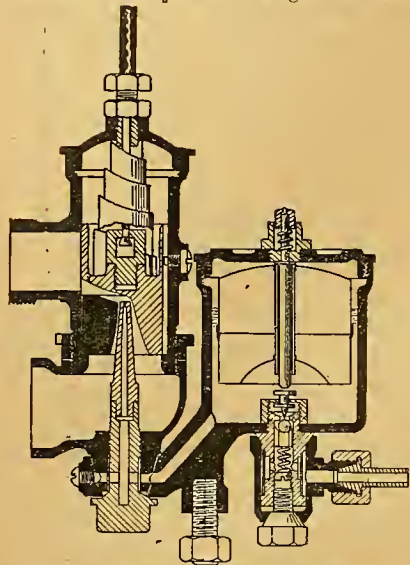




## A NEW LONGUEMARE CARBURETTER.

Years ago the Longuemare was the best known and most generally used carburetter on motor cycles. That was in the days of tank lever control. Longuemare Frères have now introduced a new automatic carburetter suitable for motor cycles, embodying interesting departures, the action of which may be easily seen from the appended drawing.

The float chamber is on the usual lines, except that the float needle is very short and is held up by a small spring ball valve. The float itself is guided by a pin attached to the lid. A neat filter of good proportions is fitted at the petrol intake. The jet is a single one and



The latest Longuemare motor cycle carburetter.

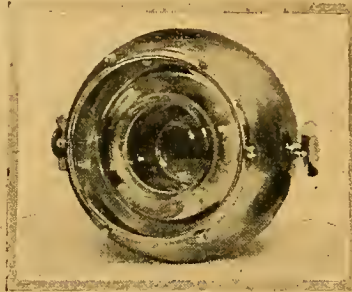
rather long, and is surrounded by a brass piston throttle. The part shown black in the drawing is stationary, but the other part may be raised by means of a lever and Bowden wire attachment. All the air is taken in from the base of the carburetter and passes directly past the jet. It will be noticed that owing to the contour of the piston valve, the air opening around the jet is gradually increased as the throttle is opened. This action gives the effect of a choke tube, variable with the throttle opening. The mechanism is easily accessible, and the float chamber may be swung to any position.

A handle-bar controlled piston throttle is a new departure for this firm, and enthusiastic users of Longuemare carburetters in the old days will no doubt try the latest design with interest. The agents are E. J. Hardy and Co., Queen Victoria Road, Coventry.

## A NOVEL ELECTRIC LAMP.

A lamp which we referred to as being seen on one of the competitors' machines in the London to Edinburgh run was the Nups, sold by J. A. Husbands, 14a, Leicester Street, Leicester Square, W. The lamp is an electric one, and has the bulb placed centrally in the internal reflector, and in front of this is a powerful dioptic lens; consequently, a very fine and powerful beam of light is projected. As far as possible the lamp is

devoid of all exterior excrescences, and is, consequently, very easy to keep clean. The particular lamp shown, which is of a peculiarly pleasing appearance, is designed specially for sidecar work, and has internal sockets for the fork bracket. Mr. Husbands informs us that he is about to get out a smaller type for motor bicycle



use, and will endeavour to light it by means of dry batteries. This lamp will be a replica in miniature of the one we illustrate, and, as is the case with the latter, will be provided with a neat telescopic focussing arrangement for the bulb.

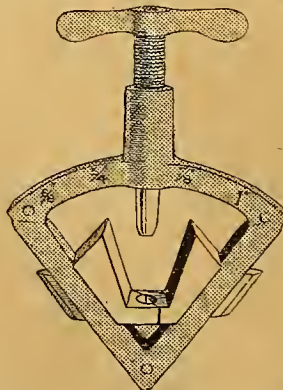
## A SIMPLE SPRING IMPROVEMENT.

Many cars are now fitted with spring devices interposed between the shackles of the springs on which the chassis is suspended. These springs absorb all the minor road shocks which the larger leaf springs are too stiff to take up. This excellent system has now been adopted for sidecars, and the accompanying illustration shows a set supplied by Mr. H. Taylor, of Store Street, Tottenham Court Road, W.C.



## A NEW BELT PUNCH.

The Dunlop Tyre Co. seldom do things by halves, and, having been most successful with the round topped Dunlop belt, they have now introduced a belt punch which has been specially designed to take this pattern of belt in any size from



5 in. up to 1 in. It pierces a clean hole in the centre of the belt, and, although primarily intended for round topped belts, is equally suitable for the flat pattern.

## A RECIPROCATING VALVE GRINDER.

The Warrow reciprocating valve grinder is an ingenious tool placed on the market by Brown Bros., Ltd., 15, Newman Street, Oxford Street, W.

It will be seen on reference to the sketch that the grinder somewhat resembles an ordinary geared brace, but the rotary motion of the handle, instead of producing a continuous motion of the spindle, causes the latter to move round half a revolution and return once to every revolution of the handle. The reciprocating motion is produced simply by the aid of a bevel gear wheel on

the handle from which more than half the teeth are missing, so that when the teeth on the wheel are engaged with the top bevel on the shaft it drives the shaft in one direction, and when they engage with the bottom bevel the spindle is driven the other way.



Another new fitting, by the same firm, takes the form of a sidecar lamp bracket. It is substantially made and drilled so as to be fixed on to the spring by the existing U clip, a special clip being supplied if necessary.

### Trial Lessons Free.

The London School of Motoring, 19a, Tottenham Court Road, W.C., inform us that they have decided to give a trial lesson free to anyone who is contemplating the purchase of a motor cycle.

### In Case of Need.

Telephone services are being organised on main roads by the A.A. and M.U. Patrol sentry boxes are being erected at intervals along main roads, and in each will be installed a telephone connected to the nearest exchange. Members will be able to use these telephones free of charge except in the case of trunk calls, when the usual fees will be charged.

### Peugeot Motor Cycles in England.

One of the most successful motor bicycles made in France is the Peugeot, and during the recent revival of the motor cycle industry in that country, in nearly every competition in which it has taken part, it has emerged with flying colours. These machines will in future be sold by Messrs. Peugeot (England) Ltd., 10, Brompton Road, S.W. The types marketed are the 2½ h.p. light weight singles, and the 5 h.p. and the 7 h.p. twin-cylinder models. These machines are fitted with Truffault spring forks, which are exceedingly comfortable.



"For the Highway or the Skyway."

# BROOKLANDS, July 10th, 1912. HOUR CYCLECAR RECORD

broken by a BEDELIA using

# WAKEFIELD

# "CASTROL" (REGD.)

beating the previous one by 388 yards.

## 45 MILES 278 YARDS

were covered in this remarkably short time. Give "CASTROL" a trial and notice the difference in the running of your machine.

C. C. WAKEFIELD & CO., 27, Cannon St., London, E.C.

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Send for  
our latest  
production.

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# HUTCHINSON TYRES

## TOURIST TROPHY

1912.  
(Junior Class.)

# FIRST

## NINE PLACES

Secured by riders on HUTCHINSON Tyres, a triumph of endurance and consistent running.

**FASTEST LAP** of the day made on HUTCHINSON TYRES.

1910 T.T. Race, **FIRST** and **SECOND**

1911 T.T. Race, **FIVE** out of **SIX**  
first places.

No other tyre can boast such a record. That is why the **HUTCHINSON** is distinct from all others.



HUTCHINSON TYRE Co., 70, BASINGHALL ST., LONDON, E.C.

Send for  
our latest  
production.

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In answering these advertisements it is desirable to mention "The Motor Cycle."

B27



# MATCHLESS

THE WORLD OVER





Wherever motor cycling is followed, the name "MATCHLESS" is known and respected.

Matchless SPEED, Matchless RELIABILITY, and Matchless SATISFACTION IN USE, are the unequalled attributes of this champion motor cycle. For hard work on all sorts of roads, and under all conditions of climate, the "MATCHLESS" is pre-eminent. Write for the Illustrated Catalogue.

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The Best

**GREAT REDUCTION IN PRICE.**

Why use endless or Butt ended. Have the tube with 8 years' reputation and guaranteed to give satisfaction.

**NOT BUTT ENDED**

**FREE CIRCULATION OF AIR**

**RELIABILITY OF THE RICH**

**DETACHABLE TUBES & COVERS**

4,500 miles or a RICH Tube and Cover without using the pump. This absolutely unsolicited testimonial can be seen, with a thousand others, at our office; also hundreds of ends of all other makes — British and Foreign — with the opinion of the riders.

Write for Booklet and copy of Testimonials.

**GUARANTEED AIR-TIGHT, with free Air Passage.**

REDUCED PRICE LIST, JULY 8TH.

HEAVY.		EXTRA HEAVY.	
Recommended for all ordinary purposes.		For heavy and high power machines.	
1 1/2	20in. 28in.	2 1/2	26in. 28in.
1 1/2	9/- 10/-	2 1/2	17/6 20/-
2	13/- 15/-	2 1/2	22/- 25/-
2 1/2	14/- 16/-	3	26/- 30/-
2 1/2	16/6 18/6	3 1/2	32/- 36/-
	24in., 6d. less.		24in., 1/- less.

**PEDAL CYCLE,** 1 1/2, 1 1/2, 1 1/2 .. 6/-  
**TANDEM HEAVY** 1 1/2, 1 1/2 .. 8/-

Converting own Tubes.  
Approx. 1 1/2 2 1/2 2 1/2 3 1/2  
Price 3/- 5/- 5/- 6/- 7/- 8/-  
Pedal Cycle 1/6 Tandem, 2/- & 2/3

If you cannot obtain them from the Trade write direct, enclosing P.O. Sent per return post.

**The RICH Detachable Air Tube Co.**  
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26 x 2 B.E. 32/-, 2 1/2 36/-  
2 1/2 40/-

One Quality Only—  
THE BEST.

**REGISTERED**

**THE RICH**

**TRADE MARK**

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Easy Starting - Easy Running.

**AIR COOLED**

**"Filtrate"**

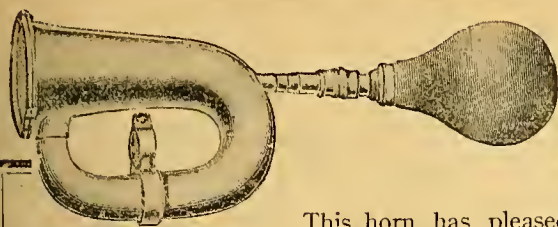
**REGISTERED**

**FOR MOTOR CYCLES**

Sole Makers:

**FILTRATE WORKS, LEEDS.**





## Rotax Clarionette

—the best English M.C.  
horn on the market.

This horn has pleased all who have purchased it. It is a handsome fitment 16" long, heavily plated with nickel. The bulb is of high-grade make. A dustcap is fitted. Its shape renders it very easy to clean. The tone is very penetrating—audible for a considerable distance—yet it is musical.

Any good agent will supply you with this horn at 18/9.

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The **SIMPLEST**  
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**TERMINAL YET**  
**INTRODUCED.**

Sure Contact.  
Simply bare and  
position wire, lend  
over, and fasten  
with hammer or  
pliers.

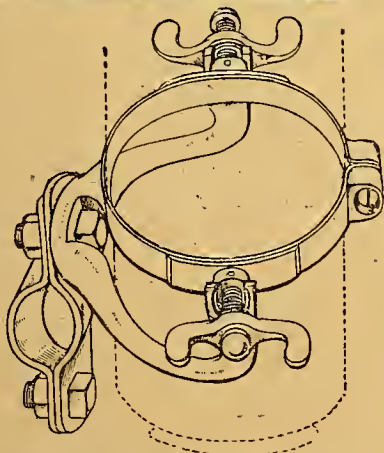
From your Agent,  
High or Low  
tension, 1/- a doz.

## F. R. S. LAMPS AND GENERATORS, HOLD WORLD'S RECORDS.

Sidecar  
Bracket  
to hold any  
size  
generator,  
on any  
sloped tube,  
in an  
upright  
position,

**6/6**

complete.



Send for Catalogue of our  
**LAMP with 1,200 feet beam**

**HALL, LTD., Wrotesley Street, BIRMINGHAM.**  
**60, SHOE LANE, LONDON.**

SPECIAL  
AGENTS

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# Harrods BARGAINS FOR THE HOLIDAYS

A Few Shop-soiled Machines at Special  
Prices.

1.  $3\frac{1}{2}$  h.p. Standard "Bradbury" .. £44
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3.  $2\frac{1}{2}$  h.p. "Elswick," F.E. .. £40
4. 4 h.p. "Norton" (Big Four) 2 speed  
F.E. ... .. £55
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Armstrong .. .. £53
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11.  $5/6$  h.p. "Zenith Gradua." .. £65
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THE ABOVE ARE ALL NEW MACHINES AND  
OFFERED SUBJECT TO BEING UNSOLD ON  
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For IMMEDIATE DELIVERY of all the leading  
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SPECIALISTS IN  
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UNIQUE AND COMPREHENSIVE ILLUSTRATED  
CATALOGUE FREE ON APPLICATION.

Any make supplied on  
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Richard Burbidge, Managing Director,

**BROMPTON ROAD, LONDON, S.W.**



**95 GUINEAS, ready for the Road.****SATISFIED CUSTOMERS.**

20/3/12. "The Rollo is running extremely well—in fact, far better than I anticipated. She holds the road perfectly."

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17/5/12. "I am still getting satisfaction out of my car. . . I hope you are getting plenty of orders."

AND MANY OTHERS.

Catalogues and full particulars from The ROLLO CAR Co., Ltd., Conybere St., Birmingham (Eng.)

**THE RELIABLE ROLLO.**

The Premier 4-wheeled Cyclecar. Fast, Safe, and Simple.

**SATISFIED CUSTOMERS.**

20/5/12. "I should like to tell you that my car is going beautifully at present. It has climbed Dashedwood Hill with 24 stone up, also three suit cases, spare tyres, oil, and petrol."

25/5/12. "I fully endorse the testimonials you have received. The little car is a marvel, and goes wonderfully."

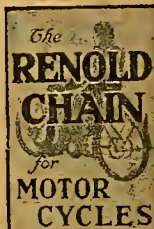
31/5/12. "I should like you to know that I am delighted with my Rollo car. I can drive and control it perfectly, and have indulged in' scrapping with eminently satisfactory results. With two up and luggage I passed five cars which were all endeavouring to pass one another to avoid the dust, and have attained a speed of 47 m.p.h. I also left an 8 h.p. and sidcar on the road. This would have beaten me if it had not been for your variable gear. Please accept my best compliments."

AND MANY OTHERS.

**RENOLD CHAIN**

for Motor Cycles.—Will outlast many belts and give better running.

Write for Booklet which tells The Story of Renold, to:—HANS RENOLD, LTD., MANCHESTER.

**WHEN ARRANGING A TOUR**

use "THE MOTOR CYCLE ROUTE BOOK"

Price, 1/6 net. By post, 1/9.

LILFFE &amp; SONS LTD., 20, Tudor Street, E.C., and all booksellers.

**Grand Prix de Turin**

100 Kilometres, June 26th, 1912.

**Marvellous Successes**

accomplished on Motor Cycles fitted with:

**U. H. MAGNETOS****CLASS I.**

Luschi on S.I.A.M.T. - - - FIRST.  
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Della-Ferrea on Della-Ferrea - - FIRST.  
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Surely a Magneto of this description is what you require on your Motor Cycle.

Booklet containing full particulars Post Free.

**S. WOLF & Co.,** 115, Southwark Street, LONDON, S.E.

Telegrams: "Widerstand, London."

Telephone: 6172 Central.

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**BEST VALUE.****IMMEDIATE DELIVERY from the LONDON AGENTS:****MATCHLESS.**

8 h.p. Double Belt Passenger Models,  
 and 5 h.p. T.T. 6-speed Models.

**HAZLEWOOD.****A.S.L.****CALTHORPE.****ACCESSORIES.****REPAIRS.**

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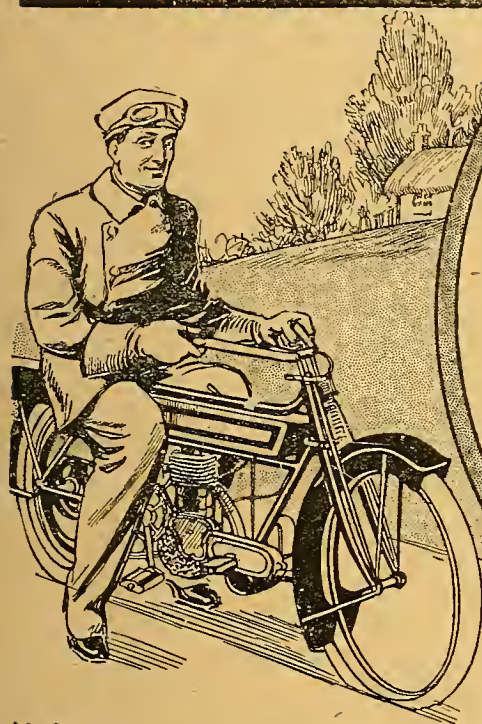
1907.

**184, Great Portland Street, W.**

Tele { phone: 4839 Mayfair,  
 grams: "Motopance, London."



# PARSONS RAPID REPAIR KIT



## Punctures lose their terror

In the old patch and solution days, punctures were serious things. But since the introduction of the Parsons Rapid Repair Kit punctures have lost their terror. With a Parsons Rapid Repair Kit in your toolbag or pocket, the permanent mending of a puncture is only a matter of three or four minutes' easy work. You locate the puncture, take out about a foot of tube, punch the hole clean, insert a plug, and compress same with the special pliers supplied. That completes the job. And a puncture mended in this way is permanent—it can never leak, neither can the plug creep.

Write for  
descriptive  
booklet.

Complete Kit, which measures 7" x 4", and weighs 1 lb., contains piercing tool, stretcher, closing pliers, and 12 plugs. The cost is

The Parsons Non-Skid Co., Ltd.,  
23, Store Street, London, W.C.  
and at 237, Deansgate,  
Manchester.

**15/-**

GOODS



# THE BLUEMEL-MASCO Special Steatite PLUG



Price  
3/6 Each.

Price  
3/6 Each.

The Bluemel Mascot plug will stand up to the severest work it is possible to give it—and all the time. It will get the last ounce out of your Engine.

A Triumph rider does 14,000 miles with one Bluemel-Mascot plug.

Dear Sirs, Rose Eden, STAINES. April 15th, 1912.

I am taking this opportunity of thanking you for the plug you sent, and saying what I think of the last one I had.

I ran it over 14,000 miles on a Triumph machine and during the whole of that time it was never even cleaned, in fact it gave no trouble whatever. Yours truly,  
(Signed) H. Parkinson

Motor Cycle  
List, post free.

C. W. BLUEMEL & BROS.,  
WOLSTON. - Nr. COVENTRY.

In answering these advertisements it is desirable to mention "The Motor Cycle."

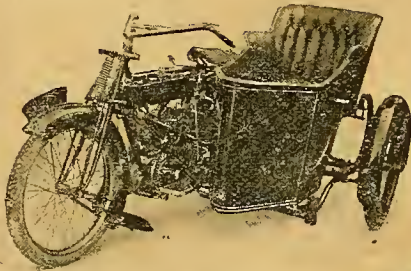


# P. J. EVAN'S MOTOR DEPOT,

## 1912 MODELS IN STOCK.

1912 TRIUMPH, Clutch Model .....	£55 0
1912 HUMBER, 3½ h.p., 2-speed .....	£52 10
1912 HUMBER and Canoelet .....	£65 0
1912 ENFIELD, 6 h.p., and sidecar .....	£84 0
1912 CLYNO and sidecar .....	£80 0
1912 CLYNO, 6 h.p., 2-speed .....	£68 0
1912 ZENITH, 3½ h.p. model .....	£55 0
1912 ZENITH, 6 h.p. model .....	£70 0
1912 BRADBURY, 2 speed .....	£55 0
1912 BRADBURY, chain drive .....	£58 10
1912 B.S.A., 2-speed .....	£60 0
1912 RUDGE, multi .....	£60 0
1912 NEW HUDSON, 2½ h.p., as new .....	£42 0
1912 NEW HUDSON, 3½ h.p., soiled .....	£55 0
1912 ARIEL, T.T., shop soiled .....	£42 0
1912 JAMES, 4 h.p., chain drive .....	£59 10
1912 JAMES, 4 h.p., 3-speed .....	£58 10
1912 ALLDAYS, 3½ h.p., 2-speed, as new .....	£45 0
1912 ENFIELD, 2½ h.p., 2-speed .....	£52 10
1912 DOUGLAS, Standard .....	£41 0
1912 A.J.S., 2-speed .....	£48 0
1912 HUMBER, 2½ h.p., 3-speed .....	£52 10

MONTGOMERY AND CANOELET SIDECARS



### 6 h.p. ENFIELD

Coach-built Sidecar,

£84 complete.

I have four of these in stock, secure one at once.

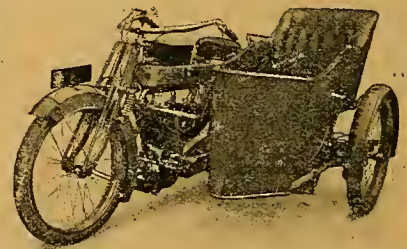
THIS PHOTOGRAPH REPRESENTS A PORTION OF MY STOCK, DUPLICATES are packed in crates ready for immediate despatch. Let me have your enquiries. I am sure to suit you. Trade supplied.

CARRIAGE PAID ON ALL MACHINES.

6 h.p. CLYNO and Sidecar, £80 complete.

Four of these famous models in stock.

IMMEDIATE DELIVERY.



I can deliver from stock ALL THE CHOICEST AND BEST MAKES. With

the above selection there is no need to await delivery, call and inspect machine, and ride it away. : If unable to call, write me.

### SPECIAL BARGAINS.

1912 HUMBER, 2-speed, as new .....	£45 0
1912 ENFIELD and Coach's car, cost £88 ..	£75 0
1912 DOUGLAS, 2-speed .....	£42 0
1912 NEW HUDSON, 2½ h.p., 3-speed .....	£42 0
1912 ARIEL, T.T., shop-soiled .....	£42 0
1912 BRADBURY, slightly used .....	£42 0
1912 ALLDAYS, 3½ h.p., and sidecar .....	£48 0
1912 HUMBER, 3½ h.p., 2-speed .....	£35 0
1911 HUMBER, sidecar, and spares .....	£40 0
1911 TRIUMPH, Clutch Model .....	£42 0
1911 DOUGLAS, Standard .....	£28 0
1911 ENFIELD, 2½ h.p., chain drive .....	£28 0
1911 A.J.S., 2½ h.p., belt drive .....	£23 0
1911 BRADBURY, Clutch Model .....	£36 0
1911 BRADBURY, Mabon Clutch .....	£32 0
1911 HUMBER, 2 h.p., lightweight .....	£25 0
1911 L.M.C., with variable gear .....	£30 0
1910 TRIUMPH, Clutch Model .....	£22 0
1910 TRIUMPH, Standard .....	£30 0
1910 SCOTT, excellent order .....	£30 0
1909 TRIUMPH and sidecar .....	£30 0

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## SPARKHILL, BIRMINGHAM.

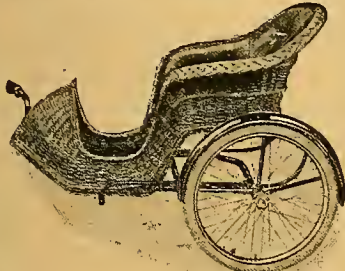
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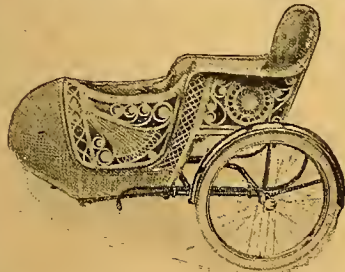
# CORONET SIDE CARS

You take no risk if you purchase a **CORONET**. Satisfaction is assured. They are scientifically constructed; weight is correctly distributed, consequently "side-drag" is imperceptible. Write for descriptive list post free.

CAN BE OBTAINED FROM ALL DEALERS.

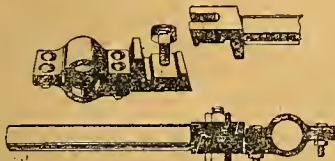


Model 1. High-class Canoe-iron Body, Cranked Axle, and other improvements, £6 6 0.



Model 4. Ornamental Cane Body, as illustration, or Close Reed Cane Body, £8 8s.

**CORONET DETACHABLE JOINTS** enable our side-cars to be detached in one minute.



We illustrate herewith the "Coronet" Quick-detachable joints, which are fitted to all our models. To detach is simply a matter of unscrewing nut about five threads. When attached, and nut screwed tight, the joint is solid and perfectly rigid, and does not rattle like some patent joints held in position by springs and pins that are liable to shake loose.

**MAGNETOS. MAGNETOS. MAGNETOS.**

We have a large stock of the best makes from 59/6. Your old coil and acc. taken in exchange.

**25/- ALLOWED**

for your B. & B. or Amac Carburetter if fitted with H.B. control in exchange for a new 1912 **SENSPRAY** or **BINKS**.

**BOOTH'S MOTORIES,**  
KEIGHLEY MILLS, BEDFORD ST. NORTH  
(off Pellon Lane), HALIFAX. Tel. 1062.

## MOTOR BICYCLES FOR SALE.

LIVERPOOL.—Colmore Depot.

SALE of new and 2nd-hands.—18, Renshaw St.

**DOUGLAS:** stock bought before the T.T. boom.—Colmore Depot, 18, Renshaw St., Liverpool. [2568]

**CHATER-LEA,** No. 7, passenger model, ready.—Colmore Depot, 18, Renshaw St., Liverpool. [2569]

**BAT,** chain drive, 2-speed, 8h.p., fresh from works.—Colmore Depot, 18, Renshaw St., Liverpool. [2570]

**PRECISION,** built to order for 38gns.; wonderful value.—Colmore Depot, 18, Renshaw St., Liverpool. [2571]

**CLYNO** Sidecar Combination, immediate delivery.—Colmore Depot, 18, Renshaw St., Liverpool. [2572]

**BAT**—What offers for new but odd stock: 8h.p., 1912, belt, 2-speed; list price £68/10.—Colmore Depot, 18, Renshaw St., Liverpool. [2573]

**TRIUMPH,** 1910, 3h.p., and 1910 Douglas 2-speed; £34 each.—Colmore Depot, 18, Renshaw St., Liverpool. [2574]

**1912** Scott Cycle, been 600 miles, as new; £60.—The Motor Garage, Castleford. [2109]

**DOUGLAS,** model K, just received; £50 cash.—Erans, motor agent, 50, Market St., Wigan. [2623]

**2h.p.** Motosacoche, mag.; bargain, £20.—Tuddeham, c/o Seed, 63, French Gate, Doncaster. [X6574]

**1911** Royal Enfield, 2-speed, free engine, in splendid condition; £34/10.—Atkinson, Nelson. [X4598]

**1910** Scott, in good running order, spares, etc.; £32.—Atkinson, Nelson. [X4599]

**3h.p.** Clyde, accumulator ignition, running order; £6, no offers.—Atkinson, Nelson. [X4600]

**BOLTON**—Late 1909 Triumph, everything good condition; any trial; £29, or exchange.—Below. [X4601]

**BOLTON**—3h.p. Precision, just re-examined, plated, overhauled throughout, latest B. and B. Bosch mag., new Dunlops, stand, carrier, etc.; £21, only wants seeing.—Bel.w. [X4602]

**BOLTON**—Several Rexes from £18; also many other makes for cash or exchange.—Parker, Westbrock St., Bolton. Phone: 1348. [X6573]

**1912** T.T. Triumph Cycle, only been 500 miles; £45.—A. H. Burnell, Aire St., Castleford. [2108]

**1912** Phelon and Moors; immediate delivery; £64.—The Cycle Shop, 26, Aire St., Castleford. [2110]

**1912** Rudge, standard, new April, scarcely used, as new, complete; £39/10.—Timberlake, Wigan. [X6655]

**TRIUMPH,** very late 1911, standard, new Christmas, as new, not ridden 800 miles; £39.—Timberlake, Wigan. [X6856]

**TRIUMPH,** 1910, standard, thorough good order and condition, climb anything; £33.—Timberlake, Wigan. [X6857]

**6h.p.** Matchless, 1910, a.o.v., standard model, good condition, fast; £30.—Timberlake, Wigan. [X6858]

**RUDGE** Multi, 1912, 3h.p., new, never been ridden; good reason for selling; £54.—Reed, 6, Blake St., York. [X6642]

**REX,** 3h.p., August, 1911, perfect, 30gns. complete, cost 50.—Reed, 6, Blake St., York. [X6641]

**1912** New Twin Clyno; £68/5: liberal exchange or cash offers considered.—Collier's, Westgate, Halifax. [2486]

**ANTOINE** 6h.p. Twin, mag., Saxon forks, low, dropped frame; £23/10.—Collier's, Westgate, Halifax. [2487]

**PRESTON**—In stock, 6h.p. Zenith, 6h.p. Jap-Rex, twin Centaur lightweight, 3-speed; sale or exchange. [2488]

**PRESTON**—Bargains in modern 2nd-hands, must clear; sidecars, the best ever offered; send for lists. [2489]

**PRESTON**—Cyclecar, almost new, one of the best on the road; cheap, or exchange.—The Motor Cycle House, 82a, Fishergate. [X6779]

**1910** Triumph, re-bushed, tyres and belt nearly new, perfect; £28, lowest.—26, Carter Knowle Rd., Sheffield. [X6376]

**1912** 3h.p. El-wick, B.S.A. free engine, as new; sacrifice £45, or exchange for twin.—12, Jaffery St., Leigh. [X6500]

**DOUGLAS,** 1910, condition excellent, new back tyre, accessories, spares; trial; £25.—Rodgers, Newstead, Rotherham. [X6554]

**1911** Humber, perfect condition, Whittle; any trial.—J. S. Smith, 18, Arcliffe Terrace, Legrams Lane, Bradford. [X6728]

**NEW** 6h.p. Matchless, 2-speed model, in stock; 66 gns.; new 5-6h.p. Clyno in stock, £65.—Cross, agent, Rotherham. [X6902]

**1911** Rudge, in fine order, £35; 1911 Bradbury, £33.—Cross, jeweller, Rotherham. [X6903]

**SCOTT,** 1910, excellent condition, Palmer cords; bargain, £35.—Prospect Cycle Co., 176, Wakefield Rd., Bradford. Phone: 2969. [X6513]

**REX,** 1909, 3h.p., fine Dunlops, footboards, very good condition; £25.—Prospect Cycle Co., Bradford. [X6514]

## DO IT NOW!

Send on your cheque and secure a Brand New 1911 3h.p. **PREMIER**, fitted with all improvements, as turned out by makers, at a reduction of £11. Only the price of a "second-hand."

LIST PRICE, £47 10.

OUR PRICE, £36 10.

Fitted with Sturmey-Archer or Armstrong 3-speed gears, £10 extra.

Finest Sidecar Machine made.

<b>CLYNO,</b> 1912, only run 200 .....	£63 10
<b>HUMBER,</b> 1911, 3h.p., two speeds, handle starting, and Millford sidecar .....	£40 0
<b>PREMIER,</b> 3h.p., 1911 model .....	£30 0
<b>N.S.U.,</b> 3h.p., magneto, h.b. control, spring forks, 2-speed gear .....	£17 10
<b>N.S.U.,</b> 3h.p., 1908, magneto, 26in. wheels .....	£13 10
<b>REX,</b> 3h.p., 1908, spring forks, magneto ..	£16 10
<b>Twin DOT,</b> 5-7 h.p., 2 speeds, 1010 .....	£35 0
<b>CLYNO</b> —New 1912 model in stock .....	£68 5
<b>4h.p. PRECISION,</b> Millennium 2-speed hub, 1912 model, only run 300 miles .....	£42 0
<b>REX DE LUXE,</b> 5 h.p. twin, 1911 M.O.V., with 1/2 12s. Rex sidecar .....	£47 10
<b>REX</b> 3h.p., vertical engine, magneto ....	£8 10
<b>TRIUMPH,</b> 1909, 2-speeds .....	£33 10
<b>N.S.U.,</b> 3h.p., 1909, 2-speed gear .....	£23 10
<b>SAROLEA</b> 5 h.p. Tricar, P. & M. gear ....	£10 10
<b>ENFIELD</b> Lightweight, 1910 .....	£18 10
<b>QUADRANT,</b> 3h.p., magneto, spring forks ..	£16 10
<b>N.S.U.,</b> 3h.p., M.O.V., magneto .....	£15 10
<b>DARRACQ</b> 9 h.p. 2-seater Car, 3 speeds and reverse .....	£15 10
<b>HOBART,</b> 3 h.p., vertical engine, low .....	£8 10
<b>3 h.p. CLYDE,</b> M.O.V., magneto .....	£8 10
<b>PREMIER,</b> 1912, 3-speed, only run 300 miles ..	£48 10
<b>QUADRANT,</b> 3 h.p., vertical engine .....	£5 10
<b>HUMBER</b> Tricar, open frame, wheel steering, water-cooled .....	£15 0
<b>ANTOINE,</b> 3 h.p., vertical engine, h.b. control, spring forks .....	£8 10

PUSH CYCLES TAKEN IN EXCHANGE.

### ENGINES.

3h.p. M.M.C. silencer, magneto, M.O.V. ...	£8 10
3h.p. REX, M.O.V. ....	£4 0
2h.p. MINERVA, M.O.V., pulley .....	£3 0
4h.p. GARRARD, water-cooled, clutch ....	£4 10
2h.p. WERNER, 39/- ..	1h.p. MINERVA, 29/6

### GREAT CLEARANCE LINE.

26 x 2 1/2 in. Heavy Pedley Cover; listed 5/-	27/6
26 x 2 1/2 Best Batted Tubes .....	6/11
24 x 2 and 2 1/2 Beaded Clipper Covers, new ..	8/5
New Lyett Rubber Belt, 7ft. 6in., 3in. ....	11/6

### 4h.p. PRECISION ENGINES.

We will make a good allowance for your old engine in part payment for one of the above up-to-date powerful engines.

### MISCELLANEOUS.

WANTED.—N.I. All Spring Forks.

New 1912 B. & B. Carburetter .....	23/6
Nearly New 1912 Buks' Carburetter .....	26/6
Bosch Magneto, nearly new .....	£3 6
Nearly new 1912 Senspray .....	23/6
Bradbury pattern Handle-bars .....	6/6
Lowen Sidecar, cost £14 .....	4/6
Longueunne, Minerva, F.N. Carburetters ..	5/6 and 6/6
Long Handle-bars, dropped ends .....	3/3 and 4/6
Coronet Silencers, up to 5 h.p. ....	1/-
Gripstin, Bolting, 1in. 10d., 1in. 11d., 1in. 1/-	2/11
Wide Mudguards, 4in. ....	pair
B. & B. and Amac, h.b. control .....	13/8
New Amac Carb, h.b. control .....	20/-
Montgomery Sidecar, 10 guinea model ....	£3 10
Mills-Fulford Sidecar .....	£3 15
Tabular Carriers, with drop ends .....	4/3
New Mirror Lens Lamp with generator ....	12/6
Sidecar Lamps, show red behind .....	5/9

**Booth's Motories,**

Keighley Mills, Bedford Stree. North, Halifax.  
Tel. 1062.



# THE PORTLAND SIDECAR

COMFORT AND STABILITY.



Best 26 6s. model male.



£7 7s. model. £8 8s. model.

26 x 2 1/2 in. & 26 x 2 1/2 in. MICHELIN or CONTINENTAL tyres (Hutchinson Studded), 5/- extra, beaded edge

QUICK DETACHABLE FITTINGS, ENGLISH CANE AND WICKER BODIES, CHATER-LEA HUBS, FLAT BASE STANDARDIZED RIMS, BEST QUALITY CEE SPRINGS, ALL TELESCOPIC TUBES PLATED, FIT ANY MACHINE.

GUARANTEED 12 MONTHS.

"DUTCH CLOG" model .. .. £11 11  
"ALL CANE" model .. .. £12 12  
"LOUNGE BODY" model .. .. £13 13

Read what users say: 14, Warwick Road, New Southgate, N.

Dear Sirs,—Some time since I purchased from you a shop-soiled sidecar, and after running same for about 3,000 miles felt I should like to let you know how very satisfactorily it has been running. The chassis is now as true all over as on the day it was delivered to me, and that in spite of being run on many occasions with two passengers and under the worst of conditions.

After seeing the sorry turn-outs some of my friends have paid three times as much for, after barely 1,000 miles' running, I feel it only due to you to send this appreciation with the usual disclaimer.

You are at liberty to use this letter as you please, and to give my name and address to any enquirer. Personally I have, and shall, always recommend a "Portland" to anyone who wants a practical and thoroughly efficient sidecar.

Yours faithfully,  
(Signed) W. E. BAKER.

A New Hudson rider says:

Ilfley Road, Oxf.-rd.  
... I think this is good evidence of the strength and reliability of your machines.

The way we go up hills is simply marvellous. The machine simply advertises itself wherever it goes, and causes a lot of attention with one of Maude's "Dutch Clog" sidecars attached.

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(Signed) G. S.

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MATCHLESS, 3 1/2 h.p., T.T., very fast, in real good order; £34 cash; any trial.—Colmore Depot, 261, Deansgate, Manchester. [2579]

MINERVA, 3 1/2 h.p., 1909, mag., h.b.c., climb anything; £16; any trial.—Colmore Depot, 261, Deansgate, Manchester. [2580]

MERRICK for Bradbrys, Chater-Lea, Rudge, A.J.S., Matchless, etc.—Merrick's Stores, Listerhills, Bradford. Phone: 2439. [0038]

MOTOSACOCHE, 2 1/2 h.p., almost new, Palmer special tyres, splendid condition; £25, lowest.—Collins, 11, Hard Lane, St. Helens [X6718]

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A.S.L. 1912 the famous air sprung £52/10 model, done 200 miles; only take £42/10 spot cash.—Motor Exchange, 32, Downing St., Manchester. [X6692]

ENFIELD, 1911, 2 1/2 h.p., chain driven, overhauled makers this week, tyres perfect; any trial; £27; owner taking sidecar machine.—W., 18, North Rd., Leamington. [X6701]

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3 1/2 h.p. Rex, low built, mag., h.b.c., Continental tyres, 22 perfect condition; £16, or near offer; also spare spring forks.—E. Brock, Lightcliffe Road, Birkland Halifax. [X6520]

MINERVA, 3 1/2 h.p., 1909, and sidecar; £15/10, or separate; Helleson's, all spares, valve plugs, belts, tools, etc.—27, Amos St., Church Lane, Harpurhey, Manchester. [X6735]

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DOUGLAS, 1912, model K. indistinguishable from new, nearest £46; Cromet sidecar, £6/6 model, not yet delivered, accept £5.—Welcome Hotel, Great Martin, Blackpool. [X6640]

RUDGE, 1912, 3 1/2 h.p., F.E. net ridden 400 miles, Powell-Hammer lamp, generator, horn, tools, etc., complete; £45, or offers.—Maxwell, 59, Hemfield Rd., Higher Face, Wigan. [X6717]

CLYNO, 1912, May 15th, tyres unspratched, unpunctured, perfect order throughout, as new; giving up sidecar work; £55 for quick sale.—Lockwood 57, New St., Huddersfield. [X6399]

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TRIUMPH, 1909, good condition, Palmer tyres, lamp, horn, etc., £30; also sidecar, rigid, nearly new, quick detachable fittings, £4; seen by appointment.—Williams, 25, Lovely Lane, Warrington. [X6504]

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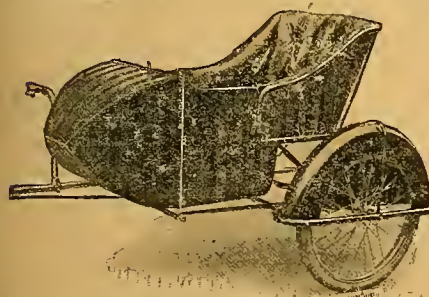
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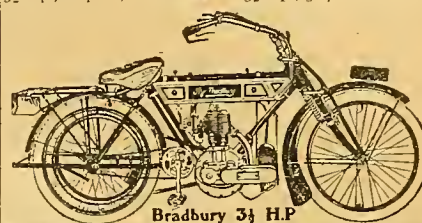
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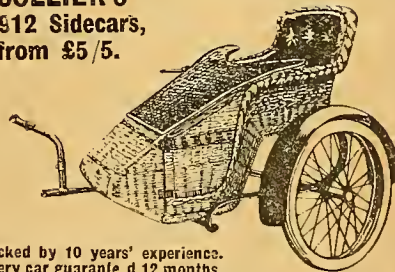
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- 1142 BRADBURY, 3½ H.P. Fine order. Lamp, horn, and tools. £34
- 1130 BRADBURY, 3½ H.P. SPEED MODEL. In perfect order. Lamp, horn, etc. £33
- 1109 DOUGLAS, 2½ H.P. Lamp, horn, and tools. Like new. £30
- 1141 ENFIELD, 2½ H.P. Beautiful order. Lamp, horn, and tools. £25
- 1130 F.N., 2 H.P., 2-SPEED. Lamp, horn, and tools. X-ALL saddle. £30
- 1154 F.N., 4-CYLINDER, 5-6 H.P., 2-SPEED. Lamp, horn, and tools. £38
- 1187 N.S.U. 6 H.P., 2-SPEED. Fine sidecar machine. Lamp, horn, and tools. £42
- 1192 PREMIER, F.E., 3½ H.P. Fine order. Lamp, horn, and tools. £38
- 1176 TRIUMPH, F.E., 3½ H.P. Almost like new. Lamp, horn, and tools. £42
- 1209 ZENITH, 6 H.P. Splendid for sidecar. Lamp, horn, and tools. £52
- 1090 ZENITH, 3½ H.P. Good appearance. Lamp, horn, and tools. £38
- 1182 ZENITH, 3½ H.P. Exceptionally good order. Lamp, horn, and tools. £41
- 1910.
- 1129 DOUGLAS, 2½ H.P. Very little used. Lamp, horn, and tools. £24
- 1091 SCOTT, 3½ H.P., 2-SPEED, 2-STROKE. Lamp, horn, and tools. £28
- 1191 V.S. 5 H.P., 2-SPEED. Good sidecar machine. Lamp, horn, and tools. £30

## ROBERTSONS

TELEPHONE MAYFAIR 5767

157b, GREAT PORTLAND STREET, W.

## MOTOR BICYCLES FOR SALE.

- 1911½ Humber, 2-speed, done 1,800, Jones, many spares, lamp, whistle; £38, cost £60.—First, 214, North Fosse, Leicester. [X2494]
- 2½ h.p. Clyde, mag. ignition, thoroughly overhauled, 24 and guaranteed perfect running condition; £11.—Wait and Co., Ltd., Leicester. [X6557]
- 1911 2-speed Humber, Cowey, lamp, good condition throughout; nearest £36.—Langham, 18, Chestnut St., Leicester. Private owner. [X2495]
- LADY'S Jap-Norton, perfect condition, just done up by makers; selling through illness; 2½ h.p.; £17.—Hilton, Orlingbury, Wellesborough. [X2641]
- 1912 Triumph, equal brand new, with, horn, spares, etc.; bargain seldom met with at £42.—McCutcheon, 36, Spencer St., Coventry. [X6819]
- 3½ h.p. Rex, h.b.c., R.B. carburettor, Mahon free engine, spring forks, footboards, low saddle, new tyres, excellent condition; £17/10.—Hinkins, Retford. [X6845]
- CLYNO, the sidecar machine, three latest models in stock for immediate delivery.—P. J. Evans, Wholesale and Retail Agent, Sparkhill, Birmingham. Tel.: 15 Victoria. [X6742]
- HUMBERS, 3½ h.p., 2-speed, and 2½ h.p., 3-speed, in stock, immediate delivery.—P. J. Evans, Sparkhill, Birmingham. [X6743]
- HUMBER, 1911, 2-speed, excellent order, £35; with sidecar, £40.—350, Stratford Rd., Birmingham. [X6744]
- ENFIELDS, 6 h.p. models with coach-built sidecars, in stock; £24; immediate delivery guaranteed.—P. J. Evans, Motor Depot, Sparkhill, Birmingham. [X6745]
- ENFIELD, 1912, 6 h.p., and coach-built sidecar, complete Lucas lamp, spares; cost £23, accept £25.—P. J. Evans, 360, Stratford Rd., Birmingham. [X6746]
- N.W. Hudson, 1912, 2½ h.p., 3-speed, Lucas lamp, spares; cost 52 few weeks ago, accept £42.—360, Stratford Rd., Birmingham. [X6747]
- SCOTT, 1910, 3½ h.p., water-cooled, in exhibit order; £30.—358, Stratford Rd., Birmingham. [X6748]
- 1911 Humber, 3½ h.p., 2-speed, free engine, lamp, generator, spares, perfect condition; £34.—Horace Jones, The Hollies, Acocks Green, Birmingham. [X2543]
- DOUGLAS, 1911, 2-speed, free engine, not done 1,400, horn, cyclometer, perfect, unspratched; £38, or exchange Model K with cash adjustment.—More, Danchurch. [X6712]
- MOTOREVE 1910 Twin Lightweight, just overhauled and fitted with B. and B. h.b.c. carburettor, very fast and reliable machine; £17/10.—Geo. Smith, 67, Albany Rd., Coventry. [X6764]
- IN Stock, latest models 2½ h.p. A.J.S., 2½ h.p. Enfield, 3 h.p. B.S.A., 3½ h.p. Triumph, and 6 h.p. Zenith-Gradua; also 3½ h.p. Famin, 2-speed, 2nd-hand, 14 gns.—West's Garage, Lincoln. [X6656]
- RUDGE, 1911, exceptional condition throughout, especially engine, tyres, and belt, lamp, spare valves, tools, etc.; very cheap at £33/10.—North, 135, West Parade, Lincoln. [X6654]
- REX, 5 h.p. twin, 1908, fitted with Roe free engine, handle starting, spring forks and seat. Besch mag., just been overhauled; £19, bargain.—A. Holland, Clarendon St., Coventry. [X6522]
- 2½ h.p. Enfield, latest 1911 model, new March, 1912, F.E. and 2 speeds, special 21 Drednought tyres, like new, condition excellent; cost £54, sacrifice £39.—Dr. Taylor, Hocknall, Notts. [X6722]
- 5-6 h.p. Clyno, late 1911 model, 2 speeds, Lucas lamp and horn, spare inner tubes and valves, mud shield, etc., tools, just been overhauled by makers.—B x 965, The Motor Cycle Office, Coventry. [X6795]
- MINERVA, 3½ h.p., late 1909, Bosch mag., spring forks, Palmers, exceptional condition, very little used; bargain, £19; combination wanted, good.—64, Tilton Rd., Small Heath, Birmingham. [X6395]
- 3½ h.p. 1910 Rex de Luxe for sale, Jones speedometer, 32 P. and H. lamp, 3-note horn, drip feed; £40, or offer; not done more than 2,000 miles; lovely sidecar mount.—Apply, Motorist, 10, Charles St., Nuneaton. [X6581]
- 1912 Precision, 3½ h.p., Sturmer-Archer 3-speed and free engine, starts with back wheel on ground, done 300 miles, perfect, variable choke and jet, Bosch waterproof mag., h.b.c. throughout, climb anything, ideal for solo or sidecar; bargain, 42 gns.—Kelham, Bourne. [X6768]
- 1912 Rudge, T.T., also F.E. Zenith, Singers, immediate delivery; 1912 F.E. Singer, just overhauled by makers, £39; two 1911 Triumphs, standard, condition excellent, not ridden since March, being taken in exchange; £37 each.—Midland Cycle Co., Coalville, Leicester. [X6909]
- BROUGH, 5-6 h.p., a.v.v., twin, May, 1910, Simms, B. and B. Brooks, 1912 handle-bars, frame re-enamelled, engine in excellent condition, good tyres, spring-up stand, accessories; £30; trial by appointment; Brough 3 firsts London-Edinburgh trial.—Walker, 15, Sneyton St., Nottingham. [X6721]
- TRIUMPH, 1910½, just been thoroughly overhauled by makers, many 1912 improvements, including new carburettor, piston, engine pulley, handle-bars, belt, etc., perfect condition, Lucas lamp, many spares, not done 200 miles since overhaul; owner bought car; £35.—Holtcroft, Ingleside, Four Oaks, Warwickshire. [X6524]

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NEW MACHINES  
ACTUALLY IN STOCK  
AT TIME OF GOING TO PRESS.

5 F.E. TRIUMPHS, £55 ea.

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## ROBERTSONS

TELEPHONE 5767 MAYFAIR.

157, GREAT PORTLAND STREET, W.



## MOTOR BICYCLES FOR SALE.

**MINERVA**, 2½h.p., 29; Crown speed indicator, low built, good running order.—34, Sportsbank St., Catford. [2362]

**1912 F.E. Rudge, B. and B.**, var., unsratched, done 150; £48.—Seen Benwell's, 14, Clapham Rd., S.W. [2659]

**TRIUMPHS**, Clyaas, Douglas, A.C. Sociables to-day; deferred terms a speciality.—Whiteley's, Queens Rd., W. [1361]

**£9/15**—3½h.p. Clyde, m.o.v., mag., good tyres, perfect condition; or exchange tricar.—Strong's, Jun., Acton, London. [2587]

**2½h.p. Twin Moto-Reve**, mag., Druids, tyres good; cheap for cash.—Swanbourne, Brawning Rd., Worthing. [2680]

**3½h.p. 1910½ Triumph**, splendid condition, lamp, horn; £32 for quick sale.—54, Wellington Rd., St. John's Wood. [2676]

**INDIAN**, blue, 1912, 7½h.p., 2 speeds, very little used, lamp, generator, horn, clock, tools, new spare tube; £72.—See below.

**MOTOSACOCHE** 2½h.p., 1911½, free engine, mag., absolutely perfect, spares, accessories; £27.—M. Tor, 1, Addison Bridge Place, Kensington, W. Tel.: 5215 Westero. [2591]

**KERRY**, 2½h.p., mag., in good running order; £10/10.—Somerset Villa, Cranville Rd., Wandsworth. [2506]

**ARIEL**, Ariel, variable gear models; immediate delivery; trial runs arranged.—Beck, Camden Passage, Islington. [0007]

**2½h.p.**, only been 80, Dunlops, Helleira ignition; £22 nearest £9/10.—72, Br. de la Bank Rd., Wandsworth. [2504]

**£9** for 3½h.p. De Dion motor cycle, B. and B., very low, take sidecar anywhere.—55, Islingwood Rd., Brighton. [2449]

**ZENITH**, Rudge, and Douglas, all models, for immediate delivery; trade supplied.—Rey, 5, Heath St., Hampstead. [X896]

**DOUGLAS**, 1912, model G, new condition, fine climber, accessories; £37.—Longman, 40, Lillie Rd., Fulham. [2374]

**ARIEL**, variable gear models; immediate delivery; trial runs arranged.—Taylor, 28, Lower Addiscombe Rd., Croydon. [0060]

**TRIUMPH**, 3½h.p., new cvl., piston, valves, tyre, re-bushed, Amac; £18.—29, Gilston Rd., South Kensington, S.W. [2592]

**MINERVA**, 2½h.p., splendid order, spares; £7; no correspondence; see.—Woodford, Wells Motor Works, Essex. [2448]

**TRIUMPH**, late 1911, nearly new condition, perfect running order; sacrifice £38/10.—51, High St., Tunbridge Wells. [X6681]

**14** h.p. F.N. Lightweight Motor Cycle, good condition; owner going abroad; what offers?—Aldridge, Park Rd., Brentwood. [X6475]

**WANDSWORTH**—Great bargain; brand new 1911 F.N., 4 cys., 10 months' guarantee; cost £52/10, £45.—Below.

**WANDSWORTH**—V.S., 1910 model, 7½h.p. twin, mag., 2 speeds, cream finish, as new; £38/10.—Below.

**WANDSWORTH**—Premier, latest 1910 3½h.p. twin m.o.v., mag., first-class order; bargain, £29/15.—Below.

**WANDSWORTH**—Humber, 1909½, 3½h.p., m.o.v., mag., 2 speeds, Druids, fine order; bargain, £22/10.—Below.

**WANDSWORTH**—Bat-Jap, 1909 model, 9½h.p. twin, fine sidecar machine; cheap, £29/10.—Below.

**WANDSWORTH**—Rex de Luxe, 5½h.p. twin, mag., 2 speeds, free engine, new condition; £28/10.—Below.

**WANDSWORTH**—N.S.U., 3½h.p., m.o.v., mag., 2 speeds, spring forks, runs well; bargain, £22/10.—Below.

**WANDSWORTH**—Roe Military model, 4½h.p., m.o.v., mag., Druids, handle starting, nice order; £19/19.—Below.

**WANDSWORTH**—N.S.U., late 1908, 4½h.p. twin, mag., B. and B., h.b.c., splendid order; £18/10.—Below.

**WANDSWORTH**—Quadrant, 3½h.p., like new; £12/15; exchange—Wandsworth Motor Exchange, Elmer St., Wandsworth Station. [X6834]

**3½h.p. Kerry, B. and B.**, X'fall forks, Matchless 2½h.p. brake, and footrests; £11/15.—25, Gloucester St., Clerkenwell. [2650]

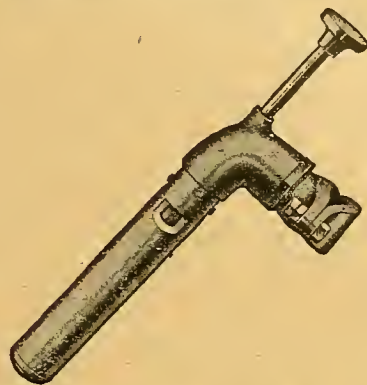
**B.S.A.**, 1911, as new, £37; also Douglas, 1911, scarcely used, £27.—Seen, 56, North Side, Clapham Common. [2640]

**LATE 1910 Clutch Triumph**, in splendid condition; trial run given, £35.—W.H., Mason's Aries, East St., Walworth, S.E. [2493]

**2½h.p. Lightweight**, spring forks, new tubes and cover, good condition.—Scott, 35, Talbot Rd., South Tottenham. [2670]

**DOUGLAS**, 1910, in perfect order throughout; any examination; £26.—Heath, Ophir Laundry, Park St., Tottenham. [2589]

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The Service Co., 292, Holborn, W.C.  
East London Rubber Co., Gt. Eastern St., E.C.

## MOTOR BICYCLES FOR SALE.

**BRADBURY**, 3½h.p., standard; £48; in stock.—Agents, Bright and Hayles, 73, Church St., Camberwell Green. [X6645]

**BRADBURY**, 3½h.p., 2-speed model; £55; in stock.—Agents, Bright and Hayles, 73, Church St., Camberwell Green. [X6646]

**BRADBURY** Spare Parts and Repairs a Speciality.—Bright and Hayles, 73, Church St., Camberwell Green. 'Phone: Hop 50. [X6647]

**MATCHLESS**—The unequalled sidecar machines. To get early delivery call at once.—Keys, 44, Finsbury Pavement, London. [2582]

**RUDGE**, clutch model, 1912, as new, perfect, accessories; bargain, £45.—Rucker, 23, High St., Wealdstone, Middlesex. [2376]

**ARIEL**, 2½h.p., Amac, h.b.c., ready for immediate use, fine condition all through; bargain, £9.—West, 29a, Walm Lane, N.W. [X6519]

**MOTOSACOCHE**, 1909, 1½h.p., mag., little used, new Palmer tubes, accessories; £16, bargain.—14, St. John's Rd., Brixton. [X6823]

**REX de Luxe**, 1911, 3½h.p., cone clutch, scarcely soiled, bargain, £34/10.—Campel, 24, Berkeley Mews, Portman St., W. [2414]

**3½h.p. Fafnir**, 2 speeds, handle starting, wheel steering; £16, or offer.—Whiteley's Motor Works, Clarence Rd., Hackney. [2492]

**£12**—3½h.p. Bat, splendid condition, just overhauled; low, fast, good climber.—Wheeler, 85, The Avenue, Bruce Grove, Tottenham. [X6523]

**2½h.p. Humber Lightweight**, like new; accept £26, or exchange for higher power.—F. Kesterton, 13, Priory Park Rd., Kilburn. [2482]

**1910 Triumph**, 3½h.p., perfect condition, new tyre, just overhauled and re-bushed; £33, bargain.—W., 2, High Rd., Chiswick. [X6563]

**MINERVA**, 2½h.p., tyres good condition, B. and B. carburettor, horn, etc.; £7/10.—Geo. Bannister, "Fairview," Newick, Sussex. [2406]

**1912 6h.p. Zenith**, just overhauled by J.A.P.'s, in fine condition; £55.—Norman Gray, Wilton Lodge, Winchmore Hill, N. [2512]

**BAT-J.A.P.**, January, 1912, 8½h.p., Dunlop voitures; cost £62, accept £49.—Dobbs, 121, Breakspears Rd., Brockley. [2669]

**TRIUMPH**, 1909, flat piston, horn, tools, tyres good, overhauled for sale; £28/10.—Eaton, 33, Madeira Rd., Streatham, S.W. [2513]

**MOTOSACOCHE**, 1910½, mag., 2½h.p., 2 Whitties, head light, footrests, horn, perfect; £18.—67, West Side, Clapham Common. [X6815]

**F.N.**, 1909, 5½h.p., 4-cyl. mag., central intake, B. and B., h.b.c., good tyres, fine order; must sell, 16ms.—2, Trewith St., Earlsfield. [X6833]

**2½h.p. Auto**, h.b.c., spring forks, new belt, carburettor, 24 wants attention; £6, or nearest offer.—Durant, Parkfield, Hadley Wood, Barnet. [2492]

**3½h.p. Noble**, B.B., Bosch, new Dunlop belt, tyres good, must sell, bargain, £15 or offer.—24, Willoughby Park Rd., Tottenham. [2655]

**1911 Standard Douglas**, splendid order, not done 1,000 miles; £31, first cheque secured.—Menzies, Englefield Green, Surrey. [2602]

**£9**—3½h.p. De Dion, new Chater No. 6 frame, good sidecar machine, Whittle belt, etc.—38, Luxon St., Goldharbour Lane, Camberwell. [X6720]

**3½h.p. 1911½ Motor Cycle**, Singer, engine, str., 22 powerful machine, with back passenger carrier; £24.—9, Exmouth St., Stepney, E. [2369]

**KERRY**, 2½h.p., splendid condition, new Lomax bands, overhauled; sacrifice, £12/10.—P. Pierson, 46, Bernard Av., W. Ealing, W. [2402]

**MOTOSACOCHE**, 1910 2½h.p. free engine, Whittle belt, tyres perfect, fine condition; £18.—Chatwin and Hartley, King St., Richmond. [2548]

**HUMBER**, 3½h.p., 2-speed, December, 1911, Palmer, Dunlop, Lucas head light, accessories; £37, bargain.—1, Townley Rd., Dulwich. [2657]

**2½h.p. Minerva-Royal**, Enfield, new tyres and tubes, 24 low, in running order; £8/10, bargain.—Atherton, Church Rd., Upper Norwood. [2510]

**ZEDEL-GRIFFON**, 2½h.p., splendid order, £10; very low, light cycle, cost £8/8, take £3/10, or exchange.—30, Elington Rd., Bcw, E. [2496]

**HUMBER**, 1911, 2½h.p., lightweight, perfect condition; £25/10, or nearest offer.—Ogden Smiths, St. John's Hill, Clapham Junction, S.W. [X6392]

**DOUGLAS**—Place your order now if you want immediate or early delivery of Douglas motor cycles.—Keys, 44, Finsbury Pavement, London. [2581]

**14** h.p. Minerva Lightweight, Longueville, Clinchers, low built, thorough condition; £5/10.—10, Aulay St., Ossory Rd., Old Kent Rd. [2671]

**P. AND M.**, light model, 1911, 2 speeds, handle starting, etc., perfect; £36, or nearest offer; also Model E Douglas.—H., 24, Fulham Rd., S.W. [X6663]

**TRIUMPH**, 1910, excellent condition; £71, or exchange Douglas or sidecar combination.—Pierce-Dunlop, Malbrooke, E. Molesey, Surrey. [2678]

**F.N.**, 1912, 5½h.p., 4-cyl. model, practically as new; £40, or nearest offer.—Apply, Box L8,019, The Motor Cycle Office, 20, Tudor St., E.C. [2454]



# MOTOR BICYCLES FOR SALE.

**EAGLES**—N.S.U. 3 1/2 h.p., brand new, enamelled crown, low build, max. 1911 spring forks, adjustable pulley; £31. deferred payments.

**EAGLES**—B.S.A. 1912, 3 1/2 h.p., 2-speed and free engine model, with all accessories, new a few weeks ago, only ridden 200 miles; cost £65, accept £50.

**EAGLES**—N.S.U. 4 h.p., twin, 1910 model, m.o. valves, 2 speeds, free engine; £30.

**EAGLES**—Bradbury, 1912, 2-speed and free engine model, belt drive, nearly new; £47.

**EAGLES**—N.S.U., 3 1/2 h.p., 1908, magneto, spring forks, 1912 B. and B. carburettor, adjustable pulley; £17/10.

**EAGLES**—Indian, 7 h.p., 1911, twin, free engine model, enamelled blue, fine condition; £43; or exchange lower power.

**EAGLES**—P.N., 1911, 4-cyl., automatic carburettor drip lubrication, fine condition; £34.

**EAGLES**—Mills-Pulford sidecars; always a large stock of latest models, from £26/6.

**EAGLES**—N.S.U., 6 h.p., latest model, twin, with 2 speeds, free engine; £61/15 (the ideal sidecar machine); delivery from stock.

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**EAGLES** and Co., High St., Acton.—N.S.U., West London district agency. Immediate delivery of 1912 models: liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X6904]

**REX** de Luxe, 1911, 3 1/2 h.p., free engine, handle starting, hand horn, ridden twice; bargain, £33/10.—Percy, 47, Canterbury Terrace, Maida Vale. [2711]

**TRIUMPH**, 1912, 3 1/2 h.p., free engine model; instant delivery; £55, cash, or deferred payments.—John Barker and Co., Kensington High St., W. [X5622]

**16**—4-cyl. 4 h.p. F.N. mag., B. and B. carburettor, h.b.c., lamp, spares, complete running order. £18.—J. Burchett, 38, Mortlake Rd., Ken. [205]

**ROCHEPEUGEOT**, 1910, 5 1/2 h.p., 2-speed, Whittle Bosch, B. and B., P.R.S. lamp; £28.—Garaged Meeks, 254, Archway Rd., Highgate, N. [2540]

**4** h.p. F.N., good condition, just overhauled, guaranteed tool stand, 21 tyres, spares; examination after 7; £19/10.—Lewis, 8, Forster Rd., Beckenham. [2505]

**MOTO-REVE**, 1910, 2 1/2 h.p., twin, Druids, just been thoroughly overhauled, good tyres; £15/10, or nearest offer.—Jenkins, 173, Camden Rd., N.W. [2355]

**HAZLEWOOD**, 1912, 2 1/2 h.p., 3 speeds and clutch lamp, horn, speedometer, only done 500 miles. £45.—Ivy Bank, Carshalton Rd., Sutton, Surrey. [263]

**ZENITH**, 3 1/2 h.p., 1911, perfect order, new Whittle lamp, horn, new back tyre, etc., £41/10; with sidecar £43/10.—Omar, 4, St. Anne's Rd., Harrow. [259]

**TRIUMPH**, 1910, almost new condition, spares Palmer cord just fitted; £40, or near offer; buying chain-driven.—Wedgate, tobacconist, Margate. [2467]

**LINCOLN** Elk, 3 1/2 h.p., 1911, in new condition, horn, mirror, spare tube, belt, plugs, valves, etc.; £27.—High, 37, Boston Rd., Walthamstow, Essex. [X5581]

**TRIUMPH**, 1909, with 1912 Bosch mag., in splendid condition, lamp, horn, spare valve, plugs, etc.—E.H., 37, Boston Rd., Walthamstow, Essex. [X559]

**PHILSON** and Moore, Ltd., 4, Percy St., W., have several 2nd-hand P. and M.'s for sale; particulars on application or can be seen at above address. [X677]

**1911** Kerry-Abington, 3 1/2 h.p., Bosch, B. and B. footboards, Lucas head light, trip cyclometer accessories; £32/10.—Broom, Willow St., Romford. [268]

**1912** 3 1/2 h.p. Premier, 3-speed Armstrong, new condition; £44, absolute bargain; all accessories.—7, Vale Ter., Chelsea. Tel.: 2705 Kensington. [263]

**1910** Triumph, rebushed throughout last week, new belt, good tyres, lamp, generator, spares, etc., perfect condition; offers.—Reeve, Wanchai, Woking. [2467]

**1910** 2 1/2 h.p. Douglas, in first-class condition, had little use, good climber; bargain, £25 cash.—Apply, R. Henshaw, 35, St. George's St., Canterbury. [2461]

**OFFERS**, 2 1/2 h.p. Kerry, B. and B. h.b.c., new P. mers, rebushed throughout, footrests, low, and distance to buyer.—156, Charlton Lane, London, S.E. [263]

**DOUGLAS**, late 1910, 2 1/2 h.p., magnificent condition absolutely unscratched, new Dunlop tyres and tube-lamp, belt, all spares; £23/10.—28, Rye Lane, Peckham. [X556]

**RUDGE**, 3 1/2 h.p., free engine, perfect condition, used only 2 months; £35.—Ladbroke Rd. Motor Works, 21, Ladbroke Rd., London, W. Phone: 4130 Western. [X556]

**BRADBURY**, 1911, 3 1/2 h.p., Palmer and Dunlop tyres, tools, bag, and spares, climbs anything, absolutely like new; £31/10.—108a, Penwith Rd., Southfields. [X6837]

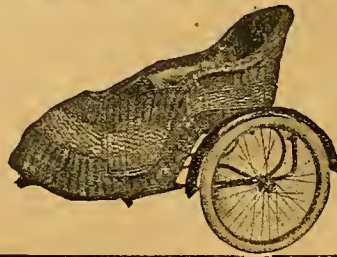
**MINERVA**, 3 h.p., 1912 B.B., good tyres, lamp, horn, spare belt, etc., beautifully tuned; seen evening between 6 and 9; £12.—W. T. Francis, 58, Upper Tulse Hill. [2450]

**T.A.C.**, 1911, 3-speed, worm drive, handle starting, just overhauled, with sidecar, tools, accessories; offers; further particulars.—Wyatt, 80, Queen's Rd., Newrich. [X6676]

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# MOTOR BICYCLES FOR SALE.

**1912** Triumphs.—We have two free engine models in stock, also one 1911 free engine model.—Pioneer Motor Co., Lower Edmonton. Phone: 1834 Tottenham. [2390]

**1912** Bradburys.—Two 2-speed models in stock.—Pioneer Motor Co., Lower Edmonton. Phone: 1834 Tottenham. [2391]

**1912** 2 1/2 h.p. Twin Humber, as new, tyres unpunctured, only ridden 300 miles; £38, complete with lamps, etc.—Deeble, 8, Angleson Rd., St. Mary Cray, Kent. [2533]

**1909** 3 1/2 h.p. Rex, B. and B. Bosch, decompressor, spring forks, low, overhauled; £15; exchange handle starter, 2 speeds; cash.—Purdue, Bromley Rd., Beckenham. [2365]

**MATCHLESS**, 1911, 6 h.p., V.S. gear, fitted with Matchless coachbuilt sidecar, splendid condition; bargain, £28/10.—C., The Woodman, Archway Rd., Highgate, N. [2524]

**4** h.p. J.A.P. Engine, Bosch mag., B.B. carburettor, new 5in. pulley; can be tried; £9/10; guaranteed perfect.—G. Humphreys, 38, Chancer Rd., Wood St., Walthamstow. [2688]

**1907** Genuine Minerva, 3 h.p., m.o.v., new B. and B. h.b.c., carburettor, also accumulator, footboards, powerful and perfect; £10 only.—514, High Rd., Leyton. [2649]

**VINDEC** Special, 3 1/2 h.p., 2-speed, and sidecar, new Michelin Trident on back wheel, 1912 Amac, Bosch mag., lamps, etc.; £22.—Chatwin and Hartley, King St., Richmond. [2547]

**PREMIER**, 1912, 3 1/2 h.p., Armstrong 3-speed gear, head lamp, horn, extra belt (Whittle), 2 tool-bags, etc., run 2,000 miles, perfect order; 45 gns.—Read, Sheerness. [2631]

**MR. GWYNNE'S** 1911 T.T. Special Triumph, very fast, and complete with max. hand speedometer and watch; bargain at £38.—Apply, Pond, 349, West End Lane, London. [X6769]

**TRIUMPH**, 1906, all bearings as new, var. pulley, very fast and powerful, guaranteed in perfect order; £16/10, bargain; stamp, reply.—Mullis, The Grange, Staplecross, Sussex. [2435]

**3 1/2** h.p. Chater-Pafnir, watertight Bosch, B. and B., 32 F.R.S. head light, new belt and tubes, Chinchers, tools and spares; bargain, £16/10.—14, Sheringham Rd., Barnsbury, N. [2682]

**3 1/2** h.p. Zedith-Gradna; £34; late 1910, excellent condition throughout, fine engine, 1912 B. and B., Quick Grip lever, horn, tools.—110, Snareshill Rd., Streatham (after 6 p.m.). [2550]

**DOUGLAS** Standard Model, new October, 1911, very little used, tools, spare inner tube, new Lyso belt, new Lucas lamp; £31/10, bargain.—Bridges, 53, Bridge Rd., Uxbridge. [2643]

**T.T. Rudge**, with Brooklands exhaust pipe, and 3-speed Singers, in stock, and ready for your summer holidays; exchanges.—Crow Bros., Motor Cyclists' Garage, 190, High St., Guildford. [2702]

**MOTOR CYCLE**, 3 1/2 h.p. Stevens, very powerful, tries nearly new, extra band, in splendid running order; first offer of £12, wrong double.—Apply, Down View, Dyke Rd. Av., Brighton. [2427]

**ANGLO-SAXON**—West End agents for the celebrated Sun 3 1/2 h.p. Precision 3-speed, the ideal sidecar machine; trial runs by appointment; £53/11 cash, exchange, or instalments.

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**ANGLO-SAXON** Motor Co.—Note our address: 100, Bolsover St., Gt. Portland St., W. Phone: 4044 Mayfair. [2708]

**BAT-J.A.P.**, 6 h.p., Show finish, only ridden 200 miles, tyres unpunctured, with lamp, horn, spares, two spare inn. Dunlop; £54, or best offer.—Burnett, 29, Herbert Rd., East Dulwich. [2608]

**BAT-J.A.P.**, practically new, 8 h.p., free engine, Cewey speedometer, large Lucas horn and lamp, Pillion seat; any trial; £62/10. Phone: 8179 Central.—Atkins, 14, Bartholomew Close, E.C. [X6636]

**MINERVA**, 3 h.p., 1912, B. and B., free engine, Whittle, Continentals, low, fast, with 6in. sidecar, thoroughly overhauled, new condition; £25 lot.—45, Bismarck Rd., Highgate Hill, N. [2447]

**DOUGLAS**, just completely overhauled, splendid condition; any examination, owner bought higher-powered machine; seen any time.—Heath, Ophir Laundry, Park Lane, Tottenham, N. [2092]

**TRIUMPH**, 3 1/2 h.p., 1909, little used, excellent order throughout, new belt, head lamp, horn, spare belt, valves, tools, etc., buying sidecar machine; £30.—18, Onseley Rd., Wandsworth Common. [2673]

**6** h.p. Twin Sarcles, nearly new, Chater-Lea frame and fittings, adjustable pulley, new B. and B. carburettor, in splendid condition; any trial; £22.—D., 8, Upper Cedars Mews, Cedars Rd., Clapham, S.W. [2411]



# THE MOTOR CYCLE

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York.  
 PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.,  
 Melbourne (Victoria). Sydney (N.S.W.). Brisbane (Queensland). Adelaide (S.A.). Perth (W.A.).  
 and Launceston (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd.; Wellington, Auckland,  
 Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 152, Bay Street, Toronto. SOUTH  
 AFRICA: Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

### Designs of the Future.

**U**NTIL this year the history of the T.T. race has led the public to imagine that there was some tangible reason for allowing multi-cylinder machines a larger cubical capacity than singles; 1912 has proved that 500 c.c. twins are as fast and as good climbers as singles of equal volume. This being so, we venture to suggest that it might be advantageous for manufacturers who have up to now devoted all their experience and energy to perfecting the single to turn their attention to the advantages to be derived from two-cylinder engines.

The single scores greatly on the question of simplicity, and also from a manufacturing point in cheapness of production, but those who have had experience of both types will agree that the best singles are not so comfortable to ride as the most perfect twins. A twin-cylinder engine provides an evenness of running that is most fascinating, and gives one the impression of being towed along as compared with the propelling effort of the single.

If the twin had had the same attention bestowed upon it as the single, it would be an even more perfect article to-day, but in the opinion of many engineers the multi-cylinder is the motor cycle engine of the future.

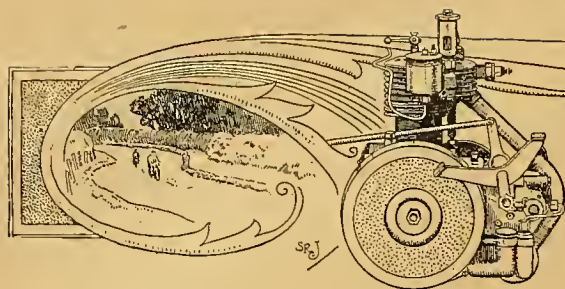
When designs for 1913 are under consideration it might also be worth while to ask whether we are not rather too prone to accept the conventional type of frame as final in motor cycle construction. Departures from recognised and successful designs require the most careful deliberation, but past events have proved that it is possible to be unconventional and at the same time successful.

### Youthful Drivers and Recklessness.

**T**HE question of the reckless driving of motor cars and motor cycles by a certain section is creating a great amount of publicity at the present time. It is hardly possible to pick up a paper which includes a column of cycling notes without observing some bitter complaint of the recklessness of some motorist. The push cyclist is perhaps the best person to judge in these matters, although his opinion of motorists is likely to be somewhat biased, as there is a growing feeling abroad that cyclists are gradually being driven off the roads by the number and speed of cars and motor cycles and by the dust they create. We do not attempt to deny the fact that there are unfortunately a lot of careless motor drivers on the roads, just as there are casual and thoughtless push cyclists who apparently do not know the common rules of the road. As we have often pointed out, the reckless driver endangers not only himself, but also those with whom he may collide.

Whilst on this subject, we may draw attention to a recent decision of the National Cyclists' Union in discussing this matter. Believing that the youthful motor cyclist is the worst offender, the N.C.U. has resolved to make an attempt to have the law amended which permits boys of fourteen years of age to ride a motor cycle. An important point also discussed by the same body is that a juvenile driver may in the case of an action for damages caused by a collision successfully plead infancy. In this connection the N.C.U. will endeavour to get legislation altered to make parents or guardians responsible for damage caused by minors when driving motor vehicles.





## CYCLECARS: THEIR ADVANTAGES AND DISADVANTAGES.

WILL THE CYCLECAR DISPLACE THE  
SIDECAR?

**U**NDoubtedly the cyclecar has arrived, and it will most assuredly stay, but what final form will it take, and will it oust the popular sidecar? These questions are not answered so easily as might be expected, for at the present moment, though cyclecars are by no means new, and puzzled designers years and years ago, the miniature four-wheeler is in the chrysalis stage, and cannot be expected to hatch into its final perfect shape until the many and various forms at present under construction have undergone long and strenuous tests. There are even now several very clever designs of cyclecars to be bought which run extremely well, and a few which have already competed successfully in long-distance events. The general run of cyclecar is, however, not anything like so satisfactory as the modern motor cycle, and there is no hiding the fact, but this is hardly to be wondered at as it is a comparatively recent development. Certain light four-wheelers known as quads existed in the very early days, but most of them were given up on account of the difficulties experienced from vibration.

### Vibration Trouble.

This trouble is, unfortunately, not yet extinct, and it is from vibration that the cyclecar designer still has most to fear. I have come into contact with several cyclecars and more cyclecar owners, and nearly all have, after the first few weeks, grumbled to a greater or less extent about their machines falling to pieces. Sometimes it has been a strained and twisted frame, but more often it has been mudguards rattling and the stays breaking, or nuts and bolts falling off and fittings coming loose, belts slipping, or rear wheels lying down on corners, etc. All this does not necessarily imply discredit to the manufacturers, for the public

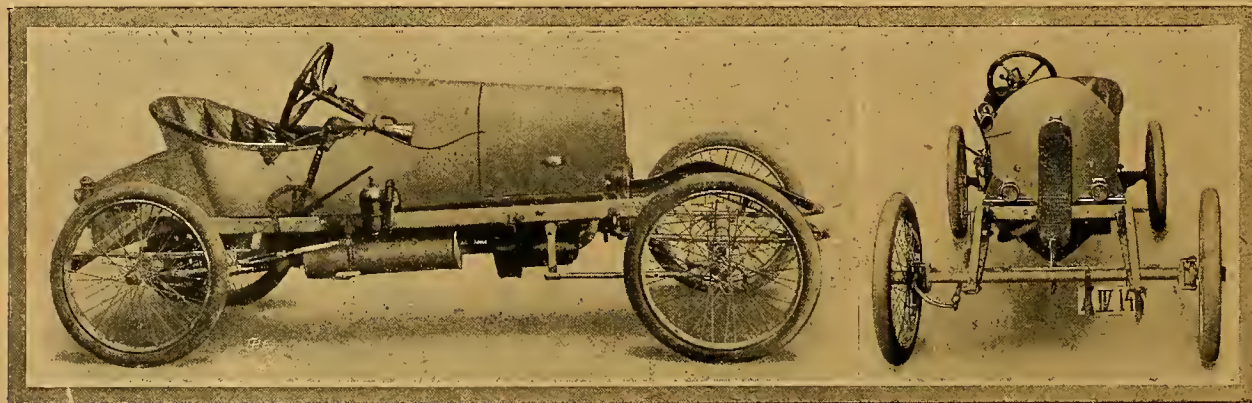
demanded cyclecars before the majority of manufacturers were ready, and it is really wonderful that good machines have been evolved in the time. The idea of a miniature motor car sounds so simple that few anticipate any more trouble than with a car.

### Light Cars.

At the present moment there is a decided reaction against the ultra light motor cycle engined, belt-driven runabout, and one or two large factories are considering, or even actually constructing, machines with four-cylinder water-cooled engines, three-speed and reverse gear boxes, and shaft drive to a live axle. Here, however, other difficulties begin to crop up. The weight becomes excessive, and the machine develops into a small car instead of a cyclecar, and the price necessarily increases, which must not be the case if the cyclecar is to become a popular means of locomotion. I believe it is quite possible to make and sell a machine on these lines at £125 if manufacturers will refrain from slavishly following car design, but great care will have to be exercised to prevent the machine becoming nasty as well as cheap.

There is no doubt that a smooth-running four-cylinder engine would increase the life of nearly all parts, especially tyres, etc., and be far more comfortable to drive, but it is a debatable question whether it would not be better to build a sound two-cylinder engine and put the money saved into first-class fittings all round. Too many people imagine that a good engine makes a good machine, but this is by no means the case, as a weak frame or badly designed transmission more than counteracts the advantage given by the best engine ever built.

So far cyclecar trials have been few and far between, and have been very badly supported by most



THE MEDINGER LIGHT RACING CAR.

This machine, which was built by M. Medinger, one of the winning Sunbeam drivers in the Grand Prix car race, might reasonably be classed as a cyclecar. The motive power is a single cylinder engine and the driving axle has no differential gear. The pointed torpedo front and extremely narrow radiator will be noted.



**Cyclecars : Their Advantages and Disadvantages.—**

manufacturers at that, consequently the public have had very little chance of deciding on the merits and demerits of the new type of machine. Now comes the manufacturers' opportunity. The Auto Cycle Union Six Days' Reliability Trials are to be held next month, and if cyclecars can prove their worth and utility in this event it will have a more lasting effect on the public than meteoric flights round Brooklands or even a good performance in a one day trial. I have been given to understand that at least one cyclecar will be entered in the A.C.U. Six Days' Trials, and its performance, together with those of other cyclecar entrants, will be closely watched by a large section of the public, who only want to be convinced that the cyclecar is reliable to place their orders at once.

**Cyclecars v. Sidecars.**

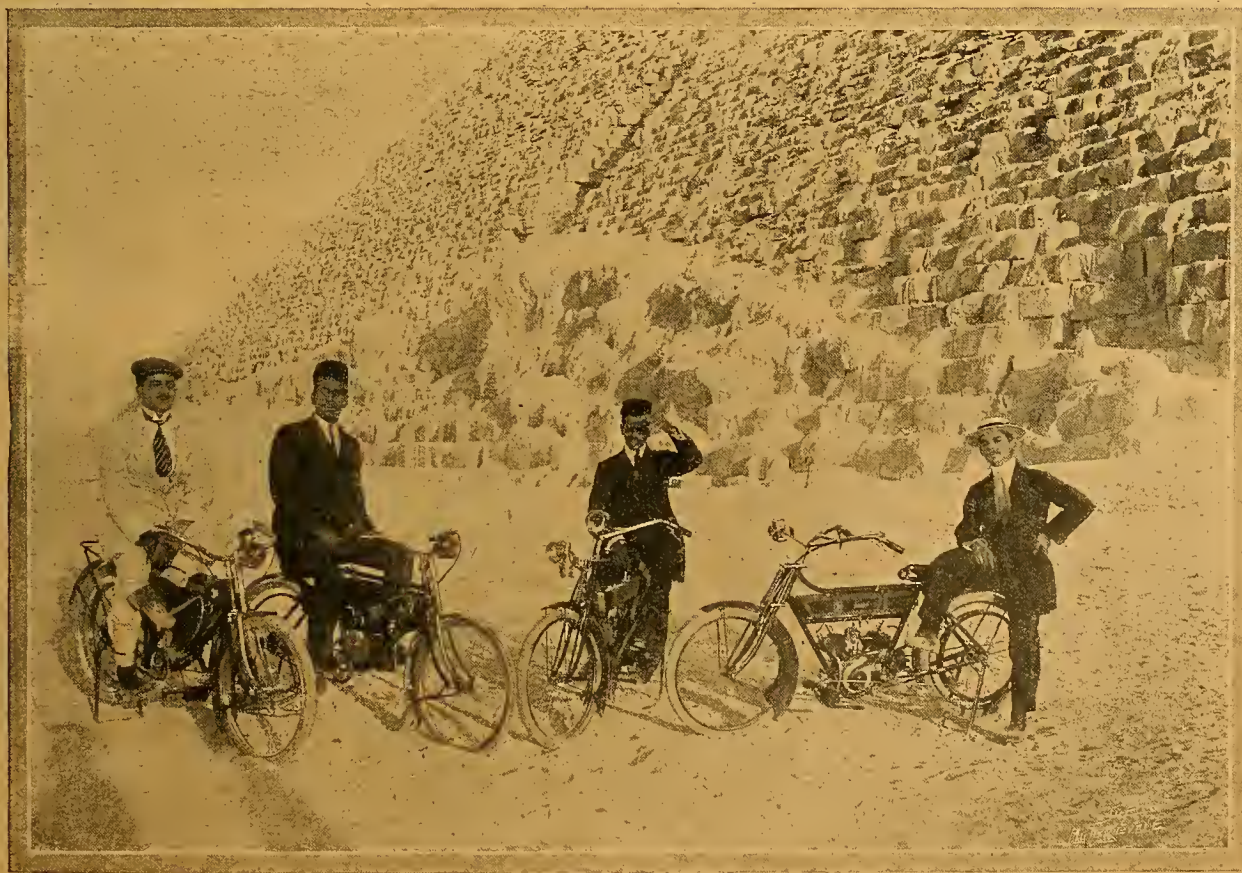
So far I have striven to point out the disadvantages under which manufacturers are working, for there is a very general opinion among the motor cycle public that the cyclecar is not yet as good as it looks on paper. As to its utility, who can doubt that in a short time cyclecars in some form or another will be common everywhere? To some degree they will replace sidecars, which, comfortable and popular though they be, are at the best a makeshift, and a particularly unmechanical makeshift as well. They will be used by country doctors and all those who

have to cover a large area in a short time and wish for more comfort and cleanliness than a motor cycle provides. They will be used by owner-drivers of large and moderate-sized cars for short trips, thus avoiding the necessary cleaning of the big machine; and they are bound to become extremely popular for light delivery work.

Now to answer the question of the final form. There are sure to be two distinct classes of cyclecars. (1) A machine which will cost not more than a motor cycle and sidecar, *i.e.*, £75 (I do not mean the most expensive motor cycle with the best possible sidecar, but a sound touring mount), for the keen motorist of limited means. This will necessarily be a little crude, but provided it is well designed and built should give every satisfaction. (2) A more luxurious article which must have at least three speeds and reverse on account of its weight, and which must also have a positive drive to the rear wheels. Probably the motor cycle engine pure and simple will be fitted to the first mentioned type, and a water-cooled engine or specially designed air-cooled engine to the second. Whether three or four wheels are to become the fashion is a subject on which we have already heard much, and are likely to hear more. The writer favours four wheels, though there is much to be said on both sides.

Finally, let us hope that the new branch of the industry is not to be handicapped by heavy taxes, for the cyclecar is essentially the vehicle for the man of limited means.

UBIQUE.



The ubiquity of the motor cycle is demonstrated in the above picture, which shows a group of Motoracche riders stranded at the Pyramids.



## OCCASIONAL COMMENTS.

By "IXION."

**Oil Carriers for Three-speed Hubs.**

I have failed to find in the accessory factors' lists any suitable container for reserve supplies of hub oil on long tours, but I have satisfactorily solved the question by purchasing one of the little leather cases designed to hold a half-pound tin of carbide. The tin is oiltight, and serves the purpose admirably.

**The Carriage of Spare Belts.**

After trying every device on the market, I have come to the conclusion that a belt case is the best way of carrying a single spare. As belt cases are subjected to considerable vibration, I fasten mine with two or three steel plates, bolts, and nuts, used by some makers for attaching toolbags to the carrier. If the pins are burred over these cannot vibrate loose.

If I am starting on a long tour, or using a sidecar—circumstances which render the carrying of one or two spare belts advisable—the leather belt goes into the case, as it requires protection from wet and dust; and I fasten the spare rubber belt to the carrier by a couple of straps.

**Belts and Pulleys.**

Fierce competition now exists in the motor cycle world, and will in time force the bulk of the demand into channels where belt-life is longest, and where the liability to belt slip is smallest.

Put into practical terms, this tendency is bound to enforce one of two alternatives upon makers. Either they will have to fit ugly belt shields, protecting their drive against slip, or they will have to fit combined belt and chain drive.

That a combined drive must prolong belt life and reduce belt slip is obvious from the following considerations. A maker desires to adopt  $4\frac{1}{2}$  to 1 as his standard roadster gear. If he drive direct from a small engine pulley to a rear belt drum, his belt will have about twelve square inches of contact surface on the front pulley; if he employ the combined drive, effecting half the reduction by chain and sprocket gear, he can use an 8in. counter-shaft pulley, on which his belt will have twenty-four square inches of contact area. *Verb. sap.*

**Other Views**

The writer of the motor cycle notes in the *R.A.C. Journal* takes the view that the Junior T.T. Race points rather to an ultimate conquest by the chain, and to the urgent need of more weather guarding. I am, however, almost convinced that the present alternative is between belt shields and combined drive. I have often used belt shields, and they can certainly be made efficient. But they are always ugly in aspect, they obstruct access to the belt and pulleys, they do not prolong the life of the belt, and they are very easily damaged. Moreover, the Junior T.T. threw no light whatever on their merits, while it afforded a convincing demonstration of the merits of the combined drive. Consequently I am sure the race will give a healthy impetus to combined drive.

The sole drawback to combined drive is an extremely minute and fractional decrease in efficiency, due to the nominal friction of a ball bearing shaft, chain, and chain wheels, and this is trivial compared to the firm grip and increased wear of the belt.

**Automatic Carburettors.**

I am "a prood man the day." For several years past I have been urging the value of automatic carburettors as a selling point with amateur customers who possess little technical skill. I have not previously seen the fruit of my labours. Many accessory firms have patented automatic and semi-automatic carburettors, but the motor cycle manufacturers have not been eager to adopt them as standard, and have continued to fit two-lever types.

At the present moment I am testing a single lever carburettor, produced by one of our most famous motor cycle factories with an eye to its 1913 models. It is early days to say whether the device will be standardised or not, but the preliminary tests point to its excellence. With the original two-lever carburettor it was difficult to start the engine by pulling up the back wheel; with the one-lever vaporiser it starts first pull, thereby showing that the mixture provided is of the correct proportions.

Either on the stand or the road the carburettor gives even and smooth acceleration, without lag or choke, from the first notch to the last, whether the throttle be banged or glided open. I have fitted an extra air intake, but cannot induce the engine to take more air at any speed than the automatic device supplies. I have closed some of the fixed air inlets in running, without obtaining any improvement in results. A revolution counter shows that the maximum efficiency is, if anything, a shade better than the original two-lever device procured, while the fuel consumption remains unaltered. The carburettor is, therefore, extremely promising.

It is useless for correspondents to write and ask who are the makers of the device, as I am pledged to secrecy for the present. I merely give this brief description of my experience in the hope that other leading manufacturers will seriously consider automatic and semi-automatic carburettors for next year's models.



The North-west London v. Oxford M.C.C. hill-climb at Arms Hill. A competitor making use of his feet to reach the top.



## Cape Peninsula M.C.C. Speed Trials

ON June 22nd the C.P.M.C.C. held a speed trial over a course approximately  $1\frac{1}{4}$  miles long on the road from Durbanville to Malmesbury. The results were as follows: T. C. L. Smith ( $2\frac{3}{4}$  Torpedo), first on formula; J. P. Faucis ( $3\frac{1}{2}$  Rudge), second on formula; N. S. Olive (7 Indian), fastest time. The road surface was in excellent condition, except for a dried-up watercourse about 200 yards from the finish. This caused rather a severe bump, so an official was posted at the spot to warn competitors. There was a good representative entry, and some fast speeds were attained.

T. C. L. Smith had to stop on his first attempt, owing to some horses wandering about the course. However, after they had been driven off, he succeeded in making very good time. Many of the best known British machines were included in the entry list.



Cape Peninsula M.C.C. Speed Trial at Harting Point. T. R. Butler (Zenith), the president of the club, is seen gathering speed in the flying start event.

The event was run off under ideal conditions, and was consequently a great success.

## Another West-country Hill Conquered.

TRISCOMBE Hill between Bagborough and Crowcombe, and about ten miles west of Taunton, has at last been successfully scaled by motor cycles. The rise commences at the old Blue Ball Inn, and runs direct up the face of the Quantocks to the well known Triscombe Stone, celebrated as a meeting place for followers of the red deer. The gradient is about 1,000 yards in length, and rises 450 feet in this distance, with a gradient in places steeper than 1 in 6. The difficulty in ascending is to keep down to a low enough speed and dodge the boulders. On Tuesday last week W. Pratt, R. M. Marians, and W. Drake, accom-

panied by W. G. Potter, H. E. Potter, and Goldsworthy Crump, of the Taunton and District M.C.C., inspected the hill, and then Pratt mounted and made a perfectly clean ascent. He was immediately followed by R. M. Marians, who did likewise. W. Drake came up fast and well considering the surface. Later, he made a second climb at reduced speed with equal success. W. G. Potter also made an excellent ascent. As if this were not enough, Pratt came down to the steepest and loosest place, started up, and got away on the clutch in splendid style. The four machines used were 1912 standard P. and M's. T.G.C.



1. W. Pratt (3½ h.p. P. and M.), who made the first ascent.
2. The four P. and M. riders at Triscombe Stone.
3. W. Drake making an ascent. The rough state of the road will be noticed.



# MILITARY MOTOR CYCLING NOTES

BY "CELESTIER"



## Autumn Army Manœuvres.

**T**HIS year the Autumn Manœuvres are to be on a larger scale than ever, for in addition to the fifty thousand regular troops taking part, there will be some seven thousand Territorials, half of whom will be cyclists. In order to provide the necessary staff of generals' orderlies and umpires' messengers no fewer than sixty civilian motor cyclists will be required. Of these twenty are to be found by the A.C.U., and the remaining forty will be selected from members of the Legion of Motor Cyclists.

The period for which the services of the majority of these will be required is from September 14th to the 21st, and each motor cyclist will receive six and sixpence per day petrol allowance in addition to his board and lodgings.

Already many applications have been sent in by motor cyclists anxious to enjoy this novel way of spending a holiday, but there are still several vacancies for suitable men, preferably those who have attended previous manœuvres or who have had some military training. Preference will, of course, be given to men who are already members of the Legion of Motor Cyclists. Those who have not yet registered themselves as members should do so at once, and send in their application to the Hon. Secretary of the Legion, 128, Jermyn Street, London, W., together with a stamped addressed envelope, 1s. 4d. for the Legion badge, and a penny stamp.

In due course full details will be posted to the selected candidates, and next week I hope to be able to give an advance copy of these.

## What Army Manœuvres Mean.

For the benefit of those who have not hitherto been lucky enough to enjoy the experience of going out on army manœuvres, I will sketch a brief outline of what their duties will be. They will be asked to rendezvous at some hotel in East Anglia on the appointed day, and there to report to the general to whose service they have been told off. That night there will be no work required of them, and until the following afternoon they will probably be free.

Then at a moment's notice a motor cyclist messenger will be called up by a staff officer and handed a despatch to deliver to a general commanding perhaps twenty miles away, and the motor cyclist must, of course, move as fast as his engine will take him.

For this one glorious week he need have no thought for police traps nor speed limits—the faster he goes the better everybody will be pleased.

When the message is delivered the rider is either instructed to return with a reply or allowed to make the best arrangements he can for the night. Sometimes this will mean shaking down with the nearest body of troops, but usually the motor cyclist will be told to look for dinner and a bed for himself and to charge the account to the authorities.

So on, day after day, the motor cyclist's time will be occupied in alternating hours of complete idleness, watching long columns of troops defile past him, and in occasional exhilarating bursts of speed, dashing off on some errand of importance.

## A Few Hints.

It must be remembered that quite half of the despatch riding is done after sunset, and therefore an efficient lamp is very essential.

It is advisable to provide oneself with a loud whistle (the "Thunderer," to be had at any ironmonger's, is recommended), for troops on the march pay not the least attention to the hooting of a motor horn or siren, be it ever so loud, but discipline teaches every man to look round when he hears a whistle—it is, in fact, the only way of clearing a path for oneself along a road congested with troops.

Another point worthy of attention in passing infantry is to try to make as little dust as possible. These poor fellows have a pretty rough time of it on manœuvres after marching their thirty odd miles a day, and they have to swallow an appalling amount of dust raised by their own feet without taking into account motor dust. A little consideration in this matter will win the motorist deep, though perhaps unvoiced, thanks, whilst consistent neglect of this will tend to unpopularity—to use a mild term.

There is one part of an army on the move against which motor cyclists should be warned—it is the cable and air line telegraph companies of the Royal Engineers when engaged in paying out or picking up a line. Their movements cannot be depended upon, they do not keep to the left of the road, and they are liable to stop dead or turn round at any given moment.



Three lightweight riders who survived the Coventry and Warwickshire M.C. severe one day trial of 182 miles. The riders are G. Smith (2½ h.p. Humber), Sam Wright (2½ h.p. Humber), and Alec Walsgrove (2½ h.p. Hazlewood). On the right is Ambrose Elson, the trials hon. sec.





"MY most exciting ride took place at Pontypridd in 1903," said Bert Yates, who has been riding Humber machines since the very earliest days of motor cycle racing. "The race was a five miles handicap, and I remember that I had to give the limit man  $3\frac{1}{2}$  minutes start. The track was well banked for those days, but not sufficiently so for the speed we reached that day. The top of the banking was guarded by board fencing, supported at intervals by stout posts. I had all my work cut out to pick up my handicap, and soon found myself at the top of the banking. Next I was touching the boards, and finally I actually found myself riding on the fence itself, as the speed was so high that it was impossible to keep on the track."

#### A Lucky Win.

"Well, I won the race, but only because my opponent's belt came off in the last lap. Even then he would



probably have won if he had not pulled up to put it on again, as he had a good lead and the impetus would have carried him over the line.

"I was riding a  $2\frac{3}{4}$  h.p. chain-driven Humber, and just before the race noticed that the rear tyre cover was worn through, but managed a temporary repair by binding the worst place with a silk handkerchief."

#### Speed in the Early Days.

Not many riders can have had a much more exciting ride than this, but Bert Yates told us several more anecdotes of races of almost as exciting a nature.

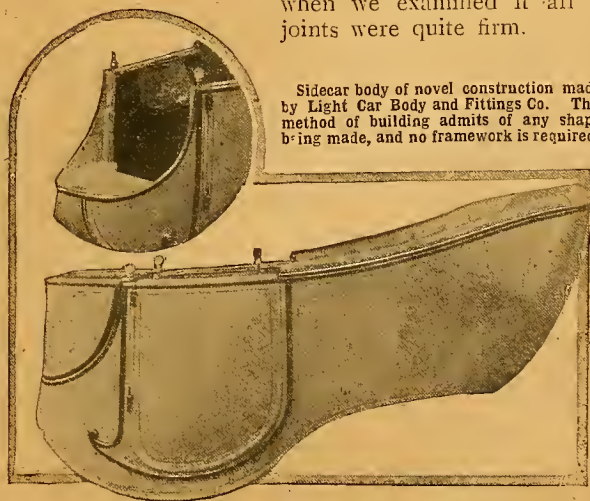
The speed accomplished in those early days by Bert Yates and certain other expert riders on the old  $2\frac{3}{4}$  h.p. chain-driven Humbers was little short of marvellous, and in some cases they put up records which would be hard to beat, owing to the fact that the tracks could not stand a higher speed.

### A NEW SIDECAR BODY.

A novel method of constructing bodies for sidecars and cyclecars was brought to our notice recently by Mr. H. S. Harvey, of the Light Car Body and Fittings Co., Coventry. Any shape can be made, and when the body is finished it has the appearance of having been shaped from a solid piece, as there are no visible constructional details or joints. The method of building is the invention of Mr. Harvey, and it results in a very strong body, at the same time it is lighter than the usual coach-built type, and the appearance is very good. The only framework used is that for fixing the door, and a light strip along the top where the upholstery is attached. The model which we illustrate has a detachable front and a seat for a child. The door fastener is strong, simple, and conveniently placed.

A sidecar body constructed in this way has much the same appearance as if it were made of shaped metal, to make which special and costly appliances are required; and unless a very large number of bodies were made of precisely the same shape, these appliances would make the cost prohibitive. Another advantage which a wooden body has over metal is the absence of clanging and rattle.

Mr. Harvey showed us a small model which was made some time ago and had been subjected to any amount of knocking about, but it had withstood the rough treatment perfectly, and when we examined it all its joints were quite firm.



Sidecar body of novel construction made by Light Car Body and Fittings Co. This method of building admits of any shape being made, and no framework is required.





### A Practical Suit of Overalls.

F. C. Noar and Co., 19, Watling Street, Shudehill, Manchester, have lately introduced a thoroughly practicable and quite nice looking suit of motor cycle overalls. It is made of good wearing material, and amongst the chief points may be mentioned the double protection for the shoulders, double-breasted front, and bishop's sleeves, which form a most excellent type of wind cuff. Loops are provided on the sides for a belt to prevent the coat from bellying out in a wind. The material is, we understand, absolutely stormproof. The leg portion of the suit has been carefully designed, and the portions which wear out so quickly—the straps underneath the foot—are made of double thickness. The fastenings are spring buttons.



The "Deluge" overall suit.

### Light Sidecar Jack.

A neat and very light sidecar jack is being marketed by Brown Bros., Ltd., 15, Newman St., Oxford St., W., which takes the form of a fork mounted on a telescopic tube. The fork may be raised to the necessary height, where it is locked by a simple jamming action, and may be released by pressing a spring-controlled trigger. When the stand has been set to the correct height, the sidecar axle may be lifted on to it or rolled into position. The substantial square base is turned down at the corners so as to grip the road surface and prevent rolling. This jack is absolutely firm when set in position, light in weight, and convenient in size.



Brown Bros. telescopic sidecar jack.

### A New Terminal.

The Rotax Motor Accessories Company, 43-45, Great Eastern Street, E.C., have introduced a new and simple terminal for electric cables. It is stamped in two halves, round one of which the stranded high tension wire is looped. The other half is then bent over and clipped down with the aid of pliers, making a safe and satisfactory job.

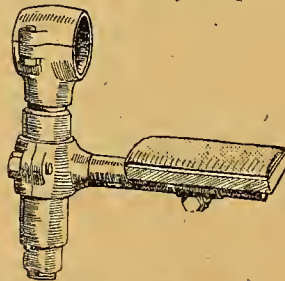
### A Handy Patch Press.

The Chemico patch press is a handy little contrivance which, when placed over a tyre patch, grips both patch and tube and dispenses with the necessity for holding the patch down with thumb and finger until the solution is dry. With the Chemico patch press an even pressure is distributed over the whole surface of the patch and tube, which pressure can be regulated to a nicety, and the appliance can then be clamped to ensure perfect adhesion.

In the case of one or more punctures requiring to be repaired, a patch can be placed in position and fixed with this press and a fresh repair can be prepared at the same time, as the hands are free for other work.

### Simple Spring Footrest.

A very simple and neat form of spring footrest has been invented by Mr. S. J. Heany, and will shortly be put on the



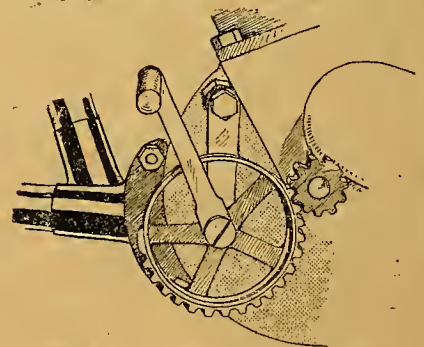
Heany's spring footrest.

market. It consists of a tubular hanger which may be fixed to the usual footrest bar at any angle. On the outside of this hanger, slides a case carrying a leather-covered footrest on a tubular extension.

The hanger is slotted, and a bolt passes through the sliding member from side to side, thus serving the double purpose of keeping the footrest in the correct position, and of forming a take off for two springs enclosed in the hanger. The lower spring takes the weight of the rider's foot and the upper acts as a recoil spring. Both are easily accessible. Spring footrests should have a good sale as many riders complain of hot feet, the result of vibration.

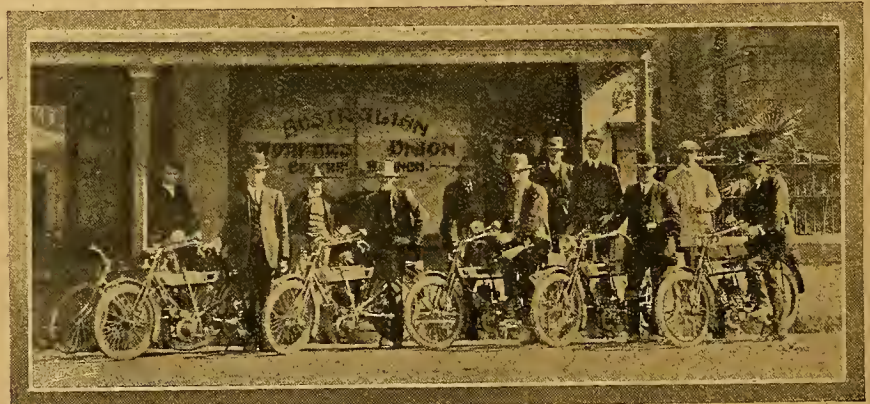
### New Kick Starter.

Wait and Co., Ltd., of Belgrave Gate, Leicester, are marketing a kick starter which can be adapted to almost any make of machine. A small pinion mounted on a free-wheel is fixed to an extension of the crankshaft on the timing gear side, and meshing with it



Wait & Co.'s "Clyde" kick-starting device.

is a large sector which can be rotated by a sharp kick on the pedal attached to it. Arrangements are being made to fit a free-engine clutch in conjunction with the device so that even out-of-date machines may be converted.



Five organisers of the Australian Workers' Union who travel throughout Australia on their L.M.C. motor cycles. These riders visit remote parts of the Commonwealth carrying their "swag" (about 150 lbs.) with them.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

### Bevel Gear Transmission.

Sir,—One of the arguments urged against the positive bevel drive, as exemplified on the four-cylinder F.N., is the danger in case of a seizure in the engine. I have experienced such a seizure (due to some screws of a big end coming adrift) when travelling at a speed of 35 m.p.h. by Cowey indicator. The back wheel skidded for 25 yards before the machine came to rest. The tyre was a 26 x 2½ Kempshall. The shock did not throw me over the handle-bars, the steering being somewhat affected, and was similar to travelling through sand.

My brother had a similar experience when travelling at 20 m.p.h., and he also experienced no difficulty in staying on the road, and kept his seat in the saddle. In both cases we were able to complete our journey (100 miles in one case and 40 in the other) by taking out the piston and connecting rod of the refractory cylinder. The roads had good firm surfaces.

It speaks very highly for the strength of the teeth on the bevel wheels that they can withstand shocks of this description. The bevel drive only requires very occasional attention, whereas belts when used in sandy districts require anything but occasional attention.

A. VALLMED.

### Bowden Wire Lubricator.

Sir,—I enclose sketch showing a little device for lubricating the flexible wires used for controlling brakes, throttles, etc. Being in the motor trade, I have noticed that a large number of flexible wires break owing to rust and unnecessary friction in the outer casings of these wires.

Of course the device would be placed at the highest point of the wire so that the oil would work down the wire.

It is easy to fit, as it is only necessary to cut a piece out of outer casing to allow room for the lubricator and slide lubricator on and replace the rest of casing.

ALFRED J. KETTLE.



### The Race for the Albert Brown Trophy.

Sir,—May I call your attention to an inaccuracy in the account given in your paper of the race for the Albert Brown trophy (July 11th, 1912, page 789), where it is stated that "C. Gordon Watson's F.N. looked like a winner, but something went wrong in the first lap, which put him out of the race." It was at the end of the seventh lap that something went wrong. I had, at that time, maintained my initial lead on the scratch cars and had passed the cars which started in front of me.

C. GORDON WATSON.

### Automatic Carburetters.

Sir,—I have been very much interested in the letters and articles on the above subject which have lately appeared in your columns, but I have been disappointed to find no reference to the behaviour of automatic carburetters when used on twin engines (especially lightweight twins). I understand that the problem of carburation is much simpler on a single, and that, while it is now well-known that the Binks, C.A.P., Lukin, Stewart-Precision, and others (to place them in alphabetical order) give excellent results on the standard 3½ h.p. 500 c.c. machine, it is not so certain that they would be equally satisfactory on a twin engine of 350 c.c.; at all events information on this subject is somewhat lacking.

The fact that the C.A.P. was fitted to the Forward, which was third in the Junior T.T., hardly applies to the case, for

the circumstances of this ride are very different from ordinary riding conditions. Personally, I consider the following points desirable: (1.) Slow steady running without missing both on the level and on hills. (2.) Quick pick-up without knock or jerk after slowing down for traffic. (3.) Good hill-climbing power and fair pace when required. (4.) Satisfactory petrol consumption and a cool engine. I shall be glad to hear if any of the carburetters mentioned can be relied on to give these desiderata.

SOCRATES.

Sir,—As an interested watcher of the tardy improvement of our motor cycle carburetters, may I add a few words of criticism on the letters that have appeared.

I think that every rider of a single-gear motor will agree that the extremes of engine speed of the cycle are far greater in every ride that one takes than they are once in a blue moon in a car engine. That the car engine with its four cylinders can turn round at a crawl no one doubts, but it does not do so as a rule in actual driving, and has not to do so per force. For speed, in goes the top gear; for starting and for hills, the engine speed is pretty constant on the lower gears.

I have read the correspondence on the subject of multiple jet carburetters, and am now quite convinced that at starting, and perhaps when the second jet has just come into action, the correct mixture may have been obtained, and that at every other position of the throttle the mixture must be much too rich.

Let us have some consumption tests of automatic carburetters quoted by the satisfied users. 100 miles per gallon for a 3½ h.p. is none too good, the average should be well over that to be an improvement on older types.

The use of the word "suction" is, I think, confusing, and there is no need to confuse the average motor cyclist, if one may judge of his knowledge by the letters that are published.

I should like to know why we should have the complication of inlet valves with variable lifts, when the throttle can, and does, exactly the same.

The rush of air into the cylinder is dependent on three things only: The vacuum in the cylinder, the atmospheric pressure, and the opening of the throttle. The petrol taken in depends on the rush of air past the jet (and, of course, size of jet, petrol level, and size of the choke tube), but these are secondary. It is the rush of air caused by the pressure of the atmosphere that carries up the petrol, and the opening of the extra air lets in air that does not carry up petrol and reduces the strength of the mixture, and also reduces the rush of air past the jet, thus reducing the strength in two ways; and it is this double reduction of the strength of the mixture that makes it necessary to close the extra air when speed is reduced. A simple experiment made me quite sure that nearly all carburetters are wrongly made to obtain what is wanted, viz., a spray. With a few bits of glass tubing and a cork and a glass of water one can see that a solid column of water is taken up by blowing past a jet of the ordinary form, and that by blowing water with two tubes at an acute angle, like a scent spray, the finest spray is obtained. I am quite sure that in future we shall either have some gas-making plant, that is not thought of now, or we shall have the petrol atomised by currents of air across the jet, in addition to some air from below as at present. I have greatly improved the running of my Triumph by soldering up the extra air holes and making one large hole in their place, which has a pipe soldered on parallel with the inlet to the cylinder, the pipe having a dust excluding gauze at the end. Warm air is taken in with less dust and the blow-back petrol is trapped.

ACORN.



### Oily Engines.

Sir,—I have been an interested reader of your paper for several years and also an enthusiastic motor cyclist.

I have just bought my 1912 mount with a popular make of engine, and I cannot let this opportunity go without complaining bitterly about the "oil slinging" propensities of this particular make, and, I believe, others. They are acknowledged by the makers to be, as they termed it, "oily engines." They have had it back, but it is still no better. This is a state of things which ought to be altered, as it is impossible to ride the machine without overalls. Felt washers have been put on the mainshaft behind the pulley, but the flow of oil never ceased. I should like to hear other riders' experiences on this subject, as it strikes me as being a very important point.

"Ixon" in his notes remarked about manufacturers fitting covers over the enclosed waterproof magnetos, and held the manufacturers up to ridicule for doing so. I had occasion to be riding when it was raining very heavily, and my machine started misfiring and stopped, and when I took it to the nearest garage, we found that there was water on the magneto. I thought that this might have been a misadventure, but two of my friends have also had the same trouble with their 1912 instruments, so it seems that covers are still necessary. I might say that the washers between the end covers and magnets were intact when they were taken off.

GROWLER.

### "The Motor Cycle" Formula in South Africa.

Sir,—Enclosed you will find a cutting from a local sporting paper, which, I think, will prove a source of amusement to you, in particular the interpretation by the writer-expert (?) of *The Motor Cycle* hill-climbing formula.

I would like to suggest that next time you publish a formula, instead of using letters only, you print the words in full, so that there can be no danger of our experts interpreting

D to mean distance.

S to mean sideslip.

T to mean tractive resistance.

W to mean wheelbase.

You will see that three versions of your formula are given in the same issue of the paper in question.

$$1. \quad \frac{D^2 \times T^2 \times S}{W}$$

D = distance.

S = speed.

T = cubic capacity.

W = total weight.

$$2. \quad \frac{D^2 \times T \times C \cdot C^2}{W}$$

D = distance.

T = time of ascent.

C.C = cubic capacity.

W = total weight.

And 3, the correct formula:

$$\frac{D^2 \times S \times T^2}{W}$$

D = diameter of cylinder.

S = stroke.

T = time.

W = total weight.

This last was given by a dissatisfied sidecar competitor, who looked up the back numbers of *The Motor Cycle*.

Johannesburg.

THERMOS FLASK.

### Two-stroke Engines.

Sir,—I have read, with interest, your remarks on two-stroke engines, and, having studied and experimented with them, I think the time is ripe for good two-cycle engines. You state that the system enables very light reciprocating parts to be used, but in this I think you are not quite correct, though I admit it is in no way detrimental to the two-cycle engine. If you consider a two-cycle engine, and that it should, for any reason, misfire, the next explosion is of an exceptionally full charge and the pressure is very considerable indeed—in fact, it may considerably exceed that of four-cycle engines. Petrol engines, though so common, are by no means well understood, and the two-cycle engine, being more simple, will probably be found more reliable in the users' hands. So many four-cycle engines are

B4

ruined by "grinding in the valves" and mounting up the internal flywheels out of alignment—even  $\frac{1}{1000}$ th of an inch is serious in this case.

It is in the best interests of the popular motor press, I think, to decrease the cost of motoring and motor cycling, and it will be found that two-cycle engines are not only more reliable, but are cheaper to produce power for power. It is power not piston displacement, much less "bore," which is wanted, the power to turn the wheel round.

A. E. PARNACOTT.

### Combined Chain and Belt Transmission.

Sir,—With regard to "Ixon's" remarks in issue of 11th inst. regarding combined chain and belt transmission, I am afraid I must contradict him.

I do not see how Messrs. Douglas can be credited with "the solution of the transmission problem," as I have a twin sidecar machine, built by W. W. Fenn, now running in its fifth season, which has a Fafnir counter-shaft, two-speed gear and free engine driven by chain from engine and geared 2 to 1, and then by belt from a 9in. pulley to back wheel; I agree that the large pulley does away with belt trouble.

The Fafnir gear is absolutely foolproof and ran without a single adjustment for four years, and was only taken down this year for two new brakes.

SATISFIED.

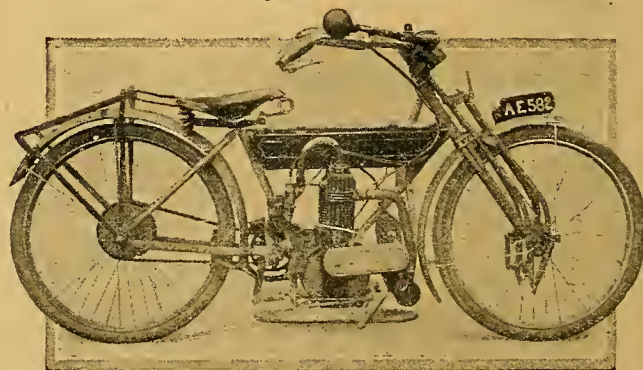
### A Roadside Repair.

Sir,—I thought the following might interest some of your readers as a tip for a roadside repair. After finishing an eight days' tour round North Wales, I had arrived within seven miles from home, when the petrol tap on my friend's Clyno began to leak, and in tightening it up I turned it clean out of the tank, causing a dangerous stream of petrol to pour out over the hot engine. I used my finger as a plug, after which I procured a good cork, tapered it down, pushed a hole through the middle, got a clay pipe, broke off the stem, and inserted it in the cork. Then I cut off three inches of the gas lamp tubing, and slipped it on the pipe stem and over the feed pipe.

R. RYMAN.

### Modernising an Old Pattern Mount.

Sir,—I am sending you a photograph of a 1906 chain-driven Humber which I have just modernised. As an amateur, at such an undertaking, I am very pleased with the results. I have, of course, added new magneto and carburetter. The magneto is a Simms, and the carburetter



The 2½ h.p. modernised Humber motor cycle referred to.

a B. and B.; being able to vary the jet ensures one getting in all weathers the very best results from the engine. I meet with no hills that I cannot climb; I do not get badly left by any of the modern 3½ h.p. motor cycles, consumption is about 100 m.p.g., and I hope to do better. The idea of such extensive alteration would not have suggested itself, but for the fact that the engine is still, after years of constant running, in perfect order and good for another six years.

C. W. WILLIAMS.



## OPEN HILL CLIMB AT CAERPHILLY.



A. B. Wade (6 h.p. Zenith and sidecar) rounding the top bend in the hill-climb at Caerphilly, in true racing style.

**I**DEAL weather favoured the hill-climbing tests organised jointly by the South Wales Automobile Club and the Cardiff Motor Club, and held on Thursday, the 18th inst.

Few better spots in Wales could have been found than the mountain road leading from Caerphilly to Cardiff. The course was over a route of 3,582 feet, the total rise being 387 feet, the average gradient 1 in 9.2, and the steepest part 1 in 6.2. Mr. A. V. Ebbelwhite, of the Royal Automobile Club, filled the capacity of starter.

There were some rather dangerous bends in the road, but these were negotiated with great skill, and the proceedings were unmarred by any serious mishaps, despite the fact that very much faster times were recorded than in last year's events.

The start was made soon after eleven o'clock, the first event being for touring machines, with cylinder capacity not exceeding 350 c.c.

J. F. Crundall (Humber) went off in fine style, the healthy bark of his 2½ h.p. engine attracting no little comment from the spectators. F. W. Barnes (Zenith) won this event on formula, taking 1m. 58½s. H. C. Newman (Ivy-Precision) found second place in 1m. 26s.

In the second class for Tourist Trophy machines, H. Britton (Douglas) finished first in 1m. 20½s. In the single-cylinder racing machine section, G. Clarke (Rudge) suffered bad luck in sustaining a dry skid, and falling off his machine when almost at the top of the hill.

The event looked forward to with most interest was the open contest for all comers, with unlimited capacity. This class was full of surprises. R. M. Lewis (¾ Premier) finished first in the exceedingly short time of 1m. 11½s., beating Barnes by ½s. This was a particularly wonderful performance, as Lewis, who is practically a novice, was riding a stock machine, only received from the works two days before the tests.

Barnes would have undoubtedly won the sidecar class had he not suffered ill luck at the last bend, bursting a tyre, but riding to the top of the hill on the rim, he gained third place.

The twin-cylinder, capacity not exceeding 1,000 c.c. competition, for members only, was won by W. Phillips (5 Kerry-Abingdon), who accomplished the climb in 1m. 24½s. A peculiarity of this event was that the two Kerry-Abingdons entered completed the course in precisely the same time, gaining first and second places on formula.

CLASS I.—Touring cycles not exceeding 350 c.c. (open).  
Determined on formula.

	Time.
1. F. W. Barnes (2½ Zenith) ...	1m. 58½s.
2. H. C. Newman (2½ Ivy) ...	1m. 26s.
3. J. J. Mathias (2½ Humber) ...	1m. 26½s.

CLASS II.—T.T. machines not exceeding 350 c.c. (open).  
Determined on time.

1. J. Parsons (2¾ Douglas) ...	1m. 20½s.
2. F. W. Barnes (2½ Zenith) ...	1m. 27½s.
3. H. C. Newman (2½ Ivy) ...	1m. 29½s.

CLASS III.—Touring standard cycles not exceeding 600 c.c. (open).  
Determined on formula.

1. V. Taylor (¾ Rudge) ...	1m. 13½s.
2. C. T. Newsome (¾ Rover) ...	1m. 11s.
3. W. D. South (¾ Rudge) ...	1m. 15½s.

CLASS IV.—Racing single-cylinder machines not exceeding 500 c.c. (open).  
Determined on time.

1. C. T. Newsome (¾ Rover) ...	1m. 11s.
2. H. Wessendorf (¾ Premier) ...	1m. 12½s.
3. W. G. McMinnies (¾ Triumph) ...	1m. 14½s.

CLASS V.—Racing twin-cylinder machines not exceeding 500 c.c. (open).  
Determined on time.

1. H. Britton (3 Pioneer) ...	1m. 15½s.
2. J. J. Mathias (2¾ Humber) ...	1m. 28½s.
3. C. R. M. Peatty (2¾ Douglas) ...	1m. 33½s.

CLASS VI.—Touring twin-cylinder machines not exceeding 480 c.c. (open).  
Determined on formula.

1. A. V. Shirley (7 Indian) ...	1m. 15½s.
2. E. Chapman (6 Zenith) ...	1m. 26s.

CLASS VII.—Unlimited capacity (open).  
On time.

1. R. M. Lewis (¾ Premier) ...	1m. 11½s.
2. F. W. Barnes (8 Zenith) ...	1m. 12s.
3. W. G. McMinnies (¾ Triumph) ...	1m. 12½s.

CLASS VIII.—With sidecar and adult passenger (open).  
Capacity unlimited. Determined on formula.

1. — Burrelli (6 Zenith) ...	1m. 23½s.
2. E. Chapman (5-6 Zenith) ...	1m. 31½s.
3. F. W. Barnes (8 Zenith) ...	1m. 24½s.

CLASS IX.—Standard touring machines not exceeding 560 c.c. (Members' class.)  
Determined on formula.

1. J. J. Mathias (2¾ Humber) ...	1m. 41½s.
2. R. W. Jones (¾ Rudge) ...	1m. 34½s.
3. C. Hinton (¾ Scott) ...	1m. 24½s.

CLASS X.—T.T. machines (members only) not exceeding 500 c.c. Determined on time.

1. H. Wessendorff (¾ Premier) ...	1m. 15½s.
2. J. C. Moore (¾ Rudge) ...	1m. 15½s.
3. F. J. Tanner (¾ Triumph) ...	1m. 16½s.

CLASS XI.—Two-cylinder machines not exceeding 1,000 c.c. (Members only).  
Determined on formula.

1. W. Phillips (5 Kerry-Abingdon) ...	1m. 24½s.
2. T. C. Owen (5 Kerry-Abingdon) ...	1m. 24½s.
3. E. Chapman (5-6 Zenith) ...	1m. 20½s.



Group of competitors in the Lincolnshire M.C.C. Speed Trials at Thonock Park. Sir Hickman Bacon is standing in the centre.



# Climbing Snowdon by Motor Cycle.



INCIDENTS OF THE REMARKABLE ASCENT OF SNOWDON ON A MOTOR CYCLE.

- (1) A comparatively easy section.
- (2) L. W. Spencer and his Rover with some of the witnesses.
- (3) Passing through a gap in the wall near the summit.
- (4) The fast few yards.
- (5) Just before reaching the fourth gate.
- (6) Nearing the summit. Notice the precipice on the left; the hotel at the summit is seen in the background.
- (7) Lifting the machine over a rocky barrier.

THE ascent of Snowdon has been accomplished successfully, as mentioned in our last issue, by L. W. Spencer, of Uxbridge, in spite of the many and great difficulties encountered. The start was made from Llanberis at 8 a.m. on the 13th inst. At first the surface of the road was good, and although very steep, it was surmounted without difficulty. However, after passing through three gates, Spencer and his friend Gilbert Brooking found that the road had practically disappeared, and they found themselves on a steep path of fair width covered with stones. Soon the path became worse, but Spencer mounted it steadily, and after a couple of bad turns stopped to wait for his friend who had gone back for a second attempt. When he presently arrived they started on the clutch, and gradually worked their way upwards over a loose rock-strewn track, covered here and there with sodden grass and pools of water. The driving wheels were unable to obtain a proper grip, but progress was made slowly. Then came a mass of rocks over which the machines had to be lifted. The track was now actually a river bed, the water being in places as much as six inches deep, and patches of wet clay added to the difficulties of the riders; in addition, the belts began to slip.

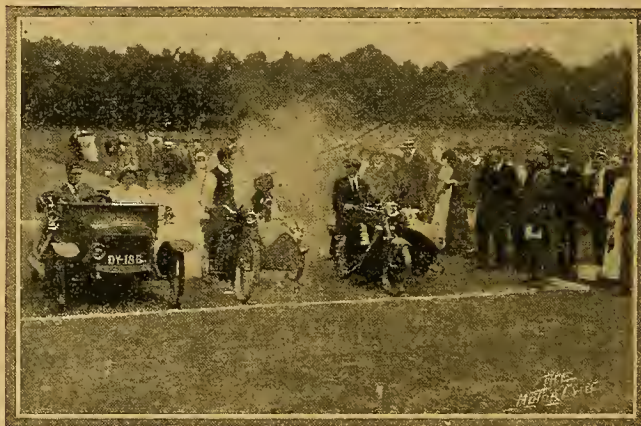
After the half-way house was passed the going was better for about a mile. Here a stop was made for lunch, and gears were lowered as far as possible, giving a 13 to 1 ratio on the lowest speed. The engine now had power in reserve, but the clutch began to slip, and it was a case of pushing behind by Brooking and Wade (the photographer) until a rocky barrier was reached where the machine had again to be carried.

The track now passed under a railway bridge, and for a few yards had a 2,000 feet precipice on one side with the railway rising abruptly on the other.

A little later the machine was dragged on to the railway

track, and though the gradient was still very steep, the machine made light work of the ascent, as the surface was better, and the summit was reached at 3 p.m. Owing to lack of time Brooking regretfully decided to abandon the attempt to get his machine up as well.

Spencer's machine was a new drop frame  $3\frac{1}{2}$  h.p. Rover, fitted with a Sturmey-Archer three-speed gear, Pedley  $2\frac{1}{2}$  in. tyres, a Pedley belt, and extra heavy spokes. Brooking rode a standard  $3\frac{1}{2}$  h.p. Rover with Armstrong gear.



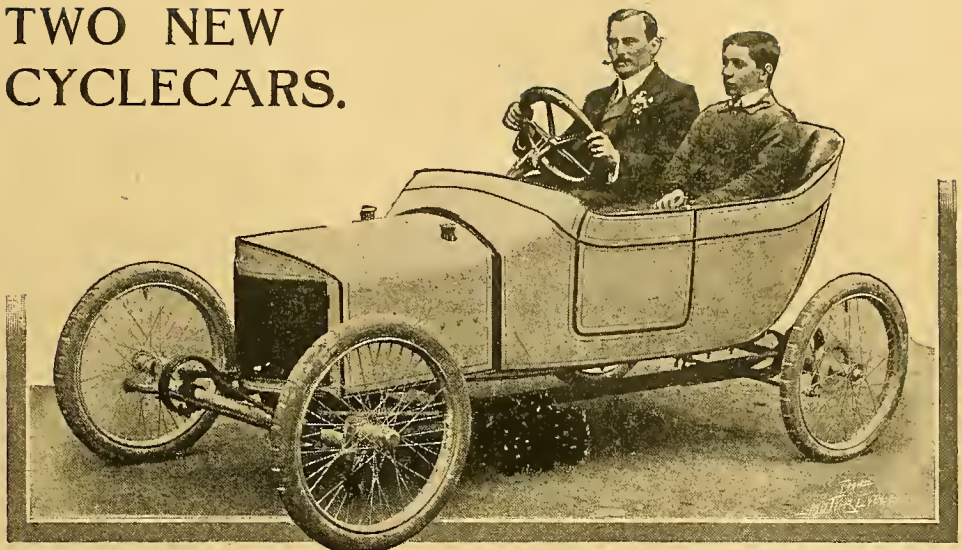
Essex M.C. and Walthamstow M.C. Gymkhana. The start of the Car and Sidecar Flower Race. The machines are a G.W.K., Indian, and Scott



### The Wall Four Wheeler.

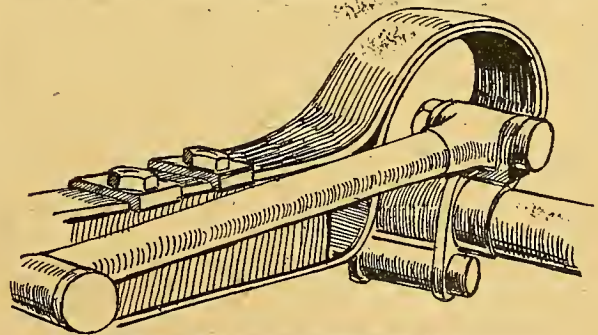
## TWO NEW CYCLECARS.

**L**AST week we had the opportunity of examining a neat four-wheeled cyclecar, which will be built and marketed by Wall Cars, Ltd., of Tyseley, Birmingham. The new company is being formed so that the manufacture of this cyclecar may not interfere with the work in hand at the present factory of A. W. Wall, Ltd. Two models are being built, a 6 h.p. twin and a  $4\frac{1}{2}$  h.p. single, both fitted with Precision engines. The twin has a two-speed and reverse gear box, the changes being made by means of pedals. From the gear box, the drive is transmitted to a live rear axle through a universal joint and a propeller-shaft which is enclosed in a stout torque tube. The chassis is particularly simple, and consists of straight-channel members suspended from the axles by curved leaf springs. Radius rods prevent the front axles from moving out of line. Steering is direct, and operated by a large wheel. A band brake is fitted to each rear wheel, and the foot brake acts on the gear drums. The body is suspended from the chassis on long leaf springs extending the full length of the coachwork, and is of comfortable proportions. Everything is made weather-proof and accessible, and engine adjustments can be made by merely swinging back the hinged dummy radiator. A novel feature is the method employed for starting. At present we are limited to saying that the device fitted enables the engine to be started from the driver's seat with the minimum of effort. The magneto is gear driven and placed in front of the engine, and an Amac carburettor supplies the gas.  $26 \times 2\frac{1}{2}$  in. tyres are fitted throughout. The gear ratio is 5 to 1 on top, with a 50% reduction for both low speed and reverse. The gear box is a particularly neat piece of work, following the well-known Roc epicyclic design, and is geared down from the engine, the whole gearing being enclosed in an aluminium box. Substantial mudguards combined with a running board, though not shown in the illustrations, add considerably to the pleasing appearance of the vehicle. The price is to be below £100, but realising that many people would be content with less speed, at a small cost, a single-cylinder type will be marketed, and we inspected one of the smaller machines in the course of erection. The engine and gear unit are the same as that used in the Wall three-wheeler (as already described in this journal), no reverse being fitted, and it is fitted in a channel steel frame suspended on four



The new Wall cyclecar, with its designer, Mr. A. W. Wall, at the wheel.

quarter elliptic springs; the body is not sprung from the chassis, but in other respects the smaller machine closely follows the lines of the twin. The top speed gives a ratio of  $5\frac{1}{2}$  to 1. The design struck us as being very practical, and there should be a good future for such a sound machine at such a moderate price. Correspondence regarding these vehicles should be addressed to Mr. A. W. Wall, The Laurels, Lynden End, Sheldon, near Birmingham.



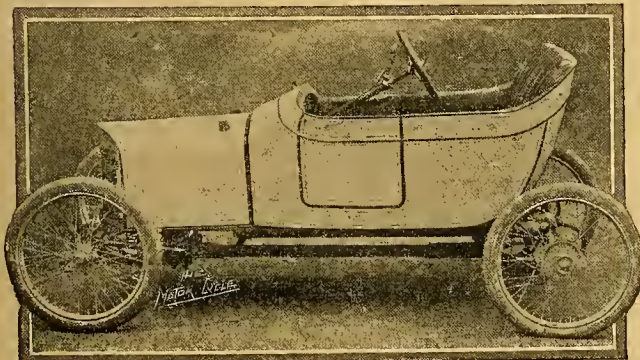
Springing of twin Wall cyclecar, showing radius rod for front axle.

### The P.D.A. Cyclecar.

Messrs. Pickering, Darby, and Allday, of the Belgrave Garage, Bristol Street, Birmingham, have constructed a very neat and ingenious cyclecar, which in its preliminary tests has given excellent results. The motive power is a twin Blumfield engine of  $80 \times 95$  mm. bore and stroke, fitted with a large auxiliary outside flywheel, which also serves as the outer clutch member.

The patented suspension of this machine is rather unusual, as it may be said that the engine, rear axle, and gear box are rigidly connected. On the rear live axle is mounted a two-speed and reverse gear box with gears of the sliding type; and leading from the front of the gear box is a stout torque tube, which encloses the propeller-shaft. The front end of this tube is rigidly attached to a sub-frame carrying the engine, and this frame is slung in front from a circular cross member of the main frame; thus a straight drive is ensured, and universal joints are dispensed with. The whole engine moves when a road bump is met, but so slightly that no ill effects arise, the actual movement being equal to 1.64 in. when the road wheels rise 3 in.

A light T-section frame is used to carry the body, and is suspended on a single cross spring in front and two elliptic springs at the rear. The gear box is fitted with Timken roller bearings, and the road wheels with Hoffmann



Side view of the 6 h.p. twin-cylinder Wall cyclecar showing method of springing.



### Two New Cyclecars.—

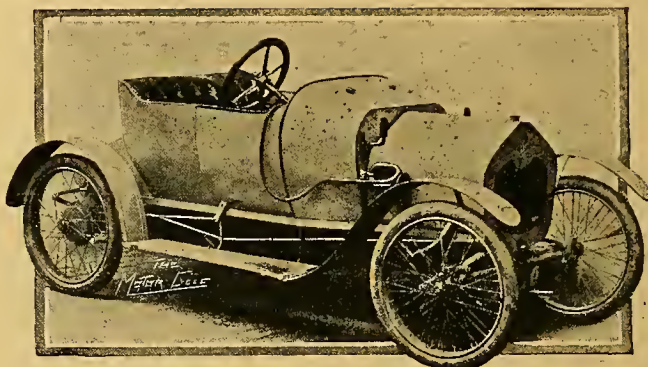
ball bearings. The gears are beautifully cut, and run very silently, the ratios obtainable being 4.7 to 1 and 9.7 to 1, while the reverse gives 11 to 1.

The clutch is of the leather-to-metal type, and when it is withdrawn a further movement of the pedal applies expanding brakes in the rear wheels; a similar pair of brakes, also in the rear wheels, can be applied by a hand lever.

A light metal body is fitted with tanks to contain three gallons of petrol and three quarts of oil. A Best and Lloyd drip feed lubricator, placed under the scuttle dash, is employed to lubricate the engine. A Simms magneto is fitted, and probably a Lukin automatic carburettor will be standard.

Steering is direct, actuated by a wheel, and the steering column may be set to any angle to suit the driver's convenience.

The design is unusual, but good, and the workmanship excellent in all important parts. We hear that the P.D.A. cyclecar may shortly be seen at Brooklands in connection with an important event.



Three-quarter front view of the P.D.A. cyclecar.

## ENGLISH-DUTCH TRIAL.

ONCE again we would urge the British teams to apply to the R.A.C. for their international passes and tickets at once, otherwise there will be difficulty in reserving the necessary accommodation on the train and boats. As little would be gained by making up a Midland party, it has been decided that all meet at Liverpool Street Station, London, in time to catch the 4.10 p.m. boat train, to which a special van or vans will be attached for the competitors' motor cycles.

Competitors are requested to note the following points: Price's oil will be provided for English riders at Amsterdam, but they are requested to leave oil in their tanks when embarking at Harwich, so that they may have a supply with which to ride to that place.

Riders are expected to arrive in Holland with English flags on their machines. The Dutch national colours will be presented to them on arrival.

Competitors will be entertained at dinner, lunch, etc., as the guests of the Nederlandshe Motorwielrijders Vereening, but passengers will be expected to pay for meals.

The Hare Hotel is in Dutch Hotel Net Haasje:

It is impossible to divide kilometres exactly into miles, but the error on the cards when present will be very small, and there is a time allowance of fifteen minutes.

### Points concerning the International Trial.

In connection with the trial itself, the arrangements for its control will follow closely English ideas. The route cards giving distances with spaces for times at the different

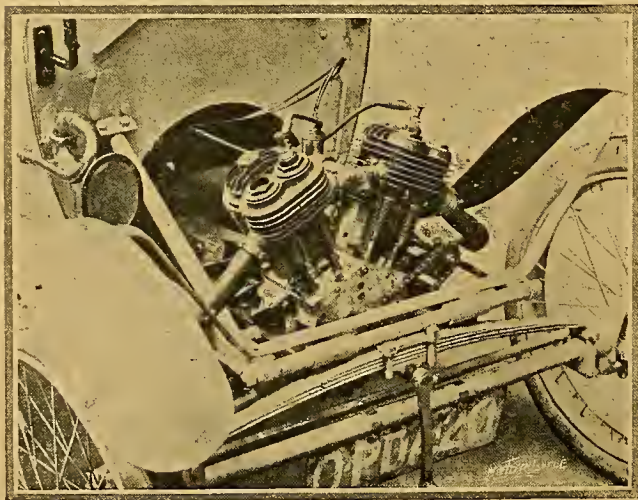
controls and checkers' signatures, will be printed on stiff linen. Competitors also sign their names on the checkers' sheet. The route will be shown in detail on stiff cardboard, and an illustration of the different international warning signs also appears for reference purposes.

Dangerous places on the route are marked O before the name, and the Dutch M.C.C. have further engaged several men who will show, by means of the Dutch flag (red, white and blue), the right way to take. In the district where the wrong road might possibly be taken, viz., between Opeldoorn and de Steeg, the route will be arrowed.

The Dutch officials are wise enough to realise that constant reference to the route card might lead to an accident, seeing that the rule of the road is "keep to the right," so the main instructions will be clear if each competitor keeps his eyes on the road. Further, the whole route is marked by name and distance signposts of the Touring Club of Holland.

Corners in Holland are usually sharp and consequently dangerous, but no mistake can occur if caution be exercised. Special care should be taken in riding through towns, as motor trials are infrequent in Holland, and it is desirable to create a good impression.

The times will be taken at the actual checking stations, which will always be clearly marked by notices and the display of the national colours. Several competitors have asked if it is really necessary to take over evening dress for the official dinner, seeing that luggage is such a nuisance on tours of any kind. We approached Mr. Citroen on the matter, and he considerably replies that the competitors may please themselves entirely. The council and the N.M.V. and the other officials will be in evening dress, but it will not be considered a breach of etiquette if the teams appear in morning dress. The actual teams are now definitely fixed, and their names will be published in the next issue of this journal.



The P.D.A. cyclecar engine, showing method of suspension, etc.

### LINCOLNSHIRE M.C.C. SPEED TRIALS.

The results of the Thonock speed trials, held on Saturday last, by kind permission of Sir Hickman Bacon, were:

#### CLASS 2.

		Time.	Formula.
1.	W. J. S. Bament (3½ Rudge) ...	34½s.	... 60
2.	J. H. Brookes (3½ Rudge) ...	37½s.	... 77
3.	J. E. Harston (3½ Champion) ...	40½s.	... 80

#### CLASS 3.

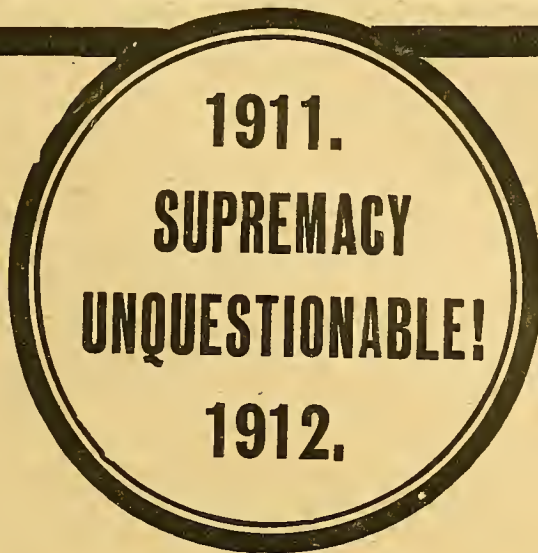
1.	L. Wachter (6 Zenith) ...	34½s.	... 74
2.	L. W. Forington (7 Indian) ...	32½s.	... 90
3.	B. Rhodes (6 Zenith) ...	36s.	... 91

L. W. Forington (7 Indian) made fastest time of the day. The course was 1,000 yards in length, with a good surface. Sir Hickman Bacon very kindly entertained the members to tea.





"T.T." Pattern.



"T.T." Pattern.

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# What we H

## Mr. Harry Long completes his ride round

# SINGER

## with sidecar

*The route covered by Mr. Long, 5,128 miles.*

Mr. Harry Long, riding a 4 h.p. Two-speed SINGER with sidecar and passenger and full touring outfit (the whole weighing about 780 lbs.), has completed his great coast ride, having now covered 13,563 of the 20,000 he has determined to do within six months, without a single involuntary stop or the slightest mechanical trouble.

During his ride Mr. Long has found it necessary to climb some of the worst hills, and traverse some of the most badly-made roads in Great Britain.

The ease with which Mr. Long has accomplished his most severe task fully justifies the faith he placed in the SINGER, and proves once again what a truly wonderful machine it is.

The SINGER 4 h.p. model with the reliable Two-speed gear is a machine worthy of your confidence. Would you like to know more about it before deciding on your new mount?

**Let us send you our Catalogue.**

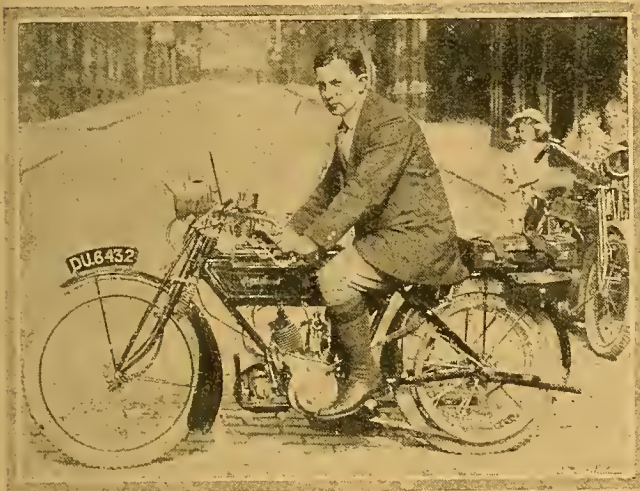




# Scottish Six Days Reliability Trials

Edinburgh, Saturday, July 20th.

**O**WING to the large number of entries (seventy-five) two alterations have been made in the route, the selected hotels being unable to accommodate so large a crowd. John-o'-Groat's will not be visited, the inland cross road to Thurso being preferred, and Amulree Hill has, unfortunately, been deleted, owing to hotel troubles. This famous ascent will, however, be tackled from the Kenmore side next year.



The 3 h.p. twin-cylinder J.A.P. engined three-speed Hazlewood, which is being ridden by F. Begley.

## Entries for Team Prize.

The following are the entries for the team prize:  
 L.M.C.—N. Soresby, H. Bevir, and H. E. Wace.  
 Bat.—J. D. Morrison, P. E. Toliree, and S. J. K. Thomson.  
 Humber.—A. G. Fenn, W. Creyton, F. G. Edmond, and B. Yates (nominated from).

Rover.—G. E. Whitehouse, A. J. Sproston, and C. T. Newsome.

Douglas.—W. B. Gibb, G. L. Fletcher, and A. H. Alexander.  
 Bradbury.—W. Houghton, H. Gibson, and C. W. Meredith.  
 Rudge.—G. T. Gray, V. Taylor, J. H. Begg, and G. Taylor (nominated from).

Quadrant.—A. A. Hay, T. Silver, and L. E. Cass.  
 Indian.—J. R. Alexander, G. E. Cuffe, and B. A. Hill.  
 New Hudson.—G. Bell, H. G. Dixon, and H. Berwick.  
 Premier.—W. B. Little, R. Holloway, and J. Oliphant.  
 Ariel.—F. C. North, L. Newey, and A. F. Downie.

There are no marks or timings for the hill-climbs, the ascents being so formidable that a man is held to have performed with credit if he reach the next control in schedule time, but performances on the following climbs will be "observed," and taken into account in the awards for all the special prizes.

## Observed Hills.

First Day.—Rest and be Thankful.

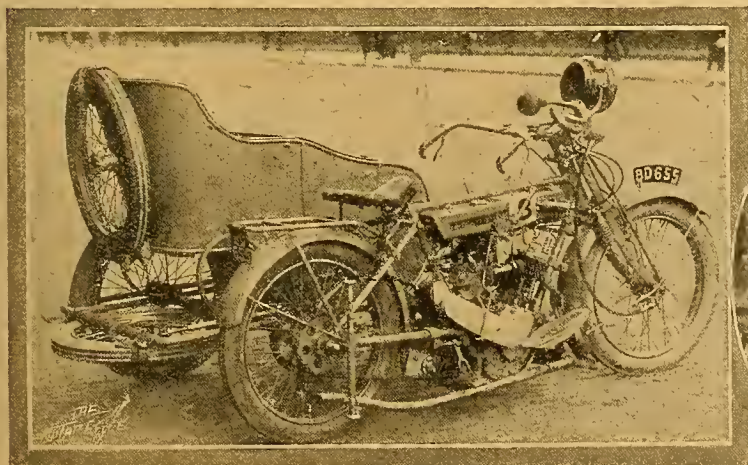
Second Day.—The Devil's Elbow (up to Cairnwell Summit, the highest main road in Great Britain). Rinloan (a piece of very bad going, with an awkward start). Cockbridge (a combination of hairpins and gradient, perhaps the stiffest ascent in the trial). Bridge of Brown.

Third Day.—Eriboll (a new hill to trials competitors, with excellent surface, terrific gradient, and three acute bends). Hill near Hope (a quarter of a mile dead straight, so steep that a racing 7 h.p., with flying start, can barely top the crest). Appagill (covered with loose stones a foot deep; the hill on which Fred Dover failed eighteen times on his coast ride, his machine being hauled up by a donkey).

Fourth Day.—Berriedale (the south side, not previously ascended in any trial; long and steep).

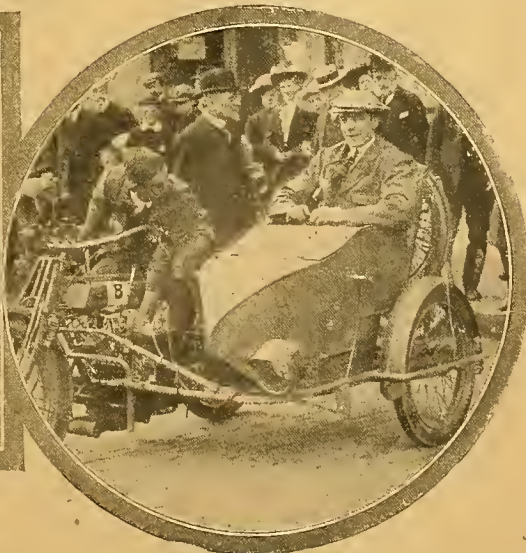
Fifth Day.—Little Gruinard (loose and bad turn at top). Poolewe (not very difficult). Glendoe (long, steep climb).

The competitors check at the summit of Eriboll, and then return down the hill, as attempts to arrange for ferrying on the far side have broken down. There is likely to be some confusion here, with seventy-five competitors ascending and descending a very twisty hill; as the day's ride amounts to 211 miles, it may not be feasible to arrange an hour's wait at the summit.



FIRST APPEARANCE OF THE 1913 MODEL THREE-SPEED CLYNO.

- 1) Rear view showing the two detachable and interchangeable wheels shod with 3in. Pamer tyres.
- 2) Front view showing new design coach-built body. Frank Smith is driving the machine in the Scottish Trials.





### The Scottish Trials.—

The road reports are not very encouraging. Roads near Drumnadrochit, Rinloan, and Laing are announced to be in process of repair, and almost impassable. Yesterday a large car shed its engine attachment bolts in trying to negotiate a two-mile stretch near Laing. Altogether, some of the English trade entrants are likely to receive eye-openers both in respect of bad going and of gradient.

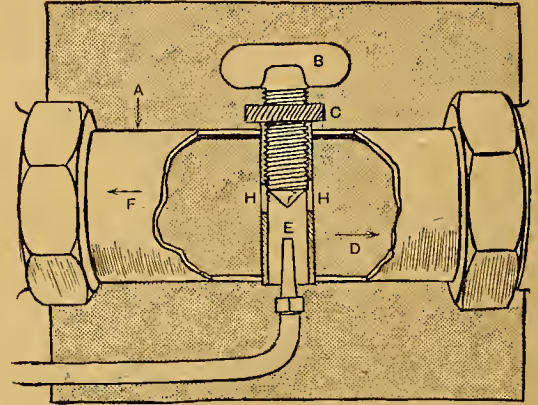
Sunday, July 21st.

Hanover Street, outside the rooms of the Edinburgh and District M.C., presented a remarkably busy scene this afternoon, when most of the competitors presented their machines for labelling.

The trials are run in a very free and easy fashion, and the machines are not sealed in any way, the remote and desolate character of the places visited rendering substitutions impossible. Most of the entrants presented themselves, and some of the machines were of exceptional interest. A centre of attraction was Frank Smith's 1913 Clyno sidecar, shod with 3in. tyres on all wheels, both cycle wheels and the sidecar wheel being detachable in half a minute and interchangeable. The Clyno is further fitted with an experimental gear box, affording three speeds by a sliding key.

Talking of gears, there were probably more Armstrong hubs to be seen in Hanover Street than have ever been collected together before outside one maker's stores. W. Creyton appeared with his Junior T.T. Humber. If he earn a gold medal, who shall dare to say that the Manx machines are not roadsters? At least two riders hope to get through on single gears. P. E. Tolfree has transferred his overhead valve J.A.P. engine from a Matchless to a Bat frame to complete the Bat team. His lowest possible gear ratio is 5 to 1, but he

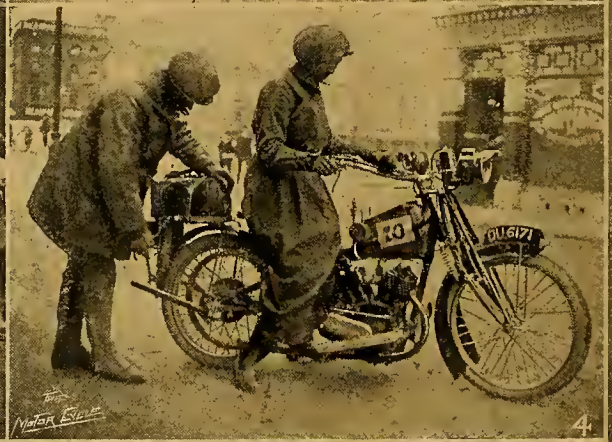
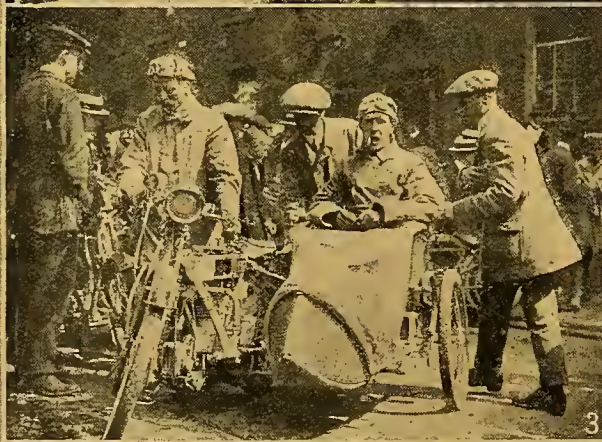
has one of the new Morrison pilot jets fitted, with the aid of which he says the machine can lug itself up any gradient. This device, which we illustrate, is fitted midway between the engine and the carburetter, and consists of a small brass



By-pass jet fitted to P. E. Tolfree's Bat-Jap.

A. Inlet pipe. B. Adjuster. C. Lock nut. D. To cylinder.  
E. Jet. H. Holes opening into inlet pipe. F. To carburetter.

tube which vertically bisects the inlet pipe. This small tube is open to the air at its lower end, and closed at the top end by a conical ended adjuster screw. It communicates with the inlet pipe by two holes drilled through its centre.



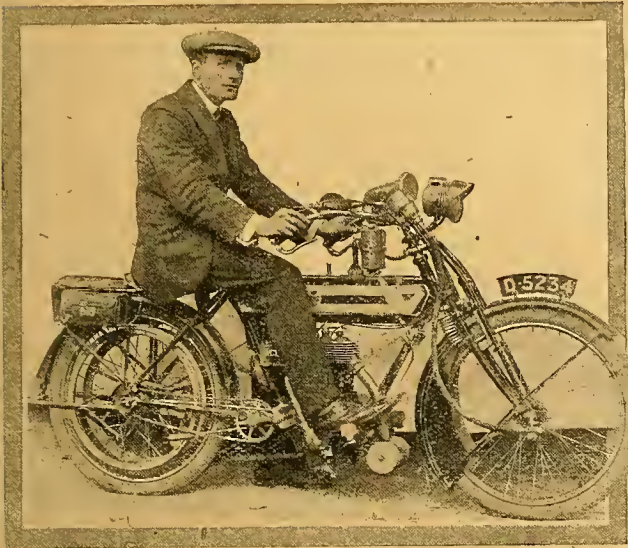
### INCIDENTS OF THE IRISH END-TO-END TRIAL (described in our last issue.)

- (1) A bird's eye view of the competitors at the Dublin Control.
- (2) Hugh Gibson (Bradbury) at the Dublin Control. He did very well in the trial, but ran short of petrol when in sight of the end. He had given the contents of his spare tin to a stranded competitor.

- (2) Early arrivals at the Control at Cork.

- (4) Miss Hind leaving Cork on her 6 h.p. twin Rex.





A. J. Sproston astride the  $3\frac{1}{2}$  h.p. three-speed Rover which he is riding in the trials.

capable of being partially covered by the aforesaid adjuster screw. The pilot jet is centrally mounted inside this tube, and receives its petrol *via* a small separate pipe from the main carburettor float chamber.

Several of the competitors have belt shields fitted in view of the Highland rainstorms. Those on W. D. South's Rudge look particularly effective. Two of the sidecarists are essaying extremely herculean tasks. P. W. Bischoff is taking round the only lady motor cyclist winner on Brooklands, Miss Beatrice Langston, and in practice they found that the ratios of their three-speed Triumph were a shade too high for the worst hills, so they wired for a Sturmev-Archer Triumph, which arrived late last night, and have spent the interval fitting the old engine in the new frame, Miss Langston proving herself quite an expert as mechanic and chauffeur. Miss M. Hind brought up her new twin Rex fresh from its Irish victory in the End-to-end trial.

#### A Start in Bad Weather.

Monday, July 22nd.

The weather was unpromising at the start this morning, for a sea soaker in drizzle came up the Forth at daybreak. Several competitors sustained heavy falls on the greasy tramlines in their two-mile ride out to Murrayfield car terminus, where the trial actually began. The non-starters were H. Bevir (L.M.C.), H. E. Ware (L.M.C.), Chas. Fraser (Campion-Precision), J. R. M. Larnach ( $3\frac{1}{2}$  Kerry-Abingdon), making seventy-one starters. The L.M.C. team thus fell through. N. Soresby's machine had a new gear designed by Mr. Lloyd with belt for high ratio and chain for the low. Hutchison (Rex-Jap and sc.), withdrew as his machine was delayed on the railway from Coventry.

P. W. Bischoff was nearly late at the start. He finished transferring his old engine to the new frame late on Sunday evening, and en route to Murrayfield for the official start: he was several times delayed, his magneto timing wheel shifted, and a plug sooted.

Rain fell steadily throughout the preliminary preparations and at eight o'clock precisely the first quartette departed on their arduous task. The entry was effectively strung out by starting in fours at two-minute intervals. As a foil to the forthcoming scenery and precipices, the Scottish trial always starts with ugly level districts, and everybody was glad when Stirling, the first check, was reached. A competitor said that if Scotland is the land of cakes she got them for her pot-holes. Worse was to come. The valley road striking west towards Loch Lomond was like corrugated iron and the lakeside road was much rougher. There was no question of leaning in or leaning out on corners, for the trouble was to keep the machines on the road at all. Leaving Loch Lomond, we cut across the neck of a narrow peninsula and lunched at Arrochar, on the shore of Loch Long. The men were all well up to time, and a few punctures were the only troubles reported. The afternoon route rounded the

head of Loch Long, crossed over Rest and be Thankful to Loch Fyne, passing Inveraray Castle, then hugged the loch side to Lochgilphead and along the sea coast into Oban. There is no finer scenery in the kingdom. We were glugged with continuous panoramas of lake and peak and forest, whenever the pot-holes and innumerable blind corners suffered us to glance off the road. On one stretch there were actually twenty hidden hairpins in a single mile.

However, motor cycling interest centres on the climbing of Rest and be Thankful. It is an unusual hill. The real climb consists of 100 yards of 10% gradient, an easy bend and a bad bend, but the preface of the hill includes seven miles of gentle collarwork, and many riders tackle this on full throttle so that engines are plum colour ere the bad bit is reached. Thanks to variable gears, only three or four men were short of engine power, the contrast with previous years being strongly marked.

#### The Ascent of Rest and be Thankful.

The conditions were ideal, a gentle cooling wind blowing across the road and light sunshine, the rain having been left behind in Stirling. The road surface was simply magnificent up to the bad bend, and was smooth round the corners for anybody who swung wide, but the inside of the hairpin was a mass of 4in. granite chunks. Clean ascents were few and far between, being largely confined to the men who had competed in previous years. The others took the corner close in, where the stones lay deep on a 1 in 3 grade, and they mostly paid the penalty. Owing to the miserable numbers provided it was very difficult to identify the riders, especially if they arrived in clumps. The first man up was Angus Macmillan, who purred round in clean style on his Scott. Thompson, mindful of his sidecar breakage on this corner in 1910, swung round gently. McMinnies (Triumph) stopped far below. Viewed through the telescope, he appeared to be lowering his single gear. Finally, he came up well. Pratt (P. and M.), was good; Sproston (Rover) seemed to have 3 h.p. in hand; Creyton ( $2\frac{1}{2}$  h.p. Humber) stuck in the stones; Steel (B.S.A.) fell twice, each time baulking one rider, first Holroyd (Motosacoche) and then Alexander (Indian); C. T. Newsome (Rover), Fenn (Humber), J. Morrison (Bat), and Chisholm (James) were all good; Hugh Gibson roared up on his Bradbury sidecar as if he were on the test hill at Brooklands. When he cut in the stones threw his gearing out, and his frightened passenger forgetting to lean out, he nearly took the ditch, but just cleared it, and scraped up by clutch manipulation. Returning, he laughed to see how simple the corner is when you have seen it. Munro (Douglas), fell and Keiller's Rudge was brought over by the recumbent machine.

At Keiller's second attempt, White (Alldays) played him a similar trick, but he got up next time with the aid of



Mrs. H. J. Woodgate, who is the latest convert in Leicester. She rides a  $2\frac{1}{2}$  h.p. two-speed Douglas.



### The Scottish Trials.—

much legging. F. S. Douglas (Dot) fell and balked Alan Hill (Indian); the Clyno negotiated things well; Soresby (Rudge) was helped by a lucky skid; Vernon Taylor (Rudge) good; Brough performed an absolutely circular skid, went down and lowered his single gear, and came up again easily; Alexander (Douglas), Pratt (Aldays), Westwood (Triumph), Morrison (Bat), Lord (Rex), W. Downie (James), Mundy (Macbeth), Little (Premier), Downie (Ariel), Meredith (Bradbury), Gray (Rudge), all creditable. Holloway (Premier) made perhaps the best climb of any stranger to the hill. W. Gibb (Douglas) performed a cakewalk in the stones, so baulking Silver and Cass (Quadrants), who were hard on his heels. H. Berwick (New Hudson), Graham Dixon (New Hudson), Newey (Ariel), Fletcher (Douglas), Cocker (Singer), and Begg (Rudge), all found it advisable to push with their feet. Allan Hay (Quadrant), the sexagenarian humorist, lost his steering in the stones, charged the far bank with his engine roaring, popped neatly over the handle-bar, and got up laughing. Donaldson (New Hudson) dismounted further down and then came up well; Miss Hind's wrists were not powerful enough to curb her plunging Rex, when she got among the boulders, but she restarted on the clutch with a little help; North (Ariel) skidded heavily on his first attempt, but ran down a few yards, turned on the clutch, and shot up. Cuffe (Indian) made an admirable climb; the twin Hazlewood's engine was full of ginger, but the rider dangled his legs for fear of skids. Dixon (Singer) was baulked by cries of "Wide" when he had begun to cut in. Macdonald (Norton) fell heavily; Bell (New Hudson) stopped, Wood (Brough) stuck, Houghton (Bradbury), after a long wait down below, arrived minus his passenger. Oliphant (Premier) stopped but restarted on the clutch. The two G.W.K. cyclecars came round magnificently, Keiller, the faster, requiring a tremendous hand at the wheel to avoid the ditch; Wood slower but neater. Bischoff, who knew the hill, made a well nigh perfect climb, his Triumph's slow speed being eloquent of power, while Miss Langston weathered it in professional style. Le Vack (Motosacoche), who had stopped down below, stuck deep in the rut, while the telescope revealed Whitehouse (Rover) manfully pushing in the distance.

### A Clever Makeshift Repair.

P. E. Tolfree accomplished a very clever roadside repair. As he oiled up for Rest and be Thankful, the glass of his oil pump burst, so he fastened the pieces in position with court plaster, failing to obtain a new glass. In Oban he bought a thin glass lamp chimney, filed it to its proper length, padded it to correct thickness with wrappings of diachylon plaster, and cut a hole in the plaster for sight feed. White ran off the road at one corner, and buckled his wheel. He finished, but the tyre was badly worn on one side.

The remainder of the run would have been child's play but for the blind corners and rough going. A practical rider can guess its nature, if I say my  $3\frac{1}{2}$  h.p. did it all on a  $3\frac{3}{4}$  gear, but that I steered two-handed. There is ample accommodation of a comfortable nature in Oban, and we are

all looking forward to a continuance of sunshine to-morrow. To-day should effect a general improvement in the cornering, which is urgently needed. The fact is that English methods do not pay here, as a string of potholes just round a bend throws the front-wheel out wide in six inch bounces.

The alleged stiffest section of the route comes after lunch on Tuesday, with severe and twisty climbs at Devil's Elbow and Coedyridge.

### Marks Lost First Day.

The following list of marks lost were announced on Tuesday morning:

Mundy, Lord, Duncan, Bell, J. Bell, Miss Hind, 1 each.  
U. Downie, 3.  
Keiller (Rudge), 9.  
Douglas (Dot), 18.  
A. D. Scott, 60.  
W. F. Croyton card incomplete.

### Pitlochry, Tuesday afternoon.

"More circus riding" was the curt comment of one rider a few miles from the start this morning, and it was fortunate that the bright sunshine continued, for the roads were quite trying enough without the grease. The route ran along the shore of Loch Etive for a few miles, and then crossed the glorious pass of Brander, over to Dalmally once again. Bumps and corners cruelly blinded us to most of the scenery. One wag remarked that the road reminded him of an inebriated corkscrew spinning on a lathe. Near Dalmally the surface got worse.

A humorous side light on Scotch roads is provided by the following incident: An official car and several competitors rode for half a mile down a turning when the road suddenly petered out, and it proved that they were on the rough foundation of an unmade road, but it had felt just like the ordinary highway. Near Crianlarich the surface improved, and sometimes straight stretches nearly 100 yards in length were encountered. We saw no riders stopped, except one or two men whose tyres were gashed through by sharp stones, and all the early starters had made good time up to the first check at Killin.

When we passed through Killin and on to the luncheon stop at Pitlochry the road was familiar to many, but its surface is not so good as in 1911, and wherever the surface was really good, for a mile or two, the police were obtrusively busy. There was no hill-climbing this morning, and our one excitement has consisted in trying to acquire a permanent squint so as to watch the gorgeous scenery with one eye and the road surface with the other.

## FRENCH INTERNATIONAL CUP RACE.

Organised by the A.C. de Sarthe and the French paper *L'Auto*, an important race entitled La Coupe Internationale des Motocyclistes will be held on September 8th. The course will be guarded by military, as in the important car races, and will be a circuit of twenty-five kilometres to be covered either eight or ten times—248 or 310 miles.

## CLUB COMPETITION RESULTS.

The results of the Hampshire Motor Cycle Union hill-climb, held on Wednesday last week, at Hayden Wood Hill, East Meon, are as follow. The hill is threequarters of a mile long, and there are no bends. There were nearly fifty entries, and just over 130 sat down to tea at the George Hotel:

Class I.—F. J. Burt ( $2\frac{3}{4}$  New Hudson); 2, Percy Kirk ( $2\frac{3}{4}$  Enfield); 3, F. Evers ( $2\frac{3}{4}$  Hobart).

Class II.—1, R. C. Pearson ( $3\frac{1}{2}$  Premier); 2, F. J. Burt ( $2\frac{3}{4}$  New Hudson); 3, Percy Kirk ( $2\frac{3}{4}$  Enfield).

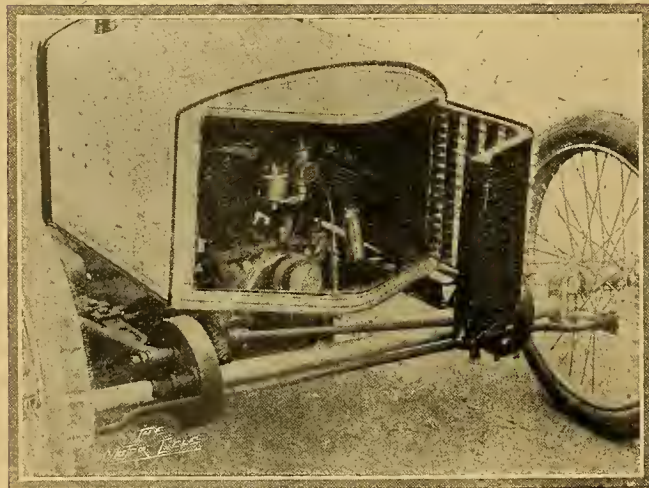
Class IV.—1, Frank Tappenden ( $3\frac{1}{2}$  Premier); 2, R. C. Pearson ( $3\frac{1}{2}$  Premier); 3, Rafe Barclay (T.T. Rudge).

Class V., Sidecars.—1, Frank Tappenden ( $3\frac{1}{2}$  Premier); 2, P. Kiln ( $3\frac{1}{2}$  Hudson); 3, R. C. Pearson ( $3\frac{1}{2}$  Premier).

J. G. Kimber (6 Matchless) made the fastest time of the day, and is the winner of a special gold medal. A Wood-Milne tyre was given for the fastest time in Class II., which was won by R. C. Pearson ( $3\frac{1}{2}$  Premier).

### A Consumption Test.

A petrol consumption test, held by the Haverstock M.C.C. on the 21st inst., resulted as follow: 1, W. Brown ( $3\frac{1}{2}$  Zenith sc.); 2, F. Richards ( $3\frac{1}{2}$  Centaur sc.); 3, H. Moliver (Rudge Multi sc.); 4, A. Lunnion ( $3\frac{1}{2}$  Zenith sc.). The winner's consumption worked out at 135 m.p.g.



Front view of the Wall cyclecar, showing dummy radiator swung back, rendering the engine accessible (see page 841).



## RIMS AND TYRES.

### Rim Width, Resilience, and Side-slip.

THE suggestion made in *The Motor Cycle* some months ago that tyre manufacturers should send out metal templates for testing rims is an excellent one, and it is to be hoped that it will be acted on. Everything appertaining to tyres and rims is of such prime importance, not only to the user but to the entire trade, that the Manufacturers' Union might well keep the subject always before its members—at least until something has been done to reduce the present amount of loss, annoyance, and, at times, danger due to lack of standardisation in tyre and rim sizes and certain other matters. If the manufacturer could be induced to regard the tyres as equal in importance to the engine, users would soon observe an improvement in them, with a proportionate reduction of expense and enforced stoppages.

### Countersunk Rims.

There is a point in connection with rims whereon we might with advantage copy the Americans. This is in countersinking the rim to receive the nipple head and washer. The only objection I have ever heard raised to this practice is that the smooth surface of the hub side of the rim would be spoilt, but this is quite negligible. It is surely better to have the "hob nails" on the exterior of the rim than to have a similar or rather rougher pattern inside. The accompanying sketch shows a section of an American motor cycle rim with punched spoke hole and recess for the rivet head, as sent out by the makers. English rim makers send out the bulk of their rims drilled and plated or enamelled, and if they could be induced to countersink them also there would be no extra trouble involved in wheel building—in fact, a rim with the spoke holes punched at the correct distances and properly "staggered" saves the wheel builder considerable time and results in a better wheel.

### Damage to Tubes.

Nipples, washers, and spoke ends (which latter are not always filed flush as they should be) are responsible for much tyre trouble; they give a wavy seating for the beads of a tyre, and if these are of the kind intended to meet in the rim bed instead of overlapping, the nipples will often cause a series of gaps through which the inner tube blows into blisters and either nips or bursts. Moreover, even when completely covered by a flap or a tape the nipples seem in many cases to have the unpleasant knack of reproducing themselves on the tube in the shape of small blisters—"babies' heads" as they are called by repairers—and if these do not burst, the unequal strain frequently causes the tube to perish and crack at these places, causing an otherwise sound tube to be scrapped. With wired-on covers the washers and nipple heads make the work of attaching and detaching far more difficult; let anyone who doubts this try putting a wired-edge cover on a rim before it is built up and without a tape in the bed, and afterwards try it when the wheel is built up and a tape fitted over the nipple heads. Were the rims countersunk, after the wheel was built the depression could be filled up with some substance that would set hard—shellac, for instance—and the result would be a perfectly smooth interior surface which if desired could be covered with a very thin adhesive tape. This

### The Neglected Wired-on Cover.

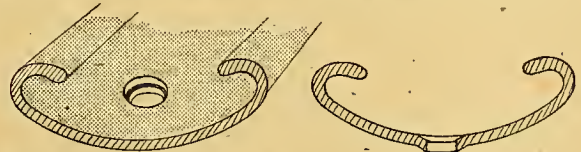
would make easier the work of attaching and detaching beaded-edge tyres, while it would practically remove all objections to the wired-on tyre, which at present is rather troublesome to those who have not acquired the very simple knack of manipulating it.

### Rim Widths and Tyre Sizes.

Just now, when many firms are selling  $2\frac{1}{2}$  in. tyres to fit existing  $2\frac{1}{4}$  in. rims, and 3 in. tyres for  $2\frac{1}{2}$  in. rims, it may be well to mention that such tyres need to be kept well inflated on a solo mount, otherwise there is a tendency to roll at corners, and also a greater disposition to sideslip. Rim width has a very great influence, both on resilience and skidding—the narrower the rim in proportion to the tyre upon it, the livelier or more resilient will be the tyre, and correspondingly increased will be the tendency to roll or skid. If the width of a beaded edge rim be reduced beyond a certain amount, the tyre would pull off at corners, and, of course, the greater the speed and load the more readily would this happen. *Apropos* of this, it may be mentioned that the special Kempshall tyre fitted for sidecar work on the P. and M. machines has a specially wide rim.

### The Wired-on Cover.

This is the "Cinderella" of the motor cycle tyre world, but it is gradually gaining ground. Personally, I favour the wired-on cover because it is cheapest, both in first cost and in use; it cannot cut or burst at the beads, and no retreader can alter the size and fit on the rim unless he wraps something round the

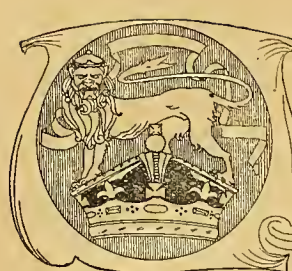


wires. Again, the shape of a wired-on rim seems to prevent it getting kinked as much as beaded edge rims—some of the latter having very wide spreading flat beads—and, further, a kinked rim does not mean a cut cover or affect the security of the cover upon the rim. The tendency to creep when deflated is one of the objections raised to the wired tyre, but it will not creep if pumped to a pressure of 15 or 20 lbs. to the square inch, which is too low for riding any motor cycle tyre.

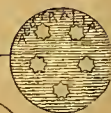
Owing to the difficulty of obtaining studded wired-on covers, many riders with a preference for this tread have put their inclinations aside and used beaded covers. Many manufacturers still decline to make wired covers with really efficient non-skidding treads, but it is now possible to obtain rubber studded wired covers in various sizes and weights from Messrs. W. and A. Bates, the Leicester Rubber Co., and other firms. The Michelin Tyre Co. make a steel studded wired cover in 26 in. x 2 in. and larger sizes, and the Rom Tyre Co. have a heavy tyre with combined rubber bars and steel studs, which is stout enough for sidecar work.

Experience induces the opinion that a  $2\frac{1}{4}$  in. wired tyre will stand sidecar work better than a beaded tyre of the same size, though a larger size is at all times preferable for a passenger combination. PRECENTAUR.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

July 25th	...	8.58 p.m.
" 27th	...	8.55 "
" 29th	...	8.52 "
" 31st	...	8.49 "

## Cyclecars.

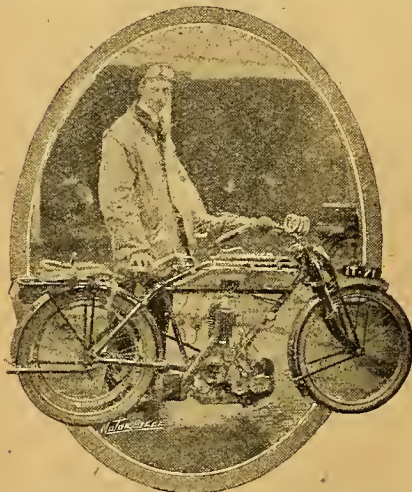
At the end of next month two new cyclecars, the product of large Midland firms, are expected to be made public.

## Detachable Wheels for Sidecars.

The latest fitment on sidecars is a detachable and interchangeable wheel. The 1913 model Clyno has this feature, the makers having purchased the patent from J. M. Lamb, whose quick acting device was illustrated in *The Motor Cycle* of February 15th, page 180.

## Rear Lights on Vehicles

The byelaw made by the Kent County Council on May 15th, making it compulsory for all vehicles to show a red rear light at night, will come into force on August 1st next. The following counties now have byelaws rendering rear lights compulsory on all vehicles: Warwickshire, Hampshire, Buckingham, and Kent. It is sincerely to be hoped that all counties in the kingdom will follow suit, as the number of fatal accidents due to unlighted vehicles on country roads, is on the increase. It is little short of criminal neglect to fail to carry these necessary warnings, which, in the case of reflectors, are so cheaply obtained, and entail no cost or worry to maintain in a state of efficiency.



W. T. Wartnaby (3½ h.p. W. & D.), a successful competitor in the Coventry and Warwickshire M.C. Manville Trophy Trial. He climbed all hills on a single gear.

## Speed Trials in the North.

The Cumberland M.C.C. has received permission to hold open speed trials on August 5th. This club asked the A.C.U. to appoint a judge, and Mr. T. W. Loughborough will act in that capacity.

## Kick Starters.

There is no doubt that engine foot-starting devices will be more in evidence on 1913 models than ever before. Already we have seen three experimental models for 1913 with such a fitment under test.

## Bad Surface on Honister.

On Sunday, July 14th, a party of the Westmorland M.C.C. had a run to Honister. Two members attempted the climb from Buttermere, E. Jefferys (7 h.p. Indian) and B. Jefferys (5-6 h.p.

## AUGUST BANK HOLIDAY.

Owing to the above Holiday, the issue of "The Motor Cycle" for August 8th will be closed for press earlier than usual. All copy and instructions for paragraph advertisements in this issue must therefore be in our hands not later than first post on Thursday, August 1st.

Bat-Jap). The surface of the road was atrocious, the left-hand side being impossible to ride on, owing to the skids on coach wheels having torn it up about a foot deep. B. Jefferys's first attempt nearly landed him into the stream. His second attempt was successful, and, as an exhibition of nerve and skilful driving, would be hard to beat. The gear used on the Bat was a 4½ to 1. The foreman of the slate quarries at the top of the pass said that it would be impossible for any motor bicycle to climb it, as the road was so much worse than when Collier and Smith climbed the pass.

## Open Exhausts.

Fines are being imposed in America on motor cyclists who ride about with open exhausts. Arrests have been fairly numerous of late, and five motor cyclists were recently fined \$3 each. The judge made it clear, however, that unless the nuisance be stopped soon a penalty of a more serious nature will be imposed.

## Motor Bicycles with Silent Knight Engines.

We are given to understand that Mr. J. S. Gibson, manager of the Mechanical Department of the Canada Motor and Cycle Co., West Toronto, will shortly bring out a motor cycle fitted with a Knight engine. There have been several rumours in this country of motor cycles fitted with this engine, but up to the present time we have not heard of one behaving satisfactorily on the road.

## SPECIAL FEATURES.

### THE SCOTTISH TRIALS (Illustrated.)

### TWO NEW CYCLECARS.

### WEEK-END COMPETITIONS IN ALL PARTS

Described and Illustrated.

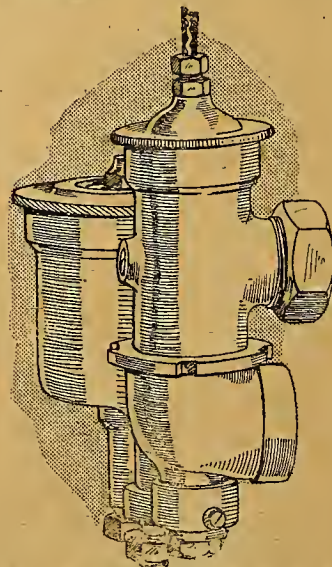
## A Comprehensive Issue.

This issue contains illustrated reports—in most cases exclusive—of important club competitions held in all parts of the country. *The Motor Cycle* is the only journal which regularly covers every important motor cycle event, no matter whether in the north, south, east, or west.

The first two days of the Scottish trials are also described, and illustrations of the new models in that important event included.

## Mont Ventoux Climbed in 29 Minutes.

A touring test, including the ascent of Mont Ventoux, was held by the Marseilles M.C. on the 14th with the following result: Class I. (300 c.c.), riders of Terrot machines were 1, 2, and 3. Class II. (400 c.c.), Motosacoches 1 and 2. Class III. (500 c.c.), 1 Moto-Rève, 2 Peugeot. Berlie (Moto-Rève) gained most points, winning a silver shield. The fastest ascent in the hill-test was made by the rider of a René-Gillet in 29m.



Showing the outward appearance of the new handlebar-controlled Longuemare automatic motor cycle carburettor.



**A Good Sidecar Load.**

The accompanying photograph depicts a standard single-gear clutch model Triumph with a load of ten passengers and driver (about 116 stones in all). With this load the driver, Mr. A.



A. Spurgeon with his Triumph sidecar combination and ten passengers.

Spurgeon, of Coventry, claims to have ascended a hill near that city a quarter of a mile in length, the gradient of which is 1 in 23. The machine, which had previously covered 6,000 miles, was geared 6 to 1, and, we are told, was started from a standstill by means of the clutch, accomplishing the test without a hitch.

**The Junior T.T. Winner Better.**

W. Harry Bashall, who has lately had a week in bed with a poisoned throat, is out and about again, we are glad to say.

**Motorists' Insurance.**

A certain town clerk is credited with the rather absurd statement that motorists being insured did not have to pay their own fines, consequently it was of little use imposing a penalty of that sort upon them. He suggested imprisonment as an alternative.

**Record Breaking in Canada.**

The first annual championships of the recently organised Canadian Motor Cyclists' Association were held at Hamilton, Ontario, on Dominion Day, the 1st inst., when 4,500 persons saw all existing Canadian records badly smashed. Although many good racing men from the United States took part in the meet, including the renowned Don Klark, an Indian rider of Detroit, the new Dominion champion turned up in Joe Baribeau, a real Canadian of Winnipeg, who also rides an Indian machine. Baribeau took three out of the four trade rider events. His greatest triumph was in the twenty-five mile race, which he won in 27m. 10s., or three minutes better than the distance has ever been covered before in that country. Klark won an invitation ten mile race in 8m. 55s., which was also a record. A British machine took first place in the only event on the programme in which overseas machines were entered, N. Newport, of Toronto, on a Triumph, walking away with the prize in the five mile belt drive race. Several American makes were beaten in this contest.

**Open Speed Trials.**

There is a big entry for the speed trials of the Oxford M.C.C., to be held in Heythrop Park, near Chipping Norton, on Saturday next.

**Police Traps.**

A trap is being worked between St. Albans and Redbourne, and it is said the trappers are secreted in cottages which border the road. Motor cyclists are warned to be very careful on this section of the London-Birmingham Road.

Care should also be exercised in Long Preston (Yorks).

**Motor Cycle for Sewerage Inspector.**

At the last meeting of the West Kent Sewerage Board, held at Bromley, the Subcommittee reported that an order had been placed with Humber, Ltd., for a 3½ h.p. two-speed Humber with extra strong tyres; also a sidecar to carry a workman and the necessary tools. The machine is for the use of the assistant engineer of the West Kent Division.

**Rear Lights in Kent.**

On August 1st a new byelaw comes into force in Kent compelling all vehicles to carry a rear red light "visible at a reasonable distance." Reflectors will be allowed. The byelaw excludes cycles, traction engines, or vehicles drawn by hand.

**Important Rudge Developments.**

We are authorised to state that the management of Rudge-Whitworth, Ltd., have decided to manufacture two new models for 1913. One is a four-wheeled cyclecar, in which will be embodied several new features, and the other is a sidecar, which will be specially designed to suit the Rudge-multi. Details of the new patterns will be made public in the late autumn of this year.

**First Propeller-driven Vehicle.**

The daily press last week described a French motor car fitted with an aeroplane propeller as a novelty. The first vehicle to be driven in this manner was constructed some years ago by Anzani. It was a motor cycle with the propeller in front, and was used by Professor Archdeacon for determining the angles of aeroplane propeller blades; it attained a speed of fifty miles an hour on the road.

**Phenomenal Petrol Consumption.**

The performance of H. S. Askew in the consumption trial, held on May 11th by the Oxford M.C.C., and duly reported in *The Motor Cycle*, was so remarkable that few would credit it. We suggested that Mr. Askew repeat the performance under similar conditions, which he attempted to do. The total weight was 5 cwt. 2 qrs. 14 lbs., and the petrol allowance 31 ozs. 6 drs., the same as before. The distance covered was 26.4 miles, which gives 135.6 miles per gallon. This is a very fine performance, and deservedly gains first prize in the passenger class.

FUTURE EVENTS	
July 27.—R.A.C. Associates' Gala Day at Brooklands.	
" 27.—Oxford M.C.C. Open Speed Trial.	
Aug. 2.—Bristol B.&M.C. Open 24 Hours Trial to Land's End and back	
" 3.—Cumberland C.M.C.C. Open Speed Trials.	
" 12-17.—A.C.U. Six Days' Trials.	
" 31.—Coventry and Warwickshire M.C. Annual Open Hill-climb.	
A special heading will be found in the Miscellaneous Advertisement columns for announcements of forthcoming club competitions	



THE WELSH OPEN HILL-CLIMB AT CAERPHILLY.

J. C. Moore (Rudge) negotiating the abrupt bend in the Cardiff M.C. hill-climb.



# B.M.C.R.C. FIFTH MONTHLY MEETING.

**T**HE fifth monthly meeting of the British Motor Cycle Racing Club must be in every way written down a thorough success. As the following results show, some excellent performances were put up, including new figures for the flying mile in two classes. The programme opened with the Third 1912 Time Trials, over a measured kilometre and a measured mile, flying starts. The good figures made are perhaps in a degree due to the absence of wind. Results:

## CLASS A.—275 C.C.

			Kilometre.		Mile.
		secs.	m.p.h.	secs.	m.p.h.
H. Martin (1 Martin)	76	×59.5	35.2 = 63.5	57.4	= 62.72

## CLASS B.—350 C.C.

H. Martin (1 Martin)	85.5	×59.5	32.9 = 67.9	*53.06 = 67.85
S. Bailey (2 Douglas)	61	×60	35 = 63.91	56.4 = 63.83
W. Hodgkinson (1 Caeco)	85	×60	45 = 49.7	74.8 = 48.13
S. Axford (1 Martin)	70	×90	48 = 46.6	75.0 = 48
W. Hodgkinson (1 Caeco)	85	×60	47.6 = 46.9	76.6 = 47

\*New figures for the flying mile Class B, the previous best being also Martin's, 65.97 m.p.h., made August, 1910. Martin's kilometre record, made at the same time, still stands at 68.28 m.p.h.

## CLASS C.—500 C.C.

P. Brewster (1 Norton)	79	×100	30.25 = 73.95	*48.93 = 73.57
G. Stanley (1 Singer)	85	×88	31.8 = 70.34	51.0 = 70.59
S. D. Timson (1 Rudge)	85	×88	35.2 = 63.35	56.8 = 63.38
S. Axford (2 Martin)	76	×58	35 = 63.9	57.4 = 62.72

\*New record, just beating G. E. Stanley's previous Singer figures of 73.2 m.p.h. Singularly enough, Stanley's figures for the kilometre, viz., 75.43 m.p.h., made at the same time, May, 1912, still stand as record.

## CLASS D.—750 C.C.

R. Printz (2 Bat-Jap)	85.5	×65	35.8 = 62.48	56.2 = 54
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## CLASS E.—1,000 C.C.

E. Baragwanath (2 Winit)	90	×77.5	30.4 = 73.58	49 = 73.47
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## CLASS E.—1,000 C.C. WITH SIDECAR.

G. Hunter (2 Zenith)	90	×77.5	35.6 = 62.84	56.6 = 63.6
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## Junior Scratch Race.

The Junior Five Lap Scratch Race for machines up to 350 c.c. brought out six starters. The distance was 13 miles 1,035 yards.

Bailey (Douglas) got away in wonderful style, and had already established a lead of twenty or thirty yards at the entrance of the railway straight. This was evidently too



The start of the five lap Scratch Race. S. L. Bailey (Douglas), put up a good race, but was eventually beaten by Stanley (Singer).

much for Harry Martin, who set out at once to pick up the Douglas, which he did behind the aeroplane sheds in very fine style. The first lap finished in the following order: Martin (Martin-Jap); Bailey (Douglas), 3 yards; Stanley (Singer), 100 yards; and Woodman (Humber), 100 yards.

On completing a lap, Slatter (Alecyon) turned in apparently with valve trouble. The same order was maintained for the second lap. On passing the fork Martin's long exhaust pipe came loose, and this rider pulled up, letting Bailey into first place.

On the third lap Bailey led Stanley by about 150 yards, Woodman being about a mile behind the latter. It was quite obvious, however, that the Douglas was being steadily overhauled by the Singer, and no one was therefore surprised to see only 50 yards separating Bailey and Stanley on the completion of the fourth lap.

The Singer showed no signs of slackening, and, thanks largely to Stanley's splendid riding, caught the humming Douglas on the Byfleet banking, and obtained a narrow win by only three-fifths of a second, or about 15 yards. Stanley's time from a standing start was 13m. 49½s., or at the rate of 59.4 m.p.h. Result:

1. G. E. Stanley (1 Singer)	...	...	69×80	299 c.c.
2. S. L. Bailey (2 Douglas)	...	...	61×60	350 c.c.
3. A. E. Woodman (2 Humber)	...	...	60×60	340 c.c.

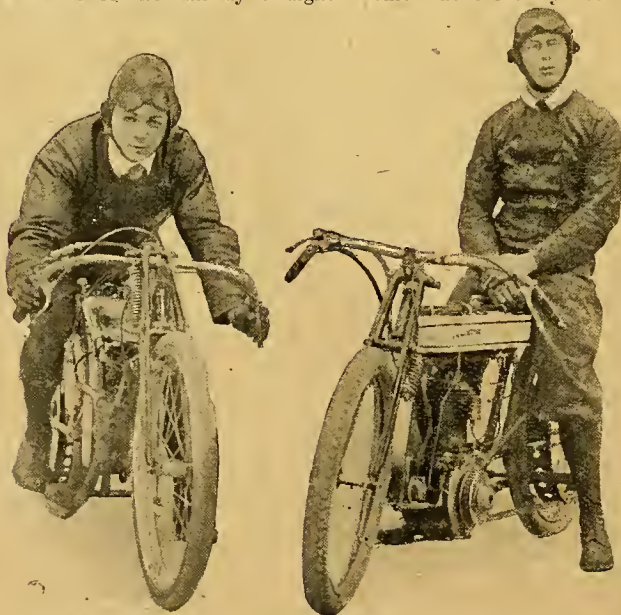
## Senior Five-lap Scratch Race.

This event was for any type not exceeding 500 c.c. Distance, 13 miles 1,035 yards. Six starters.

After his splendid riding in the time trials, Brewster (Norton) naturally started a warm favourite. The first lap was completed with Stanley (Singer) leading by about 10 yards from Brewster, and Timson about 100 yards behind, Garrett and Mills (Regal-Precisions) and Axford (Martin-Jap) forming a bunch in the rear. Another circuit brought Stanley forward considerably, so that he was now leading by a couple of hundred yards. The third lap only served to make the differences more distinct, as the next man behind Stanley was a good half-mile away. Brewster's magneto was now giving him trouble, and he therefore yielded second place to Garrett, who was being closely followed by Axford, Timson, and Mills in this order.

Except for the fact that Axford had to retire through sooted plugs in the next round, no change took place except the lengthening of the gaps between the riders. Stanley was never challenged, and steadily increased his lead, finally crossing the finishing line fully a mile in front of Garrett, while Timson was third, and Mills fourth. Result:

1. G. E. Stanley (1 Singer)	...	...	85×88	499 c.c.
2. S. F. Garrett (1 Regal-Precision)	...	...	85×88	499 c.c.
3. S. D. Timson (1 Rudge)	...	...	85×88	499 c.c.
4. H. C. Mills (1 Regal-Precision)	...	...	85×88	499 c.c.



S. L. Bailey (Douglas).

P. Brewster (Norton), who set up a new mile record.



**B.M.C.R.C. Fifth Monthly Meeting —****All Comers' Handicap.**

This was for motor cycles with or without sidecars up to 1,000 c.c., and for cyclecars up to 1,100 c.c. Eleven starters. The Carter cyclecar made its debut in this event, and was the centre of a curious crowd. It is a three-wheeler with a steel frame attached to the front axle by a transverse laminated spring arranged like the Sizaire-Naudin. Two straight leaf springs are used in the rear, the radius rods being pressed steel members of U section. The engine is an enormous air-cooled twin— $101\frac{1}{2} \times 130$  mm. = 2,102 c.c.—with cylinders arranged at  $90^\circ$ . For the purposes of the race, however, one of the cylinders had been removed, and the hole in the crank chamber covered with a cap. The inlet valve, situated immediately over the exhaust, is automatically operated. Between the cylinders is arranged a four-bladed centrifugal fan of large diameter, driven by a friction roller from the edge of a very large flywheel, which enabled the engine, even as a single-cylinder, to run quite slowly and steadily. Transmission is direct from the crankshaft to the back wheel by means of a leather V belt running over an expandable pulley, this providing the only clutch and change speed gear. Steering is by rack and pinion. A quite smart torpedo body is used with a petrol tank in the extreme "nose" thereof.

Bailey (Douglas) from the very first assumed a lead that he managed with little difficulty to hold all the way through, thanks principally to the fact that Baragwanath (Winit-Jap), who was on scratch, dropped out at the end of the second lap for some unexplained reason. He and his large engined machine (998 c.c.) were travelling at a terrific speed, and there was every indication that he would certainly overhaul the whole field quite easily up till the time that he disappeared.

The progress of the race will be apparent from the following table, which represents the positions of the riders at the end of each lap.

Lap 1.—Bailey (Douglas), Woodman (Humber), Hunter (Zenith sc.), Carter (Carter cyclecar), Garrett (Regal-Precision), Holzapfel (Holzapfel-Jap), Mills (Regal-Precision),

Printz (Bat), Baragwanath (Winit-Jap). Brewster (Norton) retired through magneto trouble.

Lap 2.—Bailey, Garrett, Woodman, Mills, Holzapfel, Baragwanath, Printz, Carter. Hunter retired at the end of this lap.

Lap 3.—Bailey, Garrett, Mills, Printz, Holzapfel, Woodman. Timson retired.

Lap 4.—Bailey, Garrett, Printz, Mills (missing fire and dropping behind), Woodman.

Result :

	mm.	c.c.	m. s.
1. S. L. Bailey (2 Douglas) ... ..	61×60	350	2 5
2. S. F. Garrett (1 Regal-Precision) ... ..	85×88	499	1 20
3. H. G. Mills (1 Regal Precision) ... ..	85×88	499	1 20

**Test Hill-climb.**

The afternoon's sport concluded with the Brooklands Test Hill-climb, for which eight entries had been received, though only three riders actually made ascents. Competitors were started on the level about 50 yards from the foot of the hill.

CLASS B.—350 c.c.

S. L. Bailey (Douglas) ... .. 33.36 m.p.h.

CLASS C.—500 c.c.

S. D. Timson (Rudge) ... .. 28.59 m.p.h.

CLASS E.—1,000 c.c.

G. F. Hunter (Zenith-Gradua) ... .. 32.46 m.p.h.

Bailey's ascent was marvellous, and its finish amongst the most sensational that has been seen at Brooklands. At the summit of the hill the ground becomes suddenly flat, and Bailey came up at such a speed that his machine completely left the ground a dozen feet before returning to terra-firma again, which it did with its rider quite unconcerned.

South's machine was geared very low indeed, but its speed was sufficient to give a very well pronounced Ballig Bridge leap.

Hunter was evidently no novice at test hill work, or, at any rate, he had no wish to go flying, for he cut out practically as soon as he reached the 1 in 4 portion. Considering this, his speed was excellent.

## Irish End-to-end Reliability Run.—Results.

The committee of the Motor Cycle Union of Ireland, Ulster Centre, having verified the timekeepers' checking sheets at the various controls, it has been found that nineteen riders qualified for gold medals with a maximum of 120 marks, and nine riders qualified for silver. F. Ruddell (Bradbury) and F. C. North (Ariel) finished 22 mins. and 20 mins. respectively before schedule, thus

exceeding the 10 mins. margin allowed, and being in consequence disqualified. Whilst sympathising with Rex Mundy, who thought the finish was situate beyond Ballycastle, and lost three marks by being early, and with Hugh Gibson, who gave away his stock of petrol to another competitor, and left himself with an empty tank, losing as a consequence five marks for being late, the committee regretted their inability to depart from the placings arrived at in accordance with the conditions.

To ascertain the winner of the Palmer Trophy, it was necessary to utilise the times at the secret check, and the placings are: 1, C. E. Murphy, Cootehill ( $3\frac{1}{2}$  h.p. Triumph), total variation from schedule 35s.; 2, J. Stewart, Belfast ( $3\frac{1}{2}$  h.p. Triumph), 1m.; 3, J. Lavery, Belfast ( $3\frac{1}{2}$  h.p. Ariel), 1m. 45s.

The following riders were successful, in addition to those mentioned in last week's unconfirmed list (page 321): Gold medal, W. Kirk (5 h.p. Indian); silver medals, R. Mundy ( $2\frac{3}{4}$  h.p. Douglas), H. Gibson ( $3\frac{1}{2}$  h.p. Bradbury), H. P. Mooney, and D. Gray ( $3\frac{1}{2}$  h.p. James).

Special prize for best lightweight performance.—E. Clark ( $2\frac{3}{4}$  h.p. Douglas).

Special prize for best sidecar performance.—H. Gibson ( $3\frac{1}{2}$  h.p. Bradbury).

Special medal, presented by Dublin District Club.—C. E. Murphy ( $3\frac{1}{2}$  Triumph).

**BIRMINGHAM M.C.C. SANGSTER TROPHY TRIAL.**

The Sangster Trophy trial results are as follows: A. D. Arter ( $3\frac{1}{2}$  James and sidecar) and W. H. Egginton ( $3\frac{1}{2}$  New Hudson and sidecar) lost no marks, bracketed first. Each is awarded a gold medal, and will hold the trophy for six months. T. Pollock ( $3\frac{1}{2}$  James) last 30 secs.; and S. Smith ( $3\frac{1}{2}$  Norton) lost 1 minute.

On Saturday next, 27th inst., a club reunion will be held at Stratford-on-Avon. Members will start from King's Heath tram terminus, and ride to Stratford *via* Alcester.



Streatham and District and Woolwich, Plumstead, and District M.C.C.'s Inter-team Trial. The competitors' machines paraded by the road side during the luncheon stop. Capt. Nicholl, the judge, is seen in the foreground.



# Sutton Coldfield A.C. Members' Hill-climb.



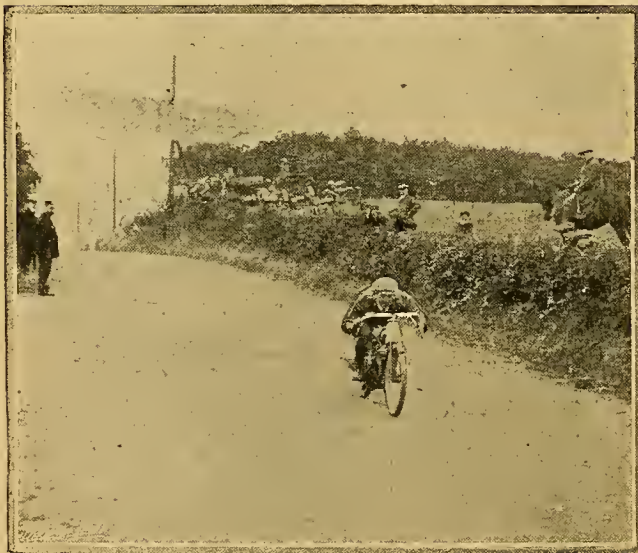
H. C. Newman (Ivy-Precision) with W. Creyton as passenger in an extraordinary position.

Hints Hill, near Tamworth, was this year's venue of the Sutton Coldfield annual climb. Coalport Hill being at present in a quite impossible condition, the search for a suitable test ended in the choice of a hill without the usual bend, but with a stiff gradient. The well tuned up machines of the "crack" riders, of course, made some very fast times, and it was pleasant to go through an afternoon's good sport without the slightest mishap to mar the enjoyment. In Class II. H. C. Newman (34 $\frac{1}{2}$ s.) (3 $\frac{1}{2}$  Ivy Precision) really made fastest time, but was disqualified owing to his machine not quite conforming to regulations—though of the standard "Ivy" model. Class VI. was won by F. Shakespeare (8 Rex-Jap) in the fastest time of the day. He also made fastest time in the sidecar class. This rider had never before ridden in a motor cycle competition.

Results (subject to confirmation):

## CLASS I.—LIGHTWEIGHTS.

	Time.	Formula.
P. W. Owen (37 $\frac{3}{8}$ s.) (2 $\frac{1}{2}$ Zenith) ...	1	1
F. S. Whitworth (2 $\frac{3}{4}$ Douglas) ...	2	3
V. Busby (2 $\frac{3}{4}$ Humber) ...	3	2



W. Creyton (2 $\frac{1}{2}$  h.p. Humber) crossing the finishing line.

## CLASS II.—SINGLES UNDER 520 C.C.

J. Woodhouse (3 $\frac{1}{2}$ Regal-Precision) ...	1	1
H. G. Dixon (3 $\frac{1}{2}$ New Hudson) ...	2	4
L. A. Bees (3 $\frac{1}{2}$ L.M.C.) ...	3	2

## CLASS III.—MULTI-CYLINDERS UNDER 750 C.C.

F. S. Whitworth (37 $\frac{3}{8}$ s.) (4 Matchless) ...	1	1
J. St. John (6 F.N.) ...	2	2

## CLASS V.—T.T. UNDER 500 C.C.

K. Clark (34s.) (3 $\frac{1}{2}$ Corah) ...	1	2
H. C. Newman (3 $\frac{1}{2}$ Ivy-Precision) ...	2	5
J. Woodhouse (3 $\frac{1}{2}$ Regal-Precision) ...	3	1

## CLASS VI.—SINGLES OR TWINS OVER 520 C.C.

F. Shakespeare (34s.) (8 Rex-Jap) ...	1	2
H. Kenway (8 Matchless) ...	2	6
T. Pollock (3 $\frac{1}{2}$ James) ...	3	1

## CLASS VIII.—SINGLES AND SIDECARS.

H. C. Newman (45 $\frac{3}{8}$ s.) (Ivy-Precision) ...	1	1
T. Pollock (3 $\frac{1}{2}$ James) ...	2	3
J. Woodhouse (3 $\frac{1}{2}$ Regal-Precision) ...	5	2

## CLASS IX.—UNLIMITED AND SIDECARS.

F. Shakespeare (41 $\frac{3}{8}$ s.) (8 Rex-Jap) ...	1	3
H. C. Newman (3 $\frac{1}{2}$ Ivy-Precision) ...	2	1
T. Pollock (3 $\frac{1}{2}$ James) ...	3	2



R. H. Edwards (Triumph) nearing the summit. The photograph conveys a good idea of the nature of the hill.

## FRAMED ADDRESS TO MR. F. STRAIGHT.

The framed address which F. Dover and other readers suggested should be presented to F. Straight (late secretary of the A.C.U.) was forwarded to the recipient this week. The address reads as follows: "We, the undersigned, desire to express our appreciation of the valuable services rendered by you to the motor cycle pastime and industry during the ten years you acted as secretary to the Auto Cycle Union, and we request your acceptance of this address as a slight mark of our esteem."

Alf. Bednell.  
H. Belcher.  
C. C. Cooke.  
Fred Dover.  
E. St. Clair Duncan.  
W. Grew.  
Jack Haslam.  
Victor Avison Holroyd.  
F. Hulbert.  
C. E. Murphy.

E. Nelson.  
J. R. Nisbet.  
Julian W. Orde.  
S. W. Phillpott.  
W. Pratt.  
Shep Sawyer.  
M. J. Schulte.  
J. Stuart Shaw.  
Geoffrey Smith.  
H. W. Staner.



## SPEED TRIALS AT PORTHCAWL.



Competitors for the All-comers' Handicap at Porthcawl lined up for the start. Observe the starting planks to prevent the wheels sinking into the wet sand.

Owing to the wetness of the sand and the protest of the competitors, a start could not be made in the motor cycle events until 6 p.m. on the 20th inst. Some very good times were made considering the heavy state of the track. The distance was one mile. Before the competition could be finished the sea came up again, and the last race was won in about 9in. of water. In the Sidecar Class two riders stuck in the soft sand. Newsome was the most successful rider, annexing two firsts. His speed was upwards of 50 m.p.h. Results:

CLASS I.—Machines with Cylinder Capacity not exceeding 350 c.c.

Rider and machine.	Time.
1. Kickham (2½ Douglas) ... ..	1m. 15½s.
2. Weatherilt (2½ Zenith) ... ..	1m. 20½s.
3. Britton (2½ Douglas) ... ..	1m. 27½s.

CLASS II.—Machines not exceeding 560 c.c.

1. Newsome (3½ Triumph) ... ..	1m. 11s.
2. Lewis (3½ Premier) ... ..	1m. 14½s.
3. Kickham (2½ Douglas) ... ..	1m. 15½s.

CLASS III.—For Machines with Cylinder Capacity not exceeding 1,000 c.c.

1. Newsome (3½ Triumph) ... ..	1m. 14s.
2. Barnes (8 Zenith) ... ..	1m. 17½s.
3. Kickham (2½ Douglas) ... ..	1m. 24½s.

CLASS VI.—Machines with Cylinder Capacity not exceeding 350 c.c.

1. J. J. Mathias (2½ Humber) ... ..	walked over.
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CLASS VII.—Machines with Cylinder Capacity not exceeding 560 c.c.

1. R. M. Lewis (3½ Premier) ... ..	1m. 16½s.
2. J. C. Moore (3½ Rudge) ... ..	1m. 17½s.
3. J. J. Mathias (2½ Humber) ... ..	1m. 27½s.

CLASS IV.—Machines with Cylinder Capacity not exceeding 1,000 c.c. with Sidecar Attachment.

1. E. Chapman (5-6 Zenith) ... ..	2m. 37½s.
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Barnes and Wade stuck in the sand.

CLASS VIII.—Machines with Cylinder Capacity not exceeding 1,000 c.c.

1. J. C. Moore (3½ Rudge) ... ..	1m. 17½s.
2. E. Chapman (5-6 Zenith) ... ..	1m. 30½s.

## CLUB NEWS.

## Mersey M.C.

An open hill-climb will be held at Pen-y-ball, Holywell, on August 3rd at 3 p.m. There will be classes for motor cycles and cyclecars. The hill is straight, the average gradient 1 in 7, and the steepest 1 in 4. The surface will be in good order. Entries must reach the hon. secretary, Mr. S. W. Carty, 5, Redcross Street, Liverpool, not later than the 30th inst.

## Dublin and District M.C.C.

An open reliability trial will be held on August 5th and 5th. Routes: First day—Dublin, Fermoy, Mallow, Killarney, Kenmare, Glengariffe (229 miles). Second day—Glengariffe, Inchgeela, Cork, Cashel, Dublin (214 miles). Competitors must assemble each day at 5.30 a.m. An average speed of 20 m.p.h. must be observed. There will be several valuable prizes. Entries close on the 31st inst. Application should be made to Mr. F. J. Walker, hon. secretary, 9, Grafton Street, Dublin.

## The Motor Cycling Club.

A standard reliability hill-climbing and brake testing trial will be held on August 3rd and 5th. The route will be Hungerford, Marlborough, Trowbridge, Wells, Bridgwater, Porlock, Lynmouth, Lynton, Parracombe, and Barnstaple. Competitors will be expected to make clean ascents of both Porlock and Countisbury Hills, and stop not more than three times on the test descent.



Lincolnshire M.C.C. Speed Trials. L. W. Forington (Indian) passing the finishing post. He made fastest time and gained second place on formula.



## Club News.—



Streatham and District, and Woolwich, Plumstead and District M.C.C.'s inter-team trial. H. A. Collier is seen in a new role, starting the competitors.

## Evesham M.C.

On the 17th inst. a petrol consumption trial was held over a route of thirteen miles. The results were obtained by the A.C.U. formula, and the figures given are simply figures of merit:

1. F. Sharpe (3½ B.S.A.)	...	...	43.72
2. E. Holloway (3½ Triumph)	...	...	41.13
3. A. White (3½ Triumph)	...	...	38.36

## Stratford-on-Avon and District M.C.C.

Result of the hill-climb held at Ilmington Hill on the 13th inst:

Touring Singles.—1, H. W. Wynn (Rudge), 24½s.; 2, W. Ball (Rudge), 27½s.; 3, F. Drew (Rudge), 31s.

T.T. Singles.—1, F. Guyver (Triumph), 22½s.; 2, Heiss (Rudge), 24½s.; 3, R. Holyoake (Triumph), 26½s.

Open.—1, H. W. Wynn (Rudge), 24s.; 2, Heiss (Rudge), 24½s.; 3, F. Drew (Rudge), 24½s.

## Westmorland M.C.C.

Speed trials were held last week in Lowther Park, Penrith, by kind permission of the Earl of Lonsdale. Results:

Lightweight Class.—1, S. W. Phillpott (2½ Humber); 2, N. H. Brown (2½ Hazlewood); 3, R. M. Chaplow (2½ Humber).

Single-cylinder Class.—1, L. Pierce (3½ Corah); 2, W. B. Little (Rudge); 3, V. Harsmann (Singer).

Twin-cylinder Class.—1, L. S. Parker (Scott); 2, B. Jeffery (Bat); 3, J. W. Nelson (Scott).

Sidecar Class.—1, F. Rees (Rudge); 2, E. Burras (Zenith).

Old Crocks' Class.—1, J. Braithwaite (3½ Braithwaite).

## Torbay and District M.C.C.

A club hill-climb was held on the 20th inst. The following are the results on time:

## 500 C.C. OR OVER.

	m.	s.
1. R. Broadbear (3½ Premier) ...	0	56½
2. E. Hancock (3½ Premier) ...	1	2½
3. F. Edwards (8 Matchless) ...	1	3½

## UNDER 350 C.C.

1. A. Powell (2½ Enfield) ...	1	9½
2. W. P. Harding (2½ Douglas) ...	1	13½

## PASSENGER CLASS.

1. F. Edwards (8 Matchless sc.) ...	1	49½
2. — (6 Zenith sc.) ...	2	2½
3. — Williams (3½ Premier sc.) ...	2	53½

In the passenger class Edwards carried Mr. Davey, the heaviest member, who weighs about sixteen stones.

Miss Arden made a fast ascent.

R. Broadbear made a brilliant dash on his Premier and easily made fastest time of the day.

PII

## Doncaster and District M.C.C.

A flying kilometre handicap was held at Stapleton Park, near Pontefract, by the kind permission of Mr. J. Hope Barton, of Stapleton Park. The winner was the competitor who made the best increase on his previous time up to and including two and a half per cent. Results: 1, W. Wagstaffe (3½ h.p. Premier); 2, L. Baker (3½ h.p. Rex); 3, R. Eddell (5 h.p. Matchless). A special prize for the fastest time of the day was won by J. H. Wilkinson (5 h.p. T.T. Matchless), his time being 32½s.

## Essex M.C.

A joint gymkhana was held at King's Oak, High Beech, Essex, on the 20th inst., in conjunction with the Walthamstow M.C. Results:

Potato picking.—F. A. Applebee (3½ T.T. Scott).  
Tilting at the rings, lemon cutting, and Turk's head cutting.—F. W. Applebee (2½ Centaur).  
Musical chairs.—C. Pearson (2½ Douglas).  
Belt changing.—C. Pearson (2½ Douglas).  
Target pegging.—J. A. Campbell (3½ Rudge and sc.).  
Apple hobbing.—G. F. Gray (3½ Rudge).

## Inter-club Team Trial.

The following clubs sent teams to compete in the inter-club reliability trial held on a fifty-eight mile course in West Kent: Woolwich and District, Purley and District, Streatham and District, Putney and District, Brookdale and South-East London. The result was a win for the Brookdale Club, seven riders out of nine negotiating the whole course within schedule time. F. Cox (A.C.), J. Holt (3½ Pratt), E. M. Oliver (3½ Triumph), H. A. Cooper (3½ Bradbury), R. Croucher (3½ Kerry-Abingdon), C. Cakebread (3½ Triumph), J. Southgate (3½ Matchless), W. Guiver (3½ Rudge), and F. Bowes (3½ B.S.A.) represented the club.

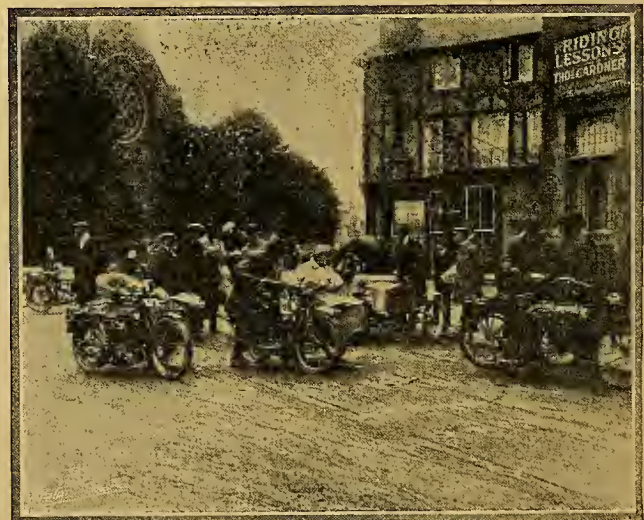
## Sheffield and Hallamshire M.C.C.

A flexibility hill-climb was held at Stanington on Saturday last. Results:

	Diff. between fast and slow climbs.
1. J. Haslam (6 Zenith) ...	3m. 45s.
2. F. Donovan (6 Zenith) ...	3m. 44½s.
3. S. Sawyer (3½ Premier) ...	3m. 12s.
4. J. Carter (2½ A.J.S.) ...	2m. 5½s.

The official results of the Sheffield-Holyhead-Sheffield reliability trial are:

	Lost marks.
1. { D. Bradbury (3½ Norton) ...	0
1. { J. Haslam (6 Zenith) ...	0
1. { T. Durant (3½ Norton) ...	0
4. F. Dover (3½ Premier) ...	1
5. R. Garnett (6 Matchless) ...	2



North Middlesex M.C.C. Open Trial. A general view of the start at the Old Gatehouse, Highgate.



## Club News.—

**Cumberland County M.C.C.**

The reliability trial to Harrogate will take place on the 28th inst. instead of August 4th as previously arranged.

**Northamptonshire M.C.C.**

The annual non-stop reliability trial was held on the 13th inst. over a circular course in the vicinity of Cogenhoe. The prizewinners were: 1, C. T. Underwood (3½ h.p. Bradbury). Wren silver challenge trophy and gold medal; 2, A. J. Osborne (3½ h.p. Triumph); 3, R. P. Seal (3½ h.p. Triumph).

**Wolverhampton M.C.C.**

A reliability trial for the Corke Challenge Cup will be held on the 28th inst. The course will be by way of Bewdley, Ludlow, Knighton, Bishops Castle, Church Stretton (one and a half hour's stop for lunch), Dorrington, Shrewsbury, Ironbridge, Wellington, Market Drayton (stop for tea, one hour), Newport, to tram terminus, Tettenhall. Competitors will be timed at the rate of 20 m.p.h.

**Nottingham and District M.C.C.**

The results of the 100 miles reliability trial for the Dennis Bayley Challenge Cup were as follow: 1, Geo. Brough (Brough), time error, 10m. 59s., Challenge Cup and gold medal; 2, N. O. Soresby (Rudge), 30m. 3s., gold medal; 3, J. Richards, 36m. 7s., Wood-Milne tyre. Only seven finished out of twenty-two starters, the course being over the worst of the Derbyshire hills.

**Manchester M.C.**

An open twelve hours' reliability trial will be held on 3rd August. The course will be one of about 200 miles in length, but the actual route will not be announced until the morning of the trial. The maximum running time for the journey will be at the rate of eighteen miles per hour and the minimum twenty miles per hour. Drivers must proceed cautiously through towns and villages and show consideration to other users of the road, or they will render themselves liable to disqualification. Entries must be sent direct to the trials hon. secretary, Mr. C. E. Kettle, c/o Lookers, Ltd., Hardman Street, Deansgate, Manchester, not later than Saturday, 27th inst.

**Purley and District M.C.C.**

A novel contest was run off for passenger machines only on the 13th inst., over a course of about sixty miles, including six test hills—Marlpit Lane, Coulsdon; Wray Lane, Reigate; Pebblecombe Hill, Bletchworth; Coast Hill, Dorking; White Down Hill, Abinger; and Box Hill. The only clean non-stop run was made by L. F. Ebbutt (5-6 A.C. Sociable) who thus wins the captain's gold medal, a silver one presented by the secretary falling to C. Mason, and W. Leigh being third.

**Crossgates and District M.C.C.**

A reliability trial was run off on the 13th inst. The course was to Otley, Blubberhouses, Pateley Bridge, Ripon, Knaresborough, Wetherby, back to Whitkirk, the total distance being about eighty miles. The results were:

		Error fast or slow.
1.	H. Whitfield (3½ Triumph) ...	1m. 10s.
2.	J. Stuart White (2½ A.J.S.) ...	1m. 24s.
3.	H. and E. Haswell (3½ Bradbury sc.) ...	1m. 42s.
4.	F. Crosthwaite (6 Matchless sc.) ...	4m. 27s.
5.	T. Wilkinson (6 Matchless) ...	4m. 55s.
6.	J. Tattersall (3½ Bradbury sc.) ...	8m. 45s.

**Taunton and District M.C.C.**

The annual members' hill-climb was held on Buncombe Hill on Thursday, the 11th inst. The hill is 1,380 yards long, and has one bad corner, where the gradient is 1 in 5, otherwise the average is about 1 in 8. The timing was done by aid of the telephone, and was highly satisfactory. There were five classes, for which seventy-five entries were received. Results:

**CLASS I.—LIGHTWEIGHTS UP TO 360 C.C.**

	Rider and machine.	M. S.
1.	A. H. Knight (2½ Humber) ...	1 42½
2.	T. Marks (2½ Motosacoche) ...	2 9½
3.	R. C. Westlake (2½ Enfield) ...	2 18

**CLASS II.—MACHINES ABOVE 360 C.C.**

1.	W. E. Phillips (3½ Triumph) ...	1 19
2.	G. Wright (3½ Triumph) ...	1 24½
3.	T. H. Birdsall (3½ Premier) ...	1 28½

**CLASS III., SECTION I.—LIGHTWEIGHTS UP TO 360 C.C.**

1.	E. R. Norton (2½ Enfield) ...	1 50½
2.	H. F. Potter (2½ Enfield) ...	1 54½
3.	T. Hood (2½ Douglas) ...	2 22½

**CLASS III., SECTION II.—MACHINES OVER 360 C.C.**

1.	E. J. Hancock (3½ T.T. Premier) ...	1 16½
2.	W. E. Phillips (3½ Triumph) ...	1 20½
3.	W. F. Stone (7 Peugeot) ...	1 23½

**CLASS IV.—FLEXIBILITY (Fast and Slow Climbs on same Gear) Difference.**

1.	W. G. Potter (3½ P. and M.) ...	5 30½
2.	A. G. Bermingham (3½ P. and M.) ...	5 4½
3.	T. H. Birdsall (3½ Premier) ...	3 38½

**CLASS V.—SIDECARS.**

1.	W. E. Phillips (3½ Triumph) ...	1 49½
2.	W. H. Maunder (5 Clyno) ...	2 19
3.	F. Copplestone (5 Rex) ...	2 45

**Harrogate and District M.C.C.**

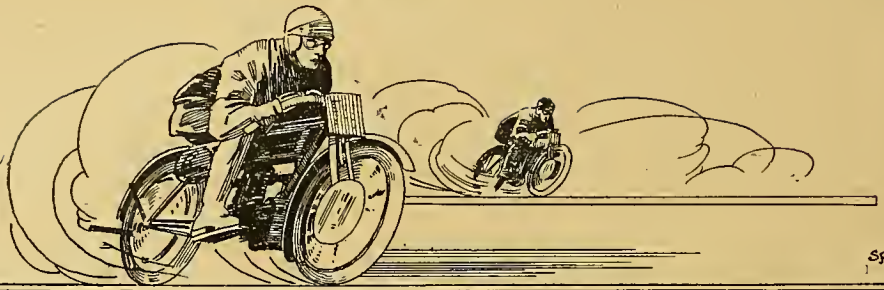
The annual reliability trial was held recently over a very difficult course of approximately 300 miles. The following well-known hills had to be climbed: Greenhow Hill, Kidstone Pass both sides, Kirkstone Pass from Ambleside, Yorkes Folly, and Norwood Edge. Thirteen started, but only seven completed the course. The competition was run for the £25 trophy which had been presented to the club by Messrs. Muratti. The result was as follows: T. C. Atkinson (3½ h.p. T.T. Triumph), W. Fawcett (2½ h.p. A.J.S. two-speed), and H. W. Fortune (3½ h.p. Brown two-speed), lost no marks and tied for first place; G. Hill (3½ h.p. Scott two speed), failed at Kidstone second day and late at checks, lost 26 marks; E. R. Davies (6 h.p. Matchless), continuous tyre troubles, lost over 100 marks; S. Clay (3½ h.p. Triumph), failed on Kirkstone and Kidstone Pass and late at checks lost 57 marks; J. E. Brooke (3½ h.p. Triumph three-speed) gear troubles, lost over 100 marks.



A group of members of the Haverstock M.C.C.



## QUESTIONS & REPLIES



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Auxiliary Motor.

**?** I am trying to obtain information regarding auxiliary motors. Can you oblige me by answering the following questions: (1.) Can you recommend an auxiliary motor to fit on to a push cycle with fly nuts? If so, please state price (about), where obtainable, and power. (2.) Can you describe the method of transmission? (3.) Have you any knowledge of its speed and hill-climbing power?—G.H.

and 2.) We emphatically do not recommend an engine attached to a pedal bicycle. A pedal bicycle is not meant to be mechanically propelled, and would be most uncomfortable under these conditions. In preference to any attachment of the description mentioned, we should advise the purchase of one of the well-known lightweight motor cycles, of which there are several examples on the market.

### Engine Won't Run Slowly.

**?** (1.) I have a 2½ h.p. machine about five years old, and I cannot get it to run slowly. The slowest speed I am able to go without misfiring is about 18 m.p.h. I have tried stopping up some of the air holes of the B and B. carburetter (old pattern, converted to h.b.c.), but this has little effect other than heating the engine more rapidly. The extra air lever I keep shut off all the time. (2.) Would fitting a smaller jet have the same effect on the running of the engine as closing the throttle? (3.) The engine overheats very quickly in spite of the fact that I drive on as little throttle opening as possible and take in as much air as I can, but, as mentioned above, this latter is not possible to any extent unless I am going fast on account of misfiring.—A.B.

(1.) The engine mentioned is of small size with light flywheels, and it is always difficult to make these small engines run slowly. You should, however, be able to run slower than 18 m.p.h. Probably the latest B. and B. hand-controlled carburetter would improve matters. (2.) No; fitting a smaller jet would reduce consumption and power of the engine, but would not have the same effect as closing the throttle. It would, however, enable you to run more slowly. (3.) The overheating may be due to many causes, but probably the timing gear is worn as it is an old engine, and the exhaust valve lift is insufficient.

### Woolwich to Weymouth.

**?** Will you please give me the best route from Woolwich to Weymouth? As I am bad at following routes, please make it as explicit as possible.—T.H.

Your best route would be as follows: Woolwich, Blackheath, Catford Bridge, straight along the Bromley Road till you find the turning to Beckenham Hill, pass close by Beckenham Station, straight on to East Croydon. Just before reaching East Croydon Station turn left and go as far due south as you can. At the end of this road turn right and follow the road, which will lead you eventually into the main Brighton Road, close to Purley. Go straight on down the Brighton Road till you reach Redhill, here turn right and go through Reigate, Dorking, Gomshall, Shalford, Guildford, and over the Hog's Back to Farnham, Alton, Winchester, Ringwood, Wimborne, Dorchester, to Weymouth. For full and exact details of this route we should recommend you to become a

5s. touring member of the Auto Cycle Union, 89, Pall Mall, S.W., and apply to their Touring Department.

### Liners in Tyres.

**?** Would you be good enough to say: (1.) What the advantages and disadvantages are of fitting "liners" (in between the inner tube and outer cover, I understand) to motor cycle tyres? (2.) Do they really minimise the risk of puncture to any great extent? (3.) Do they ever cause the outer cover to "creep"? (4.) Are they really worth the time and expense of fitting?—H.G.S.

(1.) Advantages: Liners prevent puncturing. Disadvantages: They slightly slow machine owing to extra thickness of tread, and cause a certain amount of heat. (2.) Undoubtedly, if properly fitted and made of the right material. (3.) No, they cannot cause cover to creep. (4.) Yes, we think they are worth the time and expense of fitting, particularly if the machine be ridden in districts where the road surface is of a flinty nature.



ON THE SHORES OF DERWENTWATER.

Three Burnley motor cyclists on the return journey after a thousand miles holiday ride to John-o'-Groat's. The machines are two Douglas, 2½ h.p. 1910 pattern, and one 3½ h.p. Rex. Even the rugged pass and storm-swept roads of Glencoe were successfully negotiated, the return being made by Fort William and the coast route.



## Lubrication.

**?** I should be most grateful for your advice regarding the lubrication of my 6 h.p. twin J.A.P. engine. Would you kindly tell me: (1.) Whether you consider thirty spots a minute sufficient, as this is a hilly country? The engine appears to get enough, as it sometimes smokes, and on taking off cylinders I found plenty of carbon deposit on them and on heads of pistons. On the other hand I am not troubled with sooted plugs. (2.) I am inclined to attribute the overheating to defective carburation, it being impossible to give enough extra air with the type of carburetter with which it is fitted. Would this have the effect of causing the crank case to get so hot after a few miles that one can often barely hold one's hand upon it, and cause the engine to slow on quite ordinary hills?—R.W.C.

(1.) It is very difficult to give any fixed rule with regard to lubrication. You must be guided entirely by the behaviour of the engine. If you set the lubricator to give thirty drops per minute, and the engine smokes occasionally, probably the amount is too great. (2.) It is quite possible that the overheating might be due to imperfect carburation as you suggest. The crank case gets hot through conduction.

## A Model Specification.

**?** (1.) Among the many advertisements and illustrations of motor cycles, I do not remember seeing one of a three-speed chain-driven model. If there is any inherent objection to the type I shall be glad to know. I am considering the question of a motor bicycle, and for my purposes I need one that would require the minimum of attention and be ready for use in all weathers. (2.) The specification I have thought of includes 3½ h.p. Precision engine, Sturmey-Archer gear, Roman rims and spokes, Druid forks, Renold chain-drive in some form of cover. Is this a design from which one may expect hard work and plenty of wear, a light sidecar and eight stone passenger being carried? (My weight is eleven stone.) (3.) The by-roads of East Dorset are, in winter time, disgraceful. Would it be better to fit 2½ in. instead of the usual 2¼ in. tyres, or would the former slow the machine too much? (4.) From point of view of economy in petrol, how does an automatic carburetter compare with an adjustable one?—E.H.G.B.

(1.) There is no three-speed chain-driven model on the market except the No. 7 Chater-Lea. This machine is more especially for sidecar use. There is, however, no possible objection to this type. (2.) Your specification is a very practical one, and should be quite capable of taking a light passenger and sidecar. The three-speed gear mentioned is not made for chain transmission, and it would not be advisable to use a chain drive with this gear. (3.) By all means fit 2½ in. tyres if there is sufficient clearance. These will not slow the machine to any great extent. (4.) As regards petrol consumption there is little to choose between the automatic and hand controlled carburetter.

## Machine for Commercial Work.

**?** (1.) What horse-power would be advisable for travelling (commercially) in all parts of Devon and Somerset? (2.) Would a single-cylinder be preferable to a twin? (3.) Would it be possible to carry samples (weight about 20 lbs.) on carrier without their getting a lot of shaking? (4.) What make or makes would you advise? (5.) About what would be the cost of running and depreciation of machine, cycling about 200 miles a week?—W.S.P.L.

(1.) A 3½ h.p. with a change-speed gear would do what you require. (2.) Whether you have a twin or a single-cylinder is a matter really of taste. (3.) There will undoubtedly be a certain amount of shaking on the carrier, but the only thing to do is to have the box in which the samples are carried sprung in some way or other. (4.) We regret we cannot recommend any particular make, but if you care to ask our advice about any one which you think would suit your purpose, we shall be glad to advise you concerning it. (5.) The cost of running a 3½ h.p. would be about 2d. per mile, and 5 to 6 h.p. about 1d. a mile. The depreciation depends upon the make of machine, as some makes depreciate more than others.

## Belgium and Germany.

**?** I should like to take my Douglas motor cycle with me to Zeebrugge (Belgium) for my fortnight's holiday. (1.) Should I be exempted from duties if I joined the A.C.U., and would they arrange my passports and give me the necessary instructions? (2.) Are the roads good (equal to the English ones)? (3.) Should I have to pay duty again at the German frontier? (4.) What is the price of petrol per gallon in Belgium? (5.) Should I have to take spare tubes with me on this trip? In England I never carry any.—D.H.W.

It would be advisable for you to join the Auto Cycle Union, or some similar body, and they will help you greatly in your journey. (1.) Membership of the A.C.U. exempts you from paying duty, and they will arrange your driving licences before you start. (2.) The roads in Belgium are likely to be bad, but there is a path at the side, which is not supposed to be used by motor cyclists, but we should advise you to make use of it. Down the Rhine the roads are exceptionally good—quite as good as, if not better than, those in England. (3.) At the German frontier, or before you leave England, you will have to pay a duty, as this is one of the countries which does not allow motor cycles in free. You also have to take out a "steuernkarte," which costs a few shillings, and is available for a few days or a month. (4.) The price of petrol is 1s. 8d. a gallon in Belgium, and less in Holland than in England. (5.) You would do better to take spare tubes, as you might have difficulty in getting the correct size abroad.

## EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"H.A.L." (Transvaal).—8 h.p. 6 cwt. cyclecars for rough roads of South Africa. Reliability and petrol consumption.

"Friction" (Forfar).—Model K 1912 Douglas Clutch and change speed gear.

"O.B.P." (Aldershot).—G.W.K. cyclecar. Reliability and hill-climbing.

If "H.W.S." (Oxford), "J.M.E." (Lexden), "C.H.M." (Weston-super-Mare), "A.B.C." (Bromley), "J.G." (Bromley), "J.S." (Scunthorpe), "G.H.J.S." (Uckfield), "C.P." (Ashton-under-Lyne), "A.E.M." (Banff), "Dako" (Cardiff), "J.A." (East Ham), and "S.G.T." (Leek), will comply with our rules and send stamped addressed envelopes, they will receive answers to their queries.



Grosvenor M.C. hill-climb at Heyden Bridge. — Wood (Levis) travelling well at the start.

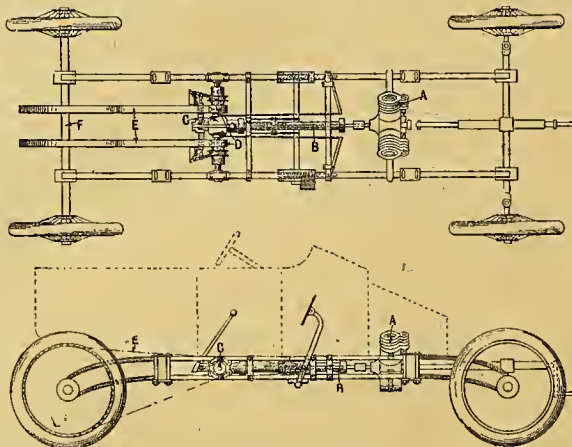


**A Belt Punch.**

This belt punch, which is adapted to hold securely belts of varying sizes, consists of a frame A having flat sides. Screwing through one side is the drill or punch, which is operated by a screw B. The belt C is held in position by a plate D, which is recessed to receive the sides of the frame A as illustrated, the plate being moved to hold the belt by means of a second screw device E.—R. T. Shelley, No. 19,310, 1911.

**A Light Vehicle.**

The accompanying plan and elevation show the general arrangement of a light car, the engine A of which drives, by a propeller-shaft B, to a counter-shaft C, provided with a pair of expanding pulleys D, driving by belts E to the rear axle F, the tension of the belt being regulated by moving the counter-shaft C bodily. This counter-shaft is carried on runners between guides. The details of construction are not suitable for reproduction in the form of an abridgment, but are fully set forth in the specification.—F. W. Vallat, No. 91, 1911.

**A New Sidecar.**

Mr. E. Bowser, who claims to be the original designer and maker of the solid reed cane sidecar body, has commenced business on his own account at 50, Park Lane, Leeds. He is marketing a new pattern sidecar.

**Parts for Old Pattern Werners.**

We occasionally receive enquiries from readers who possess old pattern Werner motor bicycles, and who are in need of spare parts. They will be interested to know that they can obtain parts for every type of Werner motor bicycle if they communicate with The Car Agency, Ltd., 175-176, Piccadilly, W.

**Accessories—Deferred Payments.**

Hitchen's Motor Exchange, Morecambe, inform us that they are relinquishing their accessories trade and disposing of the stock at big reductions. A feature of the business during this year has been the sale of machines on deferred payments, from 1 1/4 to 2 1/2% being charged for the accommodation according to the length of time over which the amount is spread.

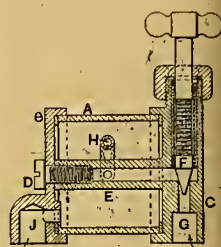
**Imitation Jets.**

We are again asked by the makers of the B. and B. carburetter, Brown and Barlow, Ltd., to point out to readers that there are several imitations of the genuine Brown and Barlow jets on the market. As these in many cases will not fit their carburetters at all, they find it necessary to warn motor cyclists against buying them. The cases of genuine B. and B. jets have "Brown and Barlow, Ltd., Birmingham," on the outside, whilst the imitation ones have simply "Jets for B. and B. carburetters."

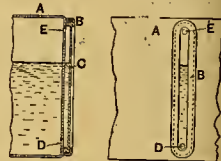
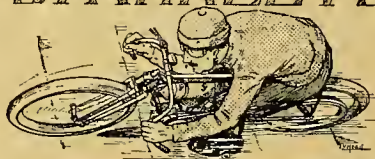
**A Sight-feed Lubricator.**

In this device the glass cylinder A is arranged horizontally, being clamped between end plates B C by means of a stud D screwing in a hollow boss E carried

by the end plate C. The end plate C is formed to receive a needle valve F, which is provided with a screw thread for adjustment purposes, a locking device (not shown) being fitted. The oil, which may be either pressure fed or induced by the suction in the crank case, passes in at G, and travels along the tubular boss E and through a tube H, where by means of the glass cylinder it can be readily seen, passing to the engine through the passage J.—W. Douglas, No. 23968, 1911.

**A Petrol Gauge.**

To the side of the tank A is attached, by riveting or otherwise, a frame B having a transparent diaphragm C. The enclosed chamber thus formed communicates with the interior of the tank by holes D E, resulting in the level in the gauge always corresponding with that in the tank.—C. A. Allison (H. and A. Dufaux et Cie.), No. 6,443, 1912.

**SPARKLETS****A Locally-built Mount.**

The machines ridden by W. Hodgkinson and H. Potter, who secured first and second places in the five miles open handicap at the Cambridge Charity Sports on the 4th inst., are made by the Cambridge Automobile and Engineering Co., Ltd., 21, Hobson Street, Cambridge, and are called the "Caeco." The engine, which is manufactured by the above firm, is a single-cylinder 85x85 mm., and the machine is built on standard lines with a dropped frame, chain driven, magneto, stand, and carrier.

**Scientific Selection of Lubricants.**

The Stern Sonneborn Oil Co., Ltd., make use of a very scientific testing machine for the purpose of selecting the most suitable qualities of lubricant for various kinds of work. The speed of this machine can be varied to produce the equivalent of from 50 to 3,000 r.p.m., and the pressure on the bearing surfaces can be varied from 1 lb. to 750 lbs. per square inch. At the same time the temperature can be raised from that of the frictional surfaces, when at rest, to about 850°F. This machine can be inspected at the offices of the firm, Royal London House, Finsbury Square, E.C.

**Collapsible Luggage Valises.**

Bright and Hayles, 73, Church Street, Camberwell, S.E., claim to be the originators of the collapsible metal luggage carriers and valises, having placed the Colapsi on the market in May, 1909.

**Catalogues Received.**

The catalogue issued by Messrs. R. G. Nye and Co., 16, Hampstead Road, Tottenham Court Road, London, W., shows that they specialise not only in complete machines, new and second-hand, but also in engines, gears, and many other things. Any motor cyclist desiring to fit a new engine can obtain a good price for his old one in exchange. The repair department undertakes all kinds of repairs and replacements, converts old machines to magneto ignition, and cuts down frames, etc.

This is the first year Alfred Dunhills, 359-361, Euston Road, N.W., have issued a separate catalogue for motor cyclists. It is a publication well worthy of such a firm. A speciality is made of motor cycle clothing, and a section is devoted to lady's clothing and headgear. Numerous accessories are also included, and not the least interesting part of the book is a trouble-hunting table.

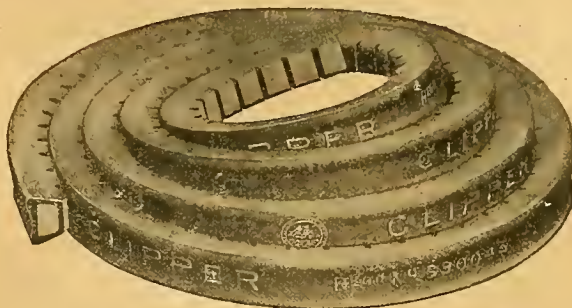
One of the most comprehensive catalogues dealing with complete machines and accessories is that issued by Messrs. Hunts, Ltd., 117, Long Acre, W.C. Many well-known makes are illustrated, and special attention is given to sidecars, no fewer than five pages being devoted to these popular passenger attachments. The list of accessories is extraordinarily complete, and any enthusiastic motor cyclist will read the catalogue with great interest.



# CLIPPER

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 Stock Lengths: 7ft. 6in., rising 6in. to 9ft.

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Specially designed to securely contain a spare belt of any size. Made of compressed fibre, it is strong, weather proof, easily attached, and requires but a modicum of space on carrier.

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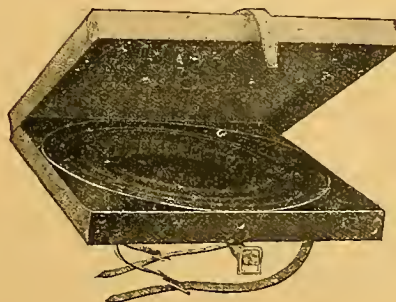
*In answering this advertisement it is desirable to mention "The Motor Cycle."*

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### Clipper Motor Cycle Belt Case.



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### Clipper Motor Cycle Carrier Case.



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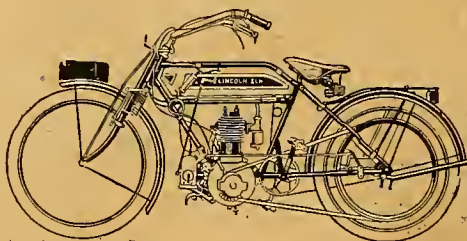


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E.H.G.

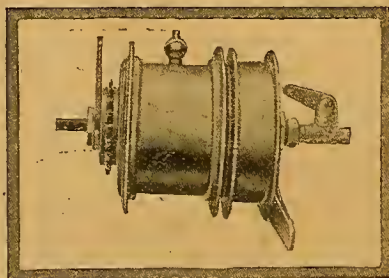
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This we MEAN! Some people with three or four machines will advertise quite as good a story! With US we have the Agencies, Contracts running, and are, financially, in a position to take up the machines when the makers have them ready for delivery, and have them in stock for your acceptance when you are ready to buy them.

At the present moment £5,000 won't buy what we have in stock—at the Stations and at the Works. There is no need for you to wait while we write to ask the makers when they can deliver. They have already delivered, and the machines await your acceptance.

If you don't want to deal with us on account of the distance, ask your Local Agent to write us for terms. We will supply you through him with pleasure, and he can then give you lessons in riding, and any other assistance that you may require.

We have been telling you for three years a similar story—that we have the largest stock in the world—and we now confirm same.

We have also told you that we can supply you with a brand new machine for from £10 down, with very little extra added for the accommodation. Or, again, if you are a cash buyer, we shall be glad to have your esteemed commands for same.

We have a few second-hand machines still on hand, and a few hundreds of pounds worth of accessories, which must be sold! Look in the miscellaneous advertisements of this paper for a list of accessories. Write us for a complete list of Motor Cycles and Accessories, issued each week. Please let us have YOUR OFFERS. The stuff is going, but there is still plenty left, and if you will only make us a firm offer, we can supply you with anything you want, we feel quite sure.

Before starting to build up your Motor Cycles, write to us for parts. If you are in the Trade, our terms will suit you whether for new or second-hand machines or Accessories. Remember, we want your orders.

You cannot do better than come to Morecambe for your Holidays.

**SPECIAL OFFER.**—To move the Stock before the month is out, we offer any size of Morecambe Rubber Tyres at 11/11½; ditto, Studded, at 14/11½. All guaranteed, and on approval against Cash.

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—QUEEN'S ROAD, LONDON, W.—



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SIMPLE TO FIT.  
SUITS ALL STANDARD MACHINES.  
FITS INTO EXHAUST CAP.  
NOTHING TO GET OUT OF ORDER.

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J. B. JACQUEMIN BROS.  
COLLAPSIBLE "CHLOROPHYLLE" EYE PROTECTORS.  
(JACCHISON'S PATENT.) REGD.  
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nition.

THE EXPERT'S OPINION—PERFECT in all WEATHERS.

PRICE from 4/9 CHLOROPHYLLE LENSES, 3/6 PLAIN (Postage 2d.)  
WRITE—CHAPPELL & CO., 11, Hatton Garden, LONDON.



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



Northumberland, Cumberland, Durham, and Westmorland.

York and Lancashire.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

Norfolk, Suffolk, Cambridge, Huntingdon and Bedford.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

Somerset, Devon, Dorset, and Cornwall.

Scotland.

Ireland and Isle of Man.

## BETTER BARGAINS THAN EVER.

For HOLIDAY BUYERS.

The kingdom's largest selection of Newest 1912 Models of all Best Makes and Desirable Second-hand Machines that have been overhauled and put in excellent riding condition will be found at Bargain Prices at



# WAUCHOPES

ASK FOR TO-DAY'S LIST. IT INCLUDES

5752.	3 1/2 h.p. 1911 3-speed	PREMIER	£37 10
5753.	3 1/2 h.p. 1912 T.T.	TRIUMPH	£42 0
5767.	3 1/2 h.p. 1912 Free-engine	ROVER	£45 0
5775.	7-9 h.p. 1910 2-speed	V.S. and s'car	£38 0
5776.	5 h.p. 1911 2-speed	REX DE LUXE	£35 0
5780.	8 h.p. 1912 3-speed	CHATER-LEA and sidecar	£85 0
5781.	3 1/2 h.p. 1912 2-speed	BRADBURY	£42 10
5782.	6 h.p. 1912	ZENITH, with Canoelet Sidecar	£75 0
5786.	2 1/2 h.p. 1912 3-speed	NEW HUDSON	£40 0
5788.	3 1/2 h.p. 1912 2-speed	HUMBER	£45 0
5716.	2 1/2 h.p. 1910 2-speed	F.N.	£25 0
5729.	3 1/2 h.p. 1911 Cone Clutch	REX	£30 0
5732.	2 1/2 h.p. 1912 2 sp.	ROYAL ENFIELD	£45 0
5737.	3 1/2 h.p. 1910 2 speed	P. & M.	£40 0
5742.	3 1/2 h.p. 1910	T.T. TRIUMPH	£32 10
5743.	2 1/2 h.p. 1911	DOUGLAS	£25 0
5690.	3 1/2 h.p. 1911 Standard	TRIUMPH	£35 0
	3 1/2 h.p. 1911 3 speed	PREMIER	£37 10
5695.	3 1/2 h.p. 1911	A.S.L.	£27 10
5702.	6 h.p. 1912 Twin	REX DE LUXE	£48 0
5705.	3 h.p. Two-stroke	IXION	£12 10
5710.	3 1/2 h.p. 1908	MINERVA	£17 10
5711.	5-6 h.p. 1912 4-cyl.	F.N.	£50 0
5715.	3 1/2 h.p. 1911 Standard	BRADBURY	30 Gns.
5604.	8 h.p. 1912 2-speed	BAT	£75 0
5674.	5 h.p. 1910	INDIAN and sidecar	£30 0
5684.	3 1/2 h.p. 1911 Free-engine	TRIUMPH	£42 0
5691.	2 1/2 h.p. 1911 2-sp.	ROYAL ENFIELD	£37 10
5625.	3 1/2 h.p.	REX	£7 10
5633.	3 1/2 h.p. 1911	KERRY ABINGDON	30 Gns.
5540.	8 h.p. 1911 2-speed	MATCHLESS and sidecar	£65 0
5569.	3 1/2 h.p. 1910	KERRY ABINGDON	£32 10
5606.	3-6 h.p. 1908 2-speed	4 cyl. F.N.	£25 0
5612.	3 1/2 h.p. 1909 tourist	REX	£22 10
5613.	3 1/2 h.p. 1908	MATCHLESS-J.A.P.	£18 0
5618.	3 1/2 h.p. 1911	BAT-J.A.P.	£33 10
5621.	2 1/2 h.p. 1912 3-speed	HUMBER	£45 0
5571.	2 1/2 h.p.	HUMBER	£15 0
5158.	3 1/2 h.p. 1908 2-speed	N.S.U. and sidecar	£25 0
5169.	5 h.p. 1908 twin	G.B.	£20 0
3931.	5 h.p. 1910 tourist	REX	£30 0
5504.	3 1/2 h.p. 1910	PREMIER, Mahon free engine	£24 0
5543.	3 1/2 h.p. 1911 3-sp.	Lady's HOBART	£35 0
5547.	6 h.p. 1911	ZENITH GRADUA and sidecar	£63 0
5560.	2 1/2 h.p. 1912 Standard	PREMIER	£30 0
5562.	2 1/2 h.p. 1909	DOUGLAS, Roc 2-sp.	£29 0
5555.	3 1/2 h.p. 1911	L.M.C., variable gear	£35 0
5332.	5-6 h.p. 1911 4-cyl.	F.N.	£33 10
5358.	2 1/2 h.p. 1912 2-speed	ENFIELD	£47 0
5468.	3 1/2 h.p. 1911	BRADBURY	£35 0
5327.	7 h.p. 1911 2-speed	REX DE LUXE	£45 0

Close to "Daily Mail" Office in Fleet Street, near Ludgate.

Shops' Act.—Close at one o'clock on Saturdays.

Phone: Holborn 5777.

Wires:

"Opifcer, London."



## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, ad. will be charged for registration and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear on the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Hiffe and Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

BRADBURY, 3 1/2 h.p., 1911 model, new; accept £39/10. —Hall, Skinnergate, Darlington. [X7803]

4 h.p. Scott, in splendid condition, new tyres; £39.—Ilkington, Highgate, Kendal. [X7719]

BRADBURY, 1909 model, in perfect condition, £26; a bargain.—Walton, Nook St., Workington. [X7802]

3 h.p. Dene, re-bored, new rings, 26in. wheels, nearly new tyres, strong serviceable machine, ready to ride; £8; must sell; bought twin.—7, Crown St., Morpeth. [X7802]

6 h.p. Chater-Lea-Jap, Roc 2-speed, £38; also lots of spares and accessories to sell cheap, including 1912 Albion clutch.—Particulars from Lawson, 36, Banbury St., South Shields. [X7802]

### SECTION II.

York and Lancashire.

LIVERPOOL.

SALE of new and 2nd-hands.

DOUGLAS; stock bought before the T.T. boom.—Colmore Depot, 18, Renshaw St., Liverpool. [X7806]

CHATER-LEA, No. 7, passenger model, just received.—Colmore Depot, 18, Renshaw St., Liverpool. [X7807]

BAT, chain drive, 2-speed, 8h.p., ready.—Colmore Depot, 18, Renshaw St., Liverpool. [X7806]

PRECISION, built to order for 38gns.; wonderful value.—Colmore Depot, 18, Renshaw St., Liverpool. [X7806]

CLYNO; immediate delivery.—Colmore Depot, 18, Renshaw St., Liverpool. [X7807]

TO be Cleared Quick on account of stock-taking, Jan. 31st:

1912 Bat-Jap, 3 1/2 h.p., P. and M. 2-speed, lamp, horn etc., not done 600 miles; to clear £48.

1912 B.S.A., free engine, Lucas lamp, horn, full kit tools, absolutely as new; £48.

1909 T.T. Triumph, 3 1/2 h.p., Whittle, lamp, horn, span valve, etc., and plug, new speedometer, 4000 meter, and full kit tools; £30, a bargain.

1912 3 1/2 h.p. 3-speed Rover, free engine, Millford sidecar; list price £75, our price £68; brand new.

1912 3 1/2 h.p. Rover, brand new; list £49, our price £43.—Hartley Clegg, Ltd., 6, St. James St., Burnley. [X7807]

DOUGLAS, 1911, good condition, new back tyre £30.—Whitehead, Brookdale, Burnage Lane, Manchester. [X773]

1912 Free Engine Triumph, new; also 1909 free engine Triumph, excellent condition.—Stockdale, Lytham. [X776]



Nearing the End.

BRAND NEW 1911 REXES.

DELIVERY FROM STOCK.

Makers' price. Ours.

1 p. Rex Tourist ..... 43 guineas 34 guineas

1 p. Free Engine ..... 48 guineas 39 guineas

1 p. 2-speed de Luxe ..... 57 guineas 46 guineas

new and guaranteed. Exchanges liberally dealt with

NOTE.—ALL New 1911 Twins are now sold.

SECOND-HAND REXES.

1912, 2-speed Junior de Luxe, 100 miles ..... £32 10

1912, 5-6 h.p., 1909, 2-speed, twin, de Luxe ..... £34 10

1912, 2-speed Junior de Luxe, 1912, 100 miles only ..... £29 15

1911, 3 1/2 h.p., 1911, clutch model, as new ..... £34 10

1911, 3 1/2 h.p., 1911, carefully used ..... £31 10

1911, 5 h.p., twin, spring forks ..... £16 10

2-speed de Luxe, 1912, 5 h.p., 1911 M.O.V. Engine ..... £39 10

1911, 5 h.p., magneto, free engine ..... £26 10

1911, 3 h.p., light and low ..... £12 10

1911, 2 h.p., magneto, lightweight, N.B. control ..... £29 10

1910, 5-6 h.p., twin, very fast ..... £29 10

1911, 3 h.p., belt drive ..... £18 10

1911, 3 1/2 h.p., 1912 magneto and fittings ..... £33 10

1911, 3 1/2 h.p., Rex de Luxe, trials only ..... 42 Gns.

SIDECAR COMBINATIONS.

CLYNO, new 1912, just delivered, complete with lamp, horn, and new de Luxe sidecar ..... £76 0

1912, 5-6 h.p., 1912, and new sidecar ..... £67 15

1911, 2-speed, and Montgomery sidecar ..... £38 10

1911, 5 h.p., 2 speeds, and sidecar ..... £37 10

1911, 5 h.p., 2 speeds, free engine ..... £29 10

1911, 5 h.p., 2 speeds, free engine ..... £25 10

1911, 3 h.p., vertical engine ..... £10 0

1911, 3 h.p., vertical engine ..... £9 10

1911, 3 h.p., spray carburettor ..... £9 10

1911, 3 h.p., h-b. control ..... £14 10

1911, 3 h.p., spring frame ..... £10 10

1911, 3 h.p., spring frame ..... £14 10

1911, 3 h.p., Chater-Lea frame ..... £8 10

1911, 3 h.p., footboards ..... £8 10

1911, 3 h.p., Chater-Lea-Minerva, 2 1/2 h.p., Nala 2 speed, spring forks, Model de Course tyres ..... £18 18

1911, 3 h.p., vertical engine, h-b. control ..... £9 10

MISCELLANEOUS MACHINES.

1910, T. w-c, 2-speed, late 1910 ..... £34 10

1911, 3 1/2 h.p., magneto, spring forks ..... £25 0

1911, 3 1/2 h.p., 1912, 3 1/2 h.p., free engine, as new ..... £29 10

1911, 2 1/2 h.p., Bosch magneto, spring forks ..... £18 10

1911, 2 1/2 h.p., magneto ignition ..... £16 10

1911, 5 h.p., 2 speeds, free engine ..... £29 10

1911, 5 h.p., 2 speeds, free engine ..... £25 10

1911, 3 h.p., vertical engine ..... £10 0

1911, 3 h.p., vertical engine ..... £9 10

1911, 3 h.p., spray carburettor ..... £9 10

1911, 3 h.p., h-b. control ..... £14 10

1911, 3 h.p., spring frame ..... £10 10

1911, 3 h.p., spring frame ..... £14 10

1911, 3 h.p., Chater-Lea frame ..... £8 10

1911, 3 h.p., footboards ..... £8 10

1911, 3 h.p., Chater-Lea-Minerva, 2 1/2 h.p., Nala 2 speed, spring forks, Model de Course tyres ..... £18 18

1911, 3 h.p., vertical engine, h-b. control ..... £9 10

1912 SIDECARS.

Illustrated List on application.

Change," with Continental motor cycle tyre 25" 5 0

1912, with best tyre, apron, footmat ..... £6 6 0

1912, with reversible child's seat ..... £7 7 0

1912, with best coach-built body ..... £7 12 6

Improved Quick Detachable Joints, cranked extra

back axle and spindle, tip-up body, and caged ball

to all models. Prompt delivery to suit Rexes,

1912, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

The Halifax Motor Exchange

Largest Rex Dealers,

1, WESTGATE, HALIFAX.

Phone: 766. Telegrams: "Perfection."

MOTOR BICYCLES FOR SALE.

1911 Clutch Triumph, as new. £40; accessories, 30/-; also 1912 2-speed 6 h.p. Matchless, and 1912 Millford spring wheel sidecar; £75.—8, Egypt St., Warrington. [X7762]

1912 Enfield Lightweight, new May, only ridden 500 miles, condition absolutely as new; bought sidecar combination; accept £40.—Wiltshire, 52, Barnsley St., Wigan. [X7743]

1911 Triumph T.T. Roadster, touring bars, tyres and belt new. Triumphs, perfect condition, horn, Garner, spares; £37/10.—Hesketh, 82, Campbell St., Burnworth, near Bolton. [2771]

SCOTT, 1912, new, in stock, £65; Rudge multi, new, in stock, £60; Hazenwood, 1912, 2 1/2 h.p., 3 speeds, new condition, lamp, Cowey speedometer, a bargain, £45.—Everingham, Pocklington. [X7606]

CLYNO, 1912, with sidecar chassis, Wolbrown, cane body, speedometer, watch, whistle, horn, spare tube, cover, done 1,500, accept £95, accept £80.—Field Clough Mills, Sowerby Bridge. [X7758]

A.J.S. Featherweight, 1 1/2 h.p., real gent's machine. £12; Budget lightweight, 2 1/2 h.p., £9; both dirt cheap, must be cleared, room wanted; consider pedal bike as part.—23, White Cross Rd., York. [X7605]

5 h.p. Indian, a flier, late 1910, little need, newly painted red, plated, and engine thoroughly overhauled regardless of cost; what offers?—Meargher, 131, Wilmslow Rd., Withington, Manchester. [X7556]

3 1/2 h.p. Scott, 1910 pattern, plating and enamel as 2 1/2 h.p., guaranteed perfect condition, 1912 improvements, automatic lubricator; 105 milecar trial given; £34; sidecar, £4, perfect.—150, Milnrow Rd., Rochdale. [X7572]

1912 Scott, 5 1/2 h.p. A.J.S., 2 1/2 h.p. A.J.S., Donaghy, Matchless, Zenith, Bradbury, James 3-speed (used twice, £48), above in stock; also 1911 F.E. Triumph, £40; 1912 ditto, mileage 78, £48.—W.F. and Co., 5, Cheltenham Parade, Harrogate. [X7620]

1911 Chater-Lea, No. 7, 8 h.p. J.A.P., with 1912 Turner £18/18 sidecar, lamps, horn, spares, £65; 1909 Triumph, Mabon clutch, and tools, recently overhauled by makers, £34, or nearest offer.—Simpson and Co., 6, Dalton Rd., Barrow-in-Furness. [X7781]

SALE of Lightweights.—Late 1910 Moto-Reves, single cyl., as new, £15; ditto, twin, £18; ditto, not so good condition, £15 and £12/10; 1911 Moto-Reve £22/10; 1910 F.E. Moto-scoche, £15; 1911 F.E. Moto-scoche, £20; others equally cheap.—Write for lists. Hitchens, Morecambe. [2814]

ZENITHS, all models; list price cash; deferred terms arranged.—Hitchens, Morecambe. [2812]

P. and M.; immediate delivery; £60; deferred terms arranged; no waiting.—Hitchens, Morecambe. [2813]

1911 P. and M., complete with splendid sidecar, rigid type, lamp, horn, etc., all tools. £37/10; 1911 7-h.p. Bat, P. and M. 2-speed gear, Mills-Ford sidecar, all in good order, £60; 1911 free engine Triumph, in perfect order and condition, £38; several others.—Embro Cycle and Motor Co., Holderness Rd., Hull. [X7515]

T.T. Triumphs.—Mr. J. A. Hoffmann has for sale 1911 T.T., full touring equipment, Jones 60 m.p.h. trip speedometer, lamp, generator, perfect condition, absolutely reliable, £39; 1912 Isle of Man racer (finished second single), Sturmer-Archer gears, exactly as ridden in race, perfect sidecar machine, £56, or very nearest offer; or 1912 T.T. racer (not ridden 1,000 miles), winner cups and medals, practically unscratched, £24/10.—Baldon, near Shipley, Yorkshire. [X7711]

GREAT SALE of motor cycles.—3 1/2 h.p. Rex, £7/10; 4 1/2 h.p. Chater-Lea, magneto, spring forks, B. and B. £12; 5 h.p. Triumph, £3; 1909 Dengins, £18/10; 1911 Kerry-Abingdon, £28; 5 1/2 h.p. Rex, 1909, twin cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £26; P. and M., nearly new, 2 speed, free engine, £37/12; A.C. Sociable trier, latest model; 6 h.p. Zebra car, 2-seat; what offers for Williamson machine? Now on exhibition. Clyno and cabrio de Luxe, F.R.S., Cowey, etc., etc., new last Easter, cost £112, what offers? All above machines actually in stock. [X7619]

NORTHERN Depot, Ltd., "Everything Motorish," Leece St., Liverpool.—Latest 1912 Clutch Kerry-Abingdon, been 45 miles, special bargain price 45gns., usual price 51gns.; Rover with mark 111 Armstrong gear, Brooks pan seat, £58; standard Kerry-Abingdon, 45gns.; clutch model, 51gns.; latest 2-speed Bradbury with adjustable pulley, £58; clutch 4 h.p. Rex-Jap with Brooks pan seat, £54/12; A.C. Sociable trier, latest model; 6 h.p. Zebra car, 2-seat; what offers for Williamson machine? Now on exhibition. Clyno and cabrio de Luxe, F.R.S., Cowey, etc., etc., new last Easter, cost £112, what offers? All above machines actually in stock. [X7619]

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

3 1/2 h.p. Triumph, late 1909, in splendid condition; £26, no offers.—Leathes, Llanbedr, Ruthin. [2870]

1911 Free Engine Bradbury, guaranteed good order; 37gns, cash.—Rigby, Rosebank, Prestwich. [X6503]

ROVER, 1912, free engine, new, not ridden 100 miles; £50.—Collyer, 14, Tamworth St., Lichfield. [2776]

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.  
Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

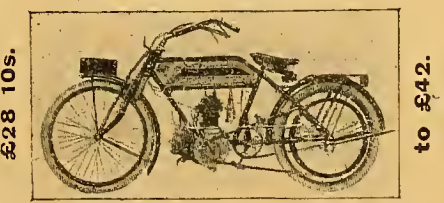
Terms: Cash, Exchange, or Extended Payments.

IMMEDIATE DELIVERY

AND IN STOCK TIME OF GOING TO PRESS:

3 1912	CLYNOS, 5-6 h.p., 2-speed, chain drive ..	65 Gns
7 1912	ZENITHS, 3 1/2 h.p. ....	53 Gns
4 1912	ZENITHS, 6 h.p. ....	67 Gns
3 1912	ZENITHS, 8 h.p. ....	69 Gns
2 1912	T.T. Roadster TRIUMPHS ..	£50 0
6 1912	F.E. TRIUMPHS ..	£55 0
9 1912	T.T. RUDGES ..	£48 15
4 1912	F.E. RUDGES ..	£55 0
4 1912	Multi RUDGES ..	£60 0
1912	BRADBURYs, all models, from ..	£48 0
4 1912	SINGERS, 4 h.p., 2 speeds ..	£65 0
1 1912	SINGER, 3 1/2 h.p., 3 speeds ..	£58 15
2 1912	2-speed B.S.A.'s ..	£60 0
1912	DOUGLAS, all models, including K and L ..	£30 10
1912	LINGOLN-ELK, 3 h.p. model ..	£52 10
3 1912	HUMBERS, 3 1/2 h.p., 2-speed ..	£52 10
1912	MATCHLESS, all models ..	£26 0
1 1912	SCOTT, 2-speed ..	£26 0
1 1912	P. and M., 2-speed ..	£27 10
4 1912	Standard A.C.'s for Immediate Delivery ..	£27 10
1912	MORGAN Runabout, 15 days ..	
1912	G. and N. Runabout, 10 days ..	

Any other makes on application.  
TRADE SUPPLIED WITH VARIOUS MAKES.  
LIBERAL DISCOUNTS ALLOWED.



Machines at Bargain Prices to Clear.

£28 10s.

£28. F.N., 4-cylinder, 5-6 h.p. .... 1911

£28. F.N., 4-cylinder, 5-6 h.p. .... 1911

£25. F.N., 4-cylinder, 5-6 h.p. .... 1910

£18. F.N., 4-cylinder, 4 1/2 h.p. .... 1910

£35. T.T. RUDGE, 3 1/2 h.p. .... 1911

£40. T.T. RUDGE, 3 1/2 h.p. .... 1912

£35. ZENITH, 3 1/2 h.p. .... 1911

£67. ZENITH, 6 h.p., and sidecar .... 1912

£16. REX, 3 1/2 h.p. .... 1910

£39. BRADBURY, 3 1/2 h.p., as new .... 1912

£46. ZENITH, 3 1/2 h.p., as new .... 1912

£186. BAYARD, 8 h.p., 4-cylinder, 3 weeks old, quantity of spares ..... 1912

£285. F.N. Car, 10-14 h.p., as new ..... 1912

All Accessories included on S.H. at the price advertised.



The £4-10 REY Sidecar £3-10

With Hutchinson or Michelin 26 x 2 1/2 tyre and tube, 30/- extra.

Side entrance, £7; Coach-built, side entrance, £9 12s.  
ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY

5, HEATH STREET, HAMPSTEAD.

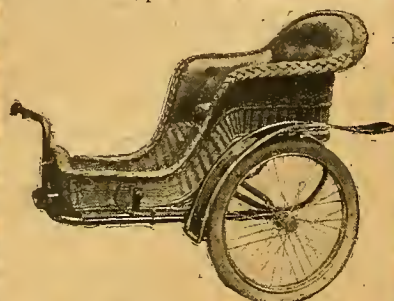


Your 1912 sidecars are

**Better Value than ever**

Vide Testimonial.

Our Model de Luxe sidecar is admitted to be the best all-round value ever offered. Cranked axle, quick detachable joints, caged ball races, with extra stout wheel spindle. Guaranteed 12 months.

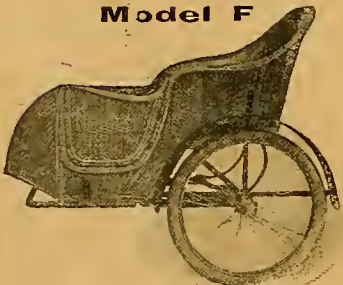
**£6 - 5 - 0**

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

**OUR REED CANE BODIES**

have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

**Model E****£7 10s.****Model F****£8 8s.**

Complete as above and carriage paid.

**MISCELLANEOUS BARGAINS.**

Lycett's "Top Tube" tool bags.....	7/-
2 1/2 h.p. Sarcola Engine.....	£1 5s.
2 1/2 h.p. Stationary Engine, water-cooled .....	£4 10s.
Albion Clutch, fits Triumph .....	47/8
New Screw-cutting Lathe, 4in. centres .....	£6 10s.
Brooks's Brgo New Saddle, 1912 model .....	14/6

**Farrar's Motor Exchange**

19, 21, 23, 25, Hopwood Lane,

**HALIFAX** (Two minutes from G.P.O.)

Telephone 919.

**MOTOR BICYCLES FOR SALE.**

3 1/2 h.p. Premier, brand new, not done 60, guaranteed; cost £47/10, sacrifice £37.-Chetts, Tarporey. [2768]

2 1/2 h.p. Premier, brand new, guaranteed; cost £36, £32 gets it; any trial.-Chetts, Tarporey. [2769]

TRIUMPH, 1909, in exceptional condition: £30, or nearest offer.-Motorist, 42, Regent St., Wrexham. [X7760]

1911 5 h.p. Indian, perfect condition, spares, etc.; £35, cash wanted.-Minshall, Stone-way, Bridgorth. [X7513]

1912 T.T. Trump-Jap, 5 1/2 h.p. Senspray, as new throughout; £40.-Allen Jones, Tanymae, Caerleon. [2828]

F.N., 5 1/2 h.p., shaft drive, guaranteed perfect condition; £28.-W. A. Gerton, 46, Darlington St., Wolverhampton. [2788]

£6.-2 1/2 h.p. L.T. mag. Clyde, running order. Paluets, adjustable pulley; near offer.-Trevelthan, Rhyll. [X7542]

TRIUMPH, 1912, free engine, unriden, speedometer.-F. G. Chambers, Shelton Wharf, Stoke-on-Trent. [X7558]

CLEMENT Lightweight, lamp, horn, cyclometer, new Michelin; bargain. £8.-54, Saddwell Rd., West Bromwich. [X7691]

TRIUMPH, 1912, T.T. model, scarcely soiled, spares; sacrifice £42, first cheque.-Newlands, Arboretum Rd., Walsall. [2992]

TRIUMPH, 1910, late, free engine, splendid condition, accessories: £32/10.-Micklewright, 208, Waterloo Rd., Wolverhampton. [X7468]

BRADBURY, 1911, late, brand new, standard model, 5 1/2 h.p., never been on road; £37, a bargain.-Seymour, Son and Foster, Sale. [2823]

TRIUMPH, 1912, free engine model, perfectly new, used 100 miles; bargain, £51.-Box 1,019, The Motor Cycle Offices, Coventry. [X7723]

MOTOSACOCHE, 2 h.p., excellent condition; spring forks, h.b.c.; 210, bargain.-Davies, Alma Cottage, Maesgwyn Rd., Wrexham. [X7759]

B.S.A., 1912, elench model, new two months ago, carefully ridden, perfect, new condition; £44.-Cutler, Lynton, Wrights Lane, Old Hill. [X7467]

MOTO-REVE (1910) single-cyl., recently overhauled; seen by appointment; £15, or highest offer.-Atkinson, Barlaston, Stoke-on-Trent. [2946]

1912 Bat, 3 1/2 h.p., standard, done 10 miles only; cost £48/10, bought last week; sell £45, or near.-Fox, Barracks Golf Club, Lichfield. [X7623]

LADY'S Moto-Reve, 1911, 2 h.p., free engine clutch, perfect condition, little used, £50, with all accessories.-Rowland, Belvedere, Banco. [X7020]

1912 New Hudson, 5 1/2 h.p. J.A.P., 3-speed gear, not ridden; must sell; cost £69, offers wanted.-No. 1,013, The Motor Cycle Offices, Coventry. [X7624]

MATCHLESS J.A.P., 1911, 8 h.p., special gear, Hutchings, everything perfect; £55, part exchange 1912 3 1/2 h.p.-Astbury, Northop, Flintshire. [2795]

1911 T.T. Roadster Triumph, like new, exceptionally fast, 2 Pavis handle-bars, etc.; £40, absolute bargain.-Cresswell, Westbourne Rd., Walsall. [X7776]

4 1/2 h.p. Twin Minerva, m.o. valves, Hellesen ignition, Mabon free engine, new rings, lamp, etc.; £18.-J. Lovatt, Liverpool Rd., Newcastle, Staffs. [3036]

B.S.A., absolutely as new, £40; with 7gn. sidecar £46; also 5 1/2 h.p. twin Rex, splendid condition, accept £22 or exchange.-W. Blackshaw, Congleton Rd., Macclesfield. [X7027]

BRADBURY, May, 1912, 2-speed, chain drive, kick starter, very little used, guaranteed perfect; £46; wanted, runabout.-Box 1,015, The Motor Cycle Offices, Coventry. [X7684]

B.S.A., 3 1/2 h.p., November, 1911, splendid condition, as new, any trial; accept £34, or exchange sidecar combination, cash adjustment.-Kenworthy, Ironmonger, Alfreton. [2976]

1910 Roe, 2-speed, handle starting, new Gradna engine just fitted, suit heavy rider or sidecarist, up-to-date, smart; £26/10.-Hill, High St., Abbots Bromley, Staffs. [2846]

MINERVA, 5 1/2 h.p., late 1909, spring forks, h.b.c., exceptional good condition, little used, will guarantee; 12 mns.; approval; cash only.-Hallam, Baths, George St., Buxton. [X7639]

J.A.P., 5 1/2 h.p., carburettor B. and B., in perfect condition, footboards, Whittle belt, engine lately overhauled, tyres good, buttended spares; £18.-R., 17, Vicarage Av., Derby. [X7784]

REX, 1909, 3 1/2 h.p., excellent condition, new belt, Dunlop studded back, Michelin front; giving up riding, doctor's orders; £19; any reasonable trial.-Challoner, Greenfields, Wrexham. [X7025]

1912 F.E. Triumphs, from stock, £55; 1910 Triumph, £30; 1909 Triumph, £25; Moto-Reve, 2 h.p., new mag. and B.B., h.b.c. carburettor, £15.-Jones, Etallnewydd, Fwllheli. [X7603]

TRIUMPH 1908 Standard, just overhauled by Triumph, splendid condition, spare Palmer cord tyre, 2 spare tubes, many spares; price £28.-Ward, 4, Hough Green, Chester. [2977]

TWO 1912 3 1/2 h.p. Zeniths, one done 1,500 miles and has won reliability trials, other only 80; what offers; buying higher power and sidecar.-Privately owned by Gordon-Jones, Holm Lea, Newcastle, Staffs. [X7602]

**MOTOR CYCLE FRAMES.**

We have a quantity of frames by well-known maker.

Price 32/6 each.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

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3 1/2 h.p. 1912 RUDGE .....	£48 15

**SECOND-HAND BARGAINS.**

3 1/2 h.p. 1907 TRIUMPH, h.b. control, Bosch	£25 0
1908 5 h.p. REX Litette, w. cooled, 2-speeds	£20 0
1911 (Nov.) 3 1/2 h.p. RUDGE, free engine .....	£39 0
1908 3 1/2 h.p. P. and M., 2 speeds .....	£28 0
3 1/2 h.p. N.S.U., magneto, spring forks .....	£17 0
2 h.p. WOLF, magneto, spring forks .....	£15 0
4 h.p. ANTOINE, M.O.V., 26in. wheels .....	£14 0
3 1/2 h.p. N.S.U., 2-speed, spring forks .....	£16 0
1910 8 h.p. BAT, M.O.V., 2 speeds .....	£45 0
1911 Lady's HOBART, Armstrong 3-speed .....	£36 0
3 1/2 h.p. Twin PREMIER, fine machine .....	£25 0

**SINGLE-CYLINDER REXES.**

1910 3 1/2 h.p., fine goer .....	£27 0
1910 3 1/2 h.p., extra good .....	£28 0
3 1/2 h.p. 1909 Speed King, extra fine .....	£23 0
3 1/2 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

**TWIN-CYLINDER REXES.**

1906 5 1/2 h.p. Twin Rex .....	£16 10s.
5 1/2 h.p., Bosch, Lloyd's variable gear .....	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V. ....	£48 0
5 1/2 h.p. de Luxe, 1908, 2-speed model .....	£28 0

**SIDECAR COMBINATIONS.**

8 h.p. BAT, 2 speeds, Millford sidecar .....	£50 0
5 1/2 h.p. 2-speed 1908 REX and sidecar .....	£33 0
7 1/2 h.p. 2-speed REX and sidecar .....	£53 0

**£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.**

3 h.p. MINERVA, vertical, M.O.V. ....	£12 0
3 1/2 h.p. EXCELSIOR, Amac, h.b. control ..	£10 0
4 h.p. ANTOINE, M.O.V., vertical engine ..	£14 0

**£4 DOWN SECURES ANY OF THESE. BALANCE 25/- MONTH.**

2 h.p. WOLF, magneto, 26in. wheels, A.J.S. engine .....	£15 0
3 1/2 h.p. N.S.U., magneto, spring forks .....	£16 0
3 1/2 h.p. N.S.U., 2 speeds and free engine ..	£16 0

**£5 DOWN SECURES ANY OF THESE. BALANCE 30/- MONTH.**

3 h.p. 1908 REX, Bosch magneto .....	£17 0
5 h.p. Twin REX, spring forks, h.b. control	£16 10s.
4 1/2 h.p. HUMBER Licard, 2 speeds, wheel steering .....	£19 0
5 h.p. HUMBER Car, 2-seater; good goer ..	£22 0
5 h.p. REXETTE, Oppermann 3 speeds .....	£18 0

**MISCELLANEOUS BARGAINS.**

New Sidecar, basket body, upholstered green	£1
One ditto, upholstered red .....	£1
1912 B. and B. Carburetters, variable jets ..	28/6
1912 B. and B. Carburetters, single jet .....	27/-
1912 Senspray Carburetters .....	28/8
Camel rin. Rubber Belting .....	per foot 1/3
Sidecar Lamps, show red light behind .....	7/6
Trailer, 26in. wheels .....	25/-
New Toolbags, 9 x 6 x 3 1/2 in. ....	4/8
Sidecar Aprons; green or red, with studs ..	7/6
New Lycett's Tubular Carriers .....	4/11

**Farrar's Motor Exchange**

19, 21, 23, 25, Hopwood Lane,

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# MOTOR BICYCLES FOR SALE.

**BRADBURY, 1910-11**, excellent condition, new Dunlop tyre, belt; expert examination; first cheque 10/-, J. N. Johnson, Glenecot, London Rd., Coalville. [X7693]

**BRADBURY, 1912**, free engine, very little used, as new, Lucas horn, good reason for selling; £45.—Heath, Isabel Cottage, Rothley, near Leicester. [X7780]

**h.p. Mitchell Lightweight**, low Chater, B. and B. h.b.e., long handles, 26in. wheels, Chichester, accumulator, horn; £38/8.—Motor, 80, Bridget Rugby. [X7783]

**10 3/4 h.p. Ariel**, free engine, 2 speeds, decompressor, good tyres, new Dunlop belt, B.B. and Bosch, 2,000 miles; bargain to clear, £25/10.—E. E. Warwick. [X7598]

**DOWN, 2 1/2 h.p.**, Longuemare carburetter, splendid condition, engine as new; owner giving up motor—sacrifice, £5/10, or nearest.—A.P., 36, Gordon St., Kingston Spa. [X7704]

**12 Rudge**, free engine, June, demonstration machine, as new, lamp, generator, Chantecelerist signal, backrest, etc.; £46.—Dove and Son, Ry, Lincolnshire. [X7722]

**TRUMPH, free engine**, Sept., 1910, 1911 T.T. engine, first-class condition, £37/10; free engine, 1912, not ridden 100 miles, £37/10.—Alfred, 1, Bursar St., Cleethorpes. [X7748]

**h.p. Twin m.o.v. Minerva, 1910**, h.b.e., Whittle, complete every accessory and spares, Brooks case spare belt and tube, 19gns., or exchange light—photo.—Motorist, Bungalow, Stechford. [X7748]

**TRUMPH, 1910**, free engine, Kempshall back, Dunlop front, new Dunlop belt, engine just overhauled; £60.—C. R. Wartonby, Clifton, Market Harborough. [X7765]

**Humber**, chain drive, clutch, long handlebars, dropped frame, stand, accumulator, enamelling, in good condition, ready to be ridden away.—Briggs, plumber, Upper Conduit St., Leicester. [X7714]

**Humber**, chain drive, new Dunlop tyres, new accumulator, long handle-bars, will touch 40 p.p., spare valves, good hill climber; £10.—Box 30, The Motor Cycle Offices, 20, Tudor St., E.C. [X7765]

**ENFIELD, 2 1/2 h.p.**, 1910's, second model, special machine, engine just re-bushed, overhauled, new valves and rings fitted, little used, appearance like new, perfect; £25; buying sidecar machine.—Heath, Clontarf, London Rd., Leicester. [X7473]

**TRUMPHS**, two 1912 free engine models in stock; one 1911 free engine Triumph, Whittle, Lucas, etc., complete as new, £42/10; one 2 1/2 h.p. twin, in perfect condition, Whittle belt, footboards, £25.—The Stamford Garage, Stamford. [X7818]

**TRUMPH, 3 1/2 h.p.**, 1909, thoroughly overhauled, Lucas pump, nearly new Kempshall's, splendid condition, 7/12 Corah, overhead tap, 90x77, first-rate condition, do over 60, Corah tyres, £40.—Auto Repairs Co., 11, Field Place, Barnall Lane, Coventry. [X7497]

**TRUMPH, 1909**, good condition, not ridden since September, Continental back cover, butt-end tube and front cover, Continental belt, all hardly soiled, new lamp, horn, tools, 226; Jones speedometer, 1,000 miles, £2 extra.—Allen, jeweller, Market Harborough. [X7767]

**TRUMPH, 1910**, just been thoroughly overhauled by makers, many 1912 improvements, including new butter, piston, engine pulley, handle-bars, belt, etc., in condition, Lucas lamp, many spares, not done since overhauled; owner bought car; £35.—Hollingside, Four Oaks, Warwickshire. [X7652]

**SECTION V.**

**ork, Suffolk, Cambridge, Huntingdon, Bedford.**

**CL. P.N.**, in first-class order and condition, like new; £17.—3a, Bridge St., Cambridge. [X7500]

**3 1/2 h.p. Triumph**, standard model, in good going order; £25.—37, Searle St., Cambridge. [X7501]

**CLAS, 2 1/2 h.p.**, 1911, peerless order; bargain; 7/10.—Garnham, 96, Crown St., Ipswich. [X7661]

**Enfield Lightweight**, 1911 model, splendid condition; £24, bargain; no offers.—Hodden, Thetford. [X7838]

**TRUMPH Free Engine Models** in stock for immediate delivery; £55.—Townsend Cycle Stores, 1, Edmunds. [X7936]

**CLAS, 1911**, almost new, fully equipped; cost immediate delivery; what offers?—C. Fuller, Huntingdon. [X7803]

**1911 B.S.A.**, 600 miles only, genuine machine, absolutely like new; £38/10.—Staff-Sergt. A.O.C., Fricks, Ipswich. [X7985]

**h.p. inclined Minerva**, just overhauled, condition good.—Shorley, 25, Bower St., Bedford. [X7764]

**late 1911, 3 1/2 h.p.**, free engine model, splendid order; £37.—Garnham, 96, Crown St., Ipswich. [X7813]

**REVE Twin, 2 1/2 h.p.**, adjustable pulley, spring, exceptionally fine order; £17, bargain.—Garnham, 96, Crown St., Ipswich. [X7815]

**S Advance**, in good condition, mag., B. and B. h.b.e.; £16.—Liddiard's, Downing St., Cambridge. [X7843]

**3 1/2 h.p.**, free engine, and var. gear; £50.—Liddiard's, Downing St., Cambridge. [X7844]

# The best machine - is the cheapest in the long run.

WE CAN GIVE

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of all the best makes, including the following

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**TRIUMPH.**

(Free Engine and T.T. Roadster.)

**SCOTT.**

(2-stroke, 2-speed.)

**REX.**

(6 h.p. de Luxe and 6 h.p. Racer.)

**B.S.A.**

(3 1/2 h.p. 2-speed.)

**DOUGLAS. ZENITH.**

(2 1/2 h.p. Model K, 2-speed, Kick Starter.) (6 h.p., Gradua Gear.)

**HAZLEWOOD-J.A.P.**

(2 1/2 h.p. 3-speed.)

**N.S.U. PREMIER.**

(3 1/2 h.p. 2-speed.) (3 1/2 h.p. 3-speed.)

**REX-J.A.P.**

(6 h.p. de Luxe Model and special Sidecar.)

## Second-hand Machines.—

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**CASH, EXCHANGE, OR PAYMENT BY INSTALMENTS.**

**The Premier Motor Co., Ltd.,**

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**TELE** (grams: "Primis," Birmingham. phone: Central 430.)

# MOTOR BICYCLES FOR SALE.

**TRIUMPH, 1912**, F.E. model; immediate delivery.—Sole district agents, Crabtree's Garage, Wisbech. [X6846]

**ALLDAYS, 1912**, standard 3 1/2 h.p. model, magnificent value, beautifully finished; 40gns.—Crabtree's Garage, Wisbech. [X6847]

**HUMBER, 1912**, 2 h.p. lightweight, 2 1/2 h.p. twin 3-speed, 3 1/2 h.p. 2-speed.—Crabtree's Garage, Wisbech. [X6848]

**DOUGLAS, 1910**, standard model, just overhauled and in good condition; £25.—Crabtree's Garage, Wisbech. [X6849]

**ROVER, 1912**, Triumph clutch, used personally for few hundred miles, fully equipped as new; what offers?—Crabtree's Garage, Wisbech. [X6850]

**INDIAN, 1910**, 5 h.p., just overhauled and in fine condition; cheap to clear, offers wanted.—Crabtree's Garage, Wisbech. [X6851]

**BRADBURY, 1912**, latest model, with Sturmey 3-speed gear; early delivery.—Crabtree's Garage, Wisbech. [X6852]

**NEW Hudson, 1912**, 3 1/2 h.p. J.A.P. engine, 3-speed gear; immediate delivery.—Crabtree's Garage, Wisbech. [X6853]

**3 h.p. Rex Motor Cycle**, mag., h.b.e., low, light, and fast on hills; £17/10.—P. Riddelsell, Boxford, Suffolk. [X7827]

**MOTOSACOCHE, 1909**, 1 1/2 h.p., splendid order throughout, engine perfect; any trial; good reason selling; £10.—Groom, Snape Bridge, Saxmundham, Suffolk. [X7622]

**1912 Bradbury, 2 speeds**, free engine, also Bradbury sidecar, fitted with child's seat, all new; cost £67, exchange Morgan, A.C., G.W.K.—127, London Rd., King's Lynn. [X7817]

**TRIUMPH, November, 1908**, just overhauled, new piston, etc., perfect condition, lamp, watch, new belt, good tyres, all spares, overalls; £28.—Jeffries, Acton Sq., Sudbury. [X7887]

**6 h.p. 1912 Zenith**, ridden under 1,000 miles, F.R.S. lamp, Lucas horn, mirror, spare Whittle belt and other spares, plating and enamelling and generally as good as new; bargain, £57.—Robinson's, Green St., Cambridge. [X7848]

**BROWN, 3 1/2 h.p.**, mag., engine recently completely overhauled, good running order; £15.—Robinson's, Green St., Cambridge. [X7849]

**2 h.p. Humber, 1912**, quite new; price to clear £32/10.—Robinson's, Green St., Cambridge. [X7850]

**CLYNO, 5 1/2 h.p.**, just delivered, immediate delivery; £63/5.—Robinson's, Green St., Cambridge. [X7851]

**TWO 1912 Free Engine Triumphs**, just delivered, no waiting; £55.—Robinson's, Green St., Cambridge. [X7852]

**LADY'S Douglas, 1911**, 2-speed gear, handle starting, ridden under 1,000 miles, lamp, horn, speedometer, etc.; £38.—Robinson's, Green St., Cambridge. [X7853]

**DOUGLAS, late 1910**, complete, very little used, tyres quite new; £27.—Robinson's, Green St., Cambridge. [X7854]

**ROBINSON'S Motor Bicycle Garage**, Green St., Cambridge, Triumph agents. Tel.: 388. T.A.: Bicycles, Cambridge. [X7855]

**BEST of Everything**—Racing J.A.P., 8 h.p., overhead valves, Chater-Lea frame, Daniels, Powell-Hammer, spares, do nearly 80, 8 months old, not done 1,200, owner always uses car; cost £75, £40 or very near quick sale; perfect tune.—Apply, Guy Straker, Jesus College, Cambridge. [X7660]

**SECTION VI.**

**Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.**

**1912 T.T. Roadster Triumph**, ridden one week only; £45, or nearest.—Weale, Leominster. [X7773]

**1912 Scott**, lamp, generator, accessories, condition perfect; bargain, £55.—Hinton, Pen-y-Lan Rd., Cardiff. [X7761]

**IMMEDIATE Delivery** Bradbury standard, also Premier, 3 1/2 h.p., free engine, 1912 models, brand new.—Hereford Motor Co., Hereford. [X7510]

**1912 3 1/2 h.p. James**, free engine, run about 150 miles, almost new, complete, Lucas lamp, horn, and spares; £47/10.—1,020, The Motor Cycle Offices, Coventry. [X7816]

**1911 Triumph Roadster**, first-class condition, new Dunlop cover and belt complete, F.R.S. lamp and generator; approval, deposit; £38, or near offer.—Box 1,018, The Motor Cycle Offices, Coventry. [X7772]

**SECTION VII.**

**Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.**

**BRADBURY, 1912**, free engine model, brand new, shop-soiled only; £49.—Ginger, Motors, Banbury. [X7699]

**TRIUMPH, 1912**, free engine model, new; in stock, immediate delivery; £55.—Ginger, Motors, Banbury. [X7700]

**MOTOR Cycle**, Alldays and Outons, 2 1/2 h.p., running order; low price.—Sewrey, Market Place, Reading. [X7634]



## MOTOR BICYCLES FOR SALE

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is that you desire to pay.		
510.	EXCELSIOR, 1906, 3½ h.p. . .	\$6
357.	N.S.U., 1905, 3 h.p. . . . .	\$9
447.	ARIEL, 1906, 3½ h.p. . . . .	\$9
3.	QUADRANT, 1906, 3½ h.p., Dunlop tyres . . . . .	\$12
	N.S.U. magneto, 24in. wheels .	\$14
388.	F.N., 1910, 5 h.p., magneto, 4-cyl.	\$14
389.	F.N., 1910, 5 h.p., magneto, 4-cyl.	\$14
51.	LINCOLN ELK, 1910, 3½ h.p., magneto . . . . .	\$20
512.	ENFIELD, 1910, 2½ h.p., mag.	\$20
176.	DOUGLAS, 1910, standard . . .	\$22
534.	CENTAUR, 1908, 3½ h.p., free- engine . . . . .	\$22
	MOTOREVE, 1910, 2½ h.p., mag.	\$22
482.	ENFIELD, 1910, 3½ h.p., mag.	\$22
583.	QUADRANT, 1910, 3½ h.p.,	\$24
432.	DOUGLAS, 1911, standard . . .	\$25
286.	VINDEC, 1910, 7-9 h.p., mag- neto, 2-speed, free-engine . . .	\$25
	REX, 1910, 6 h.p. . . . .	\$25
182.	F.N., 1911, 5 h.p., magneto, 4-cyl.	\$25
549.	TRIUMPH, 1908, 3½ h.p. . . . .	\$26
31.	DOUGLAS, 1911, standard . . .	\$28
588.	DOUGLAS, 1911, standard . . .	\$30
570.	N.S.U., 1911, 3 h.p., 2-speed, free- engine . . . . .	\$30
339.	N.S.U., 1911, 3½ h.p., magneto .	\$32
304.	DOUGLAS, 1911, standard . . .	\$32
411.	P. & M., 1909, 2-speed, magneto	\$32
78.	TRIUMPH, 1910, standard . . .	\$34
596.	KERRY ABINGDON, 1910, 3½ h.p. . . . .	\$34
	DOUGLAS, 1911, 2-speed, free- engine . . . . .	\$35
583.	DOUGLAS, 1911, 2-speed, free- engine . . . . .	\$37
275.	PREMIER, 1912, 2½ h.p., mag- neto, 3-speed . . . . .	\$39
	CLUNO, 1910, 5 h.p., very good machine and motor . . . . .	\$42
	BAT, 1910, 8 h.p., Roc 2-speed, very good machine . . . . .	\$42
530.	ZENITH, 1911, 3½ h.p. . . . .	\$44
549.	SINGER, 1912, 3 h.p., free-engine	\$46
582.	PREMIER, 1912, 3½ h.p., 3-sp., free-engine . . . . .	\$46
	MATCHLESS, 1911, 3½ h.p., V.S. 2-speed, free engine . . .	\$46

35, Colmore Row, Birmingham.  
18, Renshaw Street, Liverpool.  
261, Deansgate, Manchester.  
62, High Street, Leicester.  
45, John Bright St., Birmingham.

- A46 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.



# THE MOTOR CYCLE

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### The Industry Abroad.

WITH the motor cycle industry in such a flourishing condition in this country, it will be interesting to contrast the state of the trade on the continent of Europe, where the manufacture of motor cycles was, some years ago, of the greatest importance. The pastime is reviving in France, where the motor cycle trials organised this year have met with a very fair amount of support from English competitors, and next year the promoters of these events are counting on further assistance of the same kind, one of their sporting allies having recently sent a contributor specially to England to visit the various manufacturers and stir up increased interest in this direction. This representative visited the important centres of the industry, and went home very favourably impressed with all he saw and heard.

As a contrast, let us turn to Germany, where the motor cycle industry is in a really bad way. In that country there are practically only two important firms left to manufacture motor cycles. We recently received a visit from a German gentleman, a member of a London motor cycle club and a most enthusiastic rider of a British-made machine. It was he, his brother, and some friends, all keen riders of British machines, whose mounts were barred from a German competition quite recently because they were of British manufacture, mention of which was made in *The Motor Cycle* a few weeks ago. We are fairly well acquainted with Germany, both its country and its people, and have a sincere admiration for the industry of the latter and the sound lines upon which the former is run. We cannot, however, congratulate the

Germans so far as the motor cycle industry is concerned, on that characteristic thoroughness which we have always been wont to attribute to them in other matters.

This branch of automobilism, which is assuming such large proportions in England and is showing signs of springing into a new lease of life in France, is being throttled out of existence in Germany by means of the short-sighted policy of the few clubs which exist and the arbitrary attitude of the Government. The taxes a motor cyclist has to pay are perfectly exorbitant, and by the time the unfortunate rider has finished with the various fees and formalities he is the poorer by £10. Even the cylinders have to be taken off and the engine dimensions measured by the police. Of course there is a strong prejudice against this type of locomotion in Germany, but we have had the same thing in England, and prejudice can always sooner or later be overcome.

The most serious objection to the progress of the industry is, as we have said, the arbitrary attitude of the Government. However far ahead of other nations Germany may be in some respects, certainly as regards the motor cycle industry she has allowed herself to be pushed back to a very low position indeed. We do not say a word against the two surviving firms, who are really turning out excellent machines, but we do think the German Government might give what might be a thriving industry a fair chance to regain the ground it has lost.

Motor cyclists in this country think that they are hardly dealt with in being taxed £1 10s., but if we had to pay £10 the movement in Britain would barely exist.





# My Most exciting Ride: No. 8. F. A. APPLEBEE.

*Interrogated by L.C.*

IT is a curious fact that the most exciting incidents in a motor cyclist's career are often to be found in short pleasure jaunts, while races provide only those thrills which are common to all speed competitions. Frank Applebee, holder of the Tourist Trophy, gave me an incident in a little holiday spin, when I asked him for his most exciting ride. "It was on the London-Yarmouth road," he said, "while I was riding a Rex with a sidecar attached, in company with a friend similarly mounted. There are a lot of nice little straightaways on this road, and on one of them we paired up for an impromptu race. We soon got to a high speed and pelted off neck and neck. But gradually the road narrowed, and by the time I had noticed it, there was so little room that I found myself getting into the ditch. I didn't want to stop, and tore on, with both bicycle wheels in the ditch and the sidecar wheel on and off the ground.

## A Tight Corner.

"Soon the sidecar wheel began to leap higher, and I was so scared that I dared not take my foot off the rest to press down the pedal brake for fear of overturning. It seemed an age, whereas it could not have been more than a minute that I was in the gully, and why I did not throttle down goodness only knows. I seemed unable to do anything but sit tight and wait for the apparently inevitable. But at length I did the only thing possible, and shut off, with the result that I slowed down just in the ordinary way and came to rest wondering why I hadn't done so sooner. My companion was a good way ahead of me by this time, and there was I, just recovered from a state of abject terror over a trifle. In cold blood it may not sound very exciting, but I was never more thrilled. I have had other exciting episodes, but so far as my

racing career is concerned, it has just been methodical riding without any incident of note.

"This year's Tourist Trophy Race was the easiest I have ridden, and it is an interesting point that it was the first race I competed in since the T.T. of last year. Most of my work is done with a sidecar, but it doesn't take one long to get into a racing stride on a solo mount."

## An Early Experience.

I ventured to suggest to Applebee a little incident which is still fresh in my memory, but I think that he was less excited on this occasion than myself. Applebee was driving a Rex Litette in the Six Days' Trial of 1907, and I was his passenger. On the penultimate day, after five days' "blinding", which had kept us with a clean sheet we were confronted by a hefty wagger round a bend. Applebee took the Litette up the banking and came down in the hedge, slightly scratched, while I was thrown under bolting horses and woke up the next morning in Gloucester hospital suffering from concussion.

Applebee, by the way, was, in his early days, an amateur trick cyclist, no wonder he can show us something in the way of corner work. When asked for a few riding tips, Applebee said that the present-day motor cyclist was so efficient, that it was only necessary to sit on and let the machine do the work, so long as ordinary care in the garage was taken. The constructional or bicycle parts should be tended to more than they are, he said, for the average rider thinks so much about his engine that the frame suffers from neglect. A good tip he gave was to be careful about cleanliness, for, as he said, in cleaning the machine one apt to come across loose bolts and nuts which would otherwise be missed.

Frank Applebee, worthy son of a pioneer and principal in the firm of Godfrey and Applebee, Ltd.

## B.A.R.C. AUGUST MEETING.

The following entries have been received for the two motor cycle events at the above meeting on Bank Holiday. The first race is at 12.50 p.m.

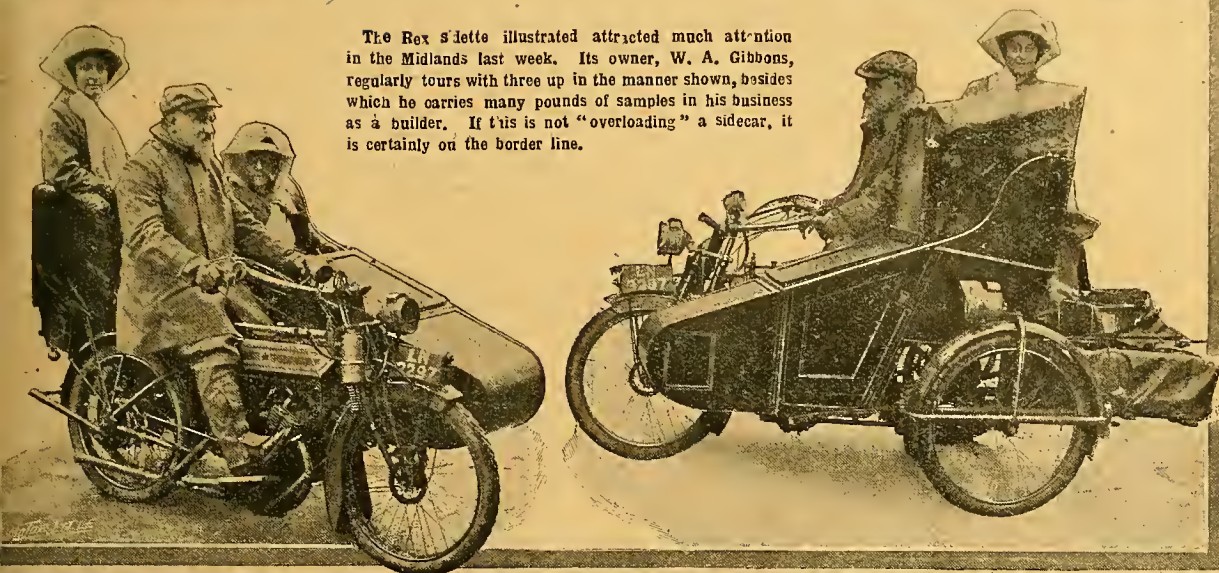
S. D. Timson (1 cyl. Rudge)	C. Whitehead (1 Triumph)
W. Dewar (1 Triumph)	S. F. Garrett (1 Green-Precision)
G. E. Stanley (1 Singer)	B. C. Remington (1 Rudge)
W. T. Wartnaby (1 W.D.)	James Gibbs (2 Humber)
A. Brunton (2 Bat)	E. H. Dolley (1 Jap)
P. Newbold (2 Zenith)	C. Townsend (2 Zenith)
H. H. Square (1 Minerva)	

F. Picken (1 Rudge)
R. Croucher (1 Kerry)
"A. E. Pontin" (1 Rudge)
W. Stanhope-Spencer (1 Rudge)
W. H. Elce (1 Rudge)
S. Russell Cooke (1 Rudge)
A. P. Williams (2 Matchless)
N. D. Slatter (1 Alcyon)
P. Schmidt (1 Puch)
W. Gordon-Fowler (1 Rudge)

H. C. Mills (1 Green)
J. A. Manners-Smith (Triumph)
H. H. Huckle (2 Zenith)
F. H. Arnott (1 Rudge)
K. Yano (2 Bat)
E. F. Remington (2 Matchless)
W. Moore (2 Zenith)
F. Hannis (1 J.A.P.)



The Rex sidecar illustrated attracted much attention in the Midlands last week. Its owner, W. A. Gibbons, regularly tours with three up in the manner shown, besides which he carries many pounds of samples in his business as a builder. If this is not "overloading" a sidecar, it is certainly on the border line.



## NEWS via PARIS.

Sensational Reports which should not be taken too seriously.

THE correspondent of a French contemporary, *L'Aero*, has recently made a tour of the leading English motor cycle factories, and has written an article giving the following details he gleaned regarding impending developments at the Triumph, Rudge, and other factories. We do not confirm reports, but from the article we learn: That the Triumph Co. are bringing out a special 500 c.c. T.T. engine with overhead inlet valve, which will be used for record attempts and at important hill-climbs, and will make its first appearance in the C. de F. Grand Prix Race. That the Clyno Co. have a new cyclecar on the stocks which will be ready for the Show. This is to have four wheels, a four-cylinder water-cooled 12 h.p. engine, and will be marketed at about £100.

That the Rudge-Whitworth will introduce at Olympia a twin-cylinder two-stroke 7 h.p. engine, which will, so it is said, develop 14 h.p. on the brake.

That the Indian firm are contemplating an attack on the 500 c.c. world's-hour record with a special 3½ h.p. twin, to be ridden by C. B. Franklin.

That the Spanish agent of the Rudge firm has bet the Madrid agent of the New Hudson Co. £240 (presumably £240 to nothing) that a 500 c.c. Rudge will beat a New Hudson of similar capacity in a 600 miles race from Bilbao to Madrid and back.

That the race will take place on August 18th, and that Vernon Taylor will ride the Rudge.

That O. C. Godfrey and F. A. Applebee will compete in all trials next year organised by *L'Aero*.

That the English invasion is only commencing.

## COVENTRY CLUB'S OPEN HILL-CLIMB.

The regulations for the Coventry and Warwickshire Motor Club's seventh annual open hill-climb, to be held on Saturday, August 31st, have just been issued. There are eight classes on the programme as under:

- Class 1.—Touring lightweights up to 350 c.c.
- Class 2.—Touring machines from 350 to 500 c.c.
- Class 3.—Touring variably geared machines, with stopping and starting test.
- Class 4.—Tourist Trophy class.
- Class 5.—Touring sidecars and cyclecars.
- Class 6.—All comers.
- Class 7.—For members. Sealed handicap.
- Class 8.—Cars. Members only.

There will be a time and formula prize, the formula adopted being the one recommended by *The Motor*

$$\text{Cycle. } \frac{C \times T^2}{W}.$$

Applications for entry forms should be addressed to the hon. sec., Mr. Geoffrey Smith, 19, Hertford Street, Coventry.



Members' hill-climb of the Sutton Coldfield A.C. F. S. Whitworth (Douglas) finishing at a fast speed. He was placed second on time in Class I.



## Occasional Comments by "Ixion"



### Clutch Control of Three-speed Hubs.

A difficulty in connection with three-speed hubs is concerned with the clutch control, especially when these gears are fitted to machines not designed for the purpose. There is a great strain on the spindle carrying the clutch pedal, the spindle being normally bolted to the front down tube of the frame. The spindle screws into the frame-clip, and the action of engaging the clutch causes the spindle to unscrew, thus disturbing the adjustment of the clutch rod, and causing the free engine position to be lost.

The gear makers have lately brought out a new type of clip, on which the spindle projects and carries a lock-nut; but this remedy is worse than the disease, as the strain now causes the clip to twist round on the tube. I prevented this twist by fitting grub screws right through the clip into the tube, but found that the grub screws were apt to shear. I then saw the necessity of supporting the spindle at two points. On my machine its outer end passed within an inch of a particularly solid exhaust pipe, and by inserting a shaped metal block into this gap I gave the spindle a two-point bearing, and absolutely prevented any movement.

The metal padding block should be of large dimensions, and should half encircle the exhaust pipe, otherwise the pipe will be dented.

### Four-speed Gears.

I should not like to say that the four-speed gear is going to supersede the three-speed, but in theory the more speeds we have the better, and if a light and reliable four-speed gear can be produced, it must be more useful than a three-speed, and in a recent article I indicated that a four-speed gear was likely to be tried.

Last week I received particulars of a light four-speed gear, with which belt slip is practically impossible, as the front pulley is half the diameter of the rear pulley.

In the case of a three-speed gear where the direct drive is the intermediate ratio, if an engine pulley of rational diameter be employed, the top gear will be about 3 to 1, which is in no sense a genuine roadster gear, and is only suitable to a  $3\frac{1}{2}$  h.p. single-cylinder engine for scrapping purposes down a gentle grade. The four-speed gear will afford this high ratio for special purposes, a  $4\frac{1}{2}$  to 1 gear for normal running, a  $6\frac{1}{2}$  to 1 for bad hills, and a 10 to 1 gear for restarting on hills or hauling a sidecar up precipices.

### The Right Side for Speedometers.

I am considerably surprised that most speedometers are constructed for attachment on the right hand side of the front wheel. It is often a matter of delay and difficulty to obtain a near side speedometer from certain firms. After all, most riders use the left hand for one-hand steering, and consequently prefer to mount their hooter on the right side. If a big-hooter and a heavy speedometer are both mounted on the right-

hand half of the steering bar, the machine has a very lopsided appearance which is deleterious. Surely the correct side for a speedometer is the *near* side? I am aware that some speedometers have a reversible transmission, but I am generalising in the above paragraph.

### Wanted, a Belt Repair Kit.

The custom nowadays is to sub-divide the toolkit. One or two of the tyre specialists have marketed delightful little strap-on wallets containing a set of levers, solution, etc., and it is a great convenience to be saved dismantling the entire toolkit when a puncture has to be mended. I understand this wallet is first-rate selling proposition, and I think the belt people would do well to market a similar miniature wallet for repairing belts, such wallet to contain spare fasteners, length of belting, punch, knife, screwdriver, and belt spanner.

The pair of standard pannier toolbags provided by manufacturers with such unanimity to-day are only just large enough to hold the main kit. For instance, my own off-pannier contains a large tool-roll; my near pannier contains two valves, two plugs, and a case of three-speed gear bits. I have to accommodate both belt and tyre kit elsewhere, and thousands of riders are in the same position.

### Backlash in Epicyclic Hubs.

One unpleasant feature of almost all epicyclic hubs is the amount of backlash existing between belt rim and hub. I took out such a machine the other day, and as it got away with me I fancied the strange engine was knocking badly. A little experience of its whine showed me that the noise really proceeded from the back hub, which clattered loudly until the revolute mounted up to a rate at which the dogs were kept pressed tightly forward. I know this complaint is as old as the hills, but I can recall at least one prehistoric hub, long since deceased, which efficiently surmounted this most displeasing noise. The only way to prevent it is never to start except on the bottom gear, and when rounding a sharp turn, if the engine power be low, the weight propelled, change down and then up again as soon as the corner is safely negotiated.

### The Air Throttle Start.

Can anybody say why no maker has yet standardised the shutter on a carburetter's main air opening, with the idea of simplifying engine starting and perfecting carburation? It seems to be an agreed fact that makers reduce the area of the main air orifices in order to ease starting, and so cause the mixture to be on the rich side at all lever positions, an inefficiency of partially remedied by reamering out the top air hole. The same result would be more perfectly obtained providing a tiny shutter (preferably operated from the handle-bar) for partially closing the main orifice. Such a shutter considerably facilitates starting in a form. Might it not pay some accessory house on the market such a notion in a form applicable to two or three of the most popular carburetters?

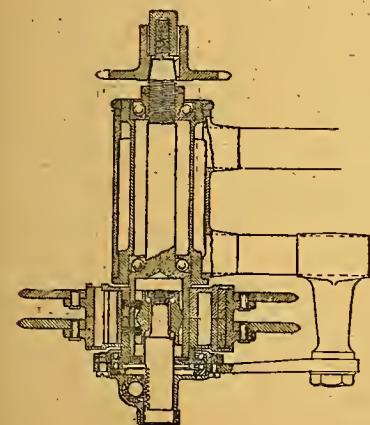




## THE Enfield Sidecar on the Road.

**A** MONTH or two ago we took delivery of a 6 h.p. Enfield sidecar combination, and since that time many enjoyable rides have been our lot. The Enfield, as may be recalled, first made its

appearance at the Olympia Show, and it was eagerly examined, as it had been produced to cater for the undoubted demand for a passenger machine capable of climbing all main road hills and averaging the speed of a good motor bicycle. Our experience is that the machine is able to answer all requirements in this respect, for it will exceed 40 miles per hour on occasion (though it must be confessed that no sidecar is comfortable either to sit upon or drive at this speed), and it will climb in 6 gradients on the low gear without taxing the engine to its utmost.



Section of the Enfield two-speed and free engine gear. It is of the internal expanding clutch type, the clutches being engaged by a pair of cams sliding in either direction.

The steering of the machine is splendid; no doubt the special construction and attachment of the sidecar to the bicycle accounts for this in no small measure.

### First Experiences.

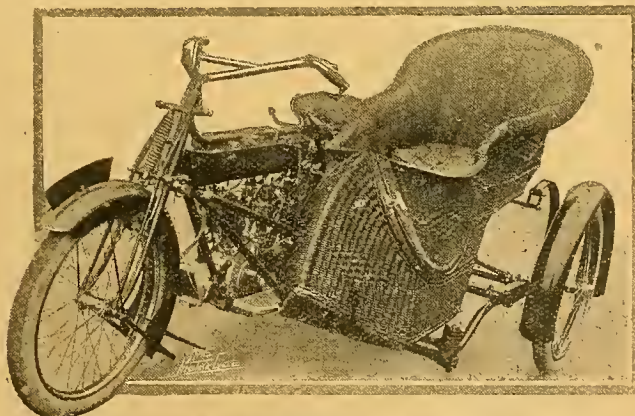
Our initial experiences of the machine were not so happy as they might have been. On the occasion of the first long run the engine started at the first turn of the geared-up handle, but we could not persuade the low gear clutch to start the machine from a standstill, no matter how tenderly the lever (which is situated on the top tube) was engaged. Eventually Colver came to the rescue, and his advice, which we have always acted upon since, was gently to tap the lever rearwards. This method works fairly well, but the clutches are not so sweet in action as they might be, and no doubt will be on the 1913 model. At the end of that run we found sundry bolts and nuts missing, and we found it paid to go carefully over the

machine with a spanner at regular intervals. This precautionary measure would, however, be unnecessary were every nut split pinned or fitted with a spring washer as it should be. The slipping clutch on the engine-shaft, and the patent cush drive situated in the rear hub, undoubtedly conduce to the smooth running of the machine.

### The Engine.

The J.A.P. side-by-side valve engine has behaved exceedingly well throughout, though we have been troubled by broken valve springs—evidently some of a badly tempered batch. This model engine, with comparatively long stroke to bore ratio, viz., 76 × 85 mm., is a highly suitable one for passenger work, though one could wish that the noise arising from the valve tappets was not so pronounced.

But for these untoward experiences, the Enfield has behaved itself splendidly. What we have liked all along has been its ready response to the throttle lever. An eighth of an inch extra opening and away the machine will bound, a change of gear only being



The standard pattern 6 h.p. Enfield two-speed sidecar combination with cane body.

necessary on hills approaching single-figure severity. One secret of enjoyable running on a powerful sidecar is to have tyres well up to their work. The voiturette Dunlop on rear wheel has given entire satisfaction, though it is strange how luck varies. For instance, after a long spell of no trouble running, we experienced four punctures in one day in the front tyre—and it has never been blown up since.

A cane sidecar is supplied with the standard article having a torpedo front and cane door. A coach-built sidecar—which we prefer for powerful machines—may be obtained at slightly extra cost.

The petrol consumption with the Amac carburetter is not excessive considering the weight, power, and speed; 55 to 60 m.p.g. we find about the average.



# Scottish Six Days Reliability Trials

THE last issue of *The Motor Cycle* dealt with the performances of the competitors in the above trial up to Tuesday mid-day, where a stop was made at Pitlochry for luncheon.

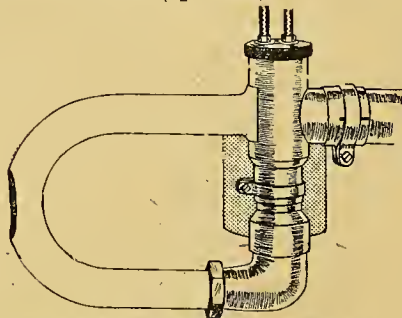
On the first day, the run was *via* Stirling (first check), alongside Loch Lomond to Arrochar for lunch. In the afternoon competitors had to climb the famous Rest and be Thankful, and, owing to the loose and stony surface on the inside of the bend, many came to grief. The individual performances were detailed in our last issue, pages 843-4. The night was spent at Oban, the day's run being 166 miles.

There were exactly seventy starters of the seventy-five entrants, the actual competitors being as follows:

N. Soresby (3½ L.M.C.)  
R. A. Macmillan (3½ Scott)  
J. S. Holroyd (2½ Motosacoche)  
S. J. K. Thomson (8 Bat sc.)  
W. Pratt (3½ P. and M.)  
A. G. Fenn (2½ Humber)  
W. Creyton (2½ Humber)  
Frank Smith (5-6 Clyno)  
A. J. Sproston (3½ Rover)  
C. T. Newsome (3½ Rover)  
C. W. Munro (2½ Douglas)  
W. Houghton (3½ Bradbury sc.)  
J. E. Chisholm (3½ James)  
W. G. M'Minnies (3½ Triumph)  
J. F. Morrison (2½ Douglas)  
H. Gibson (3½ Bradbury sc.)  
G. Griffith (6 Zenith)  
E. B. Keiller (3½ Rudge)  
P. G. Edmond (3½ Humber)  
J. T. Wood (8 G.W.K. cyclecar)  
Bert. Yates (3½ Humber)  
L. E. Cass (4½ Quadrant)  
J. Steel (3½ B.S.A.)  
P. W. Bischoff (3½ Triumph sc.)  
J. R. Alexander (7 Indian)  
R. Lord (6 Rex)  
R. White (3½ Alldays-Matchless)  
C. M. Keiller (8 G.W.K. cyclecar)

M. Pratt (3½ Alldays-Matchless)  
W. B. Gibb (2½ Douglas)  
G. L. Fletcher (2½ Douglas)  
Duncan Bell (5 A.J.S. sc.)  
W. Westwood (3½ Triumph)  
G. Taylor (3½ Rudge)  
F. Begley (3½ Hazlewood)  
George Brough (6 Brough)  
Vernon Taylor (3½ Rudge)  
H. G. Dixon (3½ New Hudson)  
H. Berwick (3½ New Hudson)  
J. Donaldson (3½ New Hudson)  
R. S. Hood (6 Brough)  
A. F. Downie (3½ Ariel)  
N. W. Downie (3½ James)

L. Newey (3½ Ariel)  
F. C. North (3½ Ariel)  
A. D. Scott (3½ Triumph)  
T. P. Macdonald (4 Norton)  
G. E. Cuffe (7 Indian)  
C. W. Meredith (3½ Bradbury)  
J. Cocker (2½ Singer)  
A. J. Dixon (3½ Singer)  
R. Holloway (3½ Premier)  
J. Oliphant (3½ Premier)  
F. S. Douglas (8 Dot)  
R. G. Mundy (3½ Macbeth-Precision)  
B. A. Hill (7 Indian)  
G. T. Gray (3½ Rudge)  
A. U. R. Downie (2½ A.J.S.)



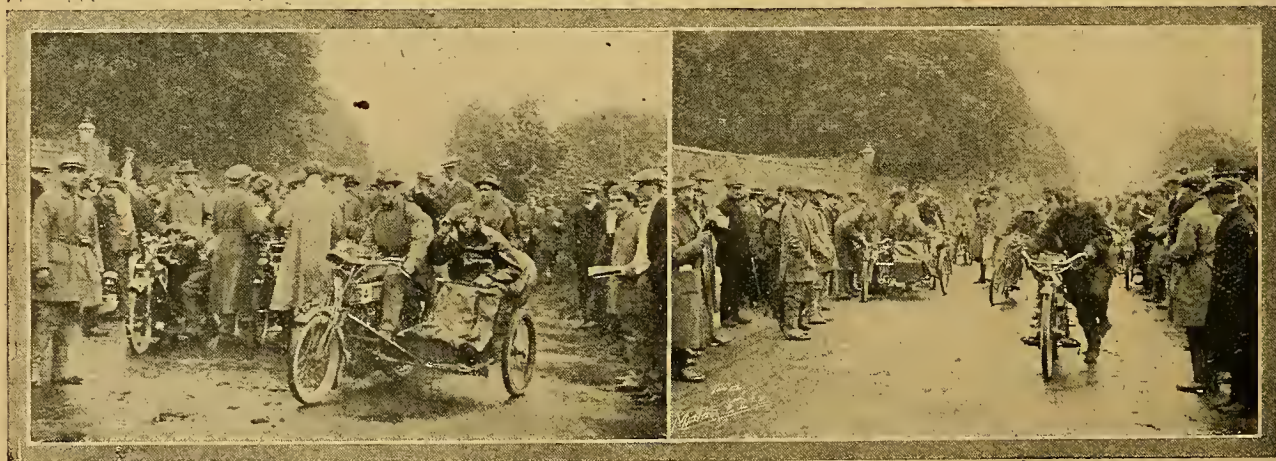
A novel air inlet pipe on Bert Yates's 3½ h.p. Humber. It will be seen that the main and auxiliary air inlets are connected by a pipe, with a single opening for the entry of air at the rear.

A. H. Alexander (2½ Douglas)  
G. Bell (3½ New Hudson)  
A. A. Hay (3½ Quadrant)  
T. Silver (3½ Quadrant)  
W. B. Little (3½ Premier)  
G. E. Whitehouse (3½ Rover)  
J. H. Begg (3½ Rudge)  
H. Le Vack (2½ Motosacoche)  
J. D. Morrison (5-6 Bat)  
P. E. Tolfree (3½ Bat)  
W. D. South (3½ Rudge)  
Miss Muriel Hind (6 Rex)

## Second Day, 179½ Miles.

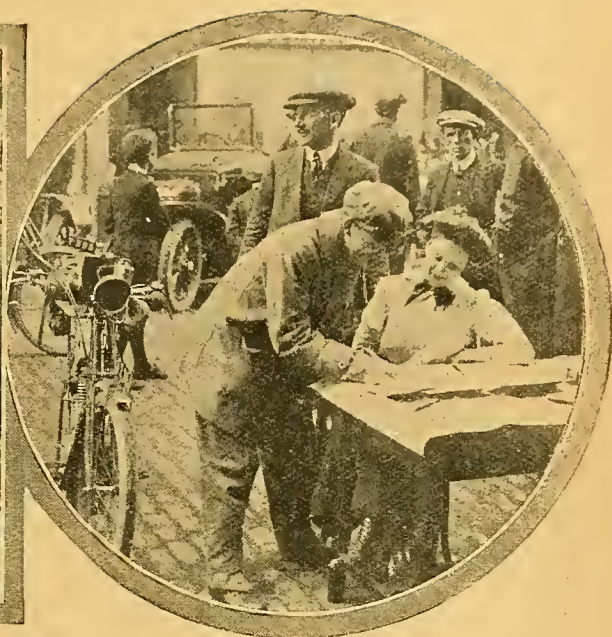
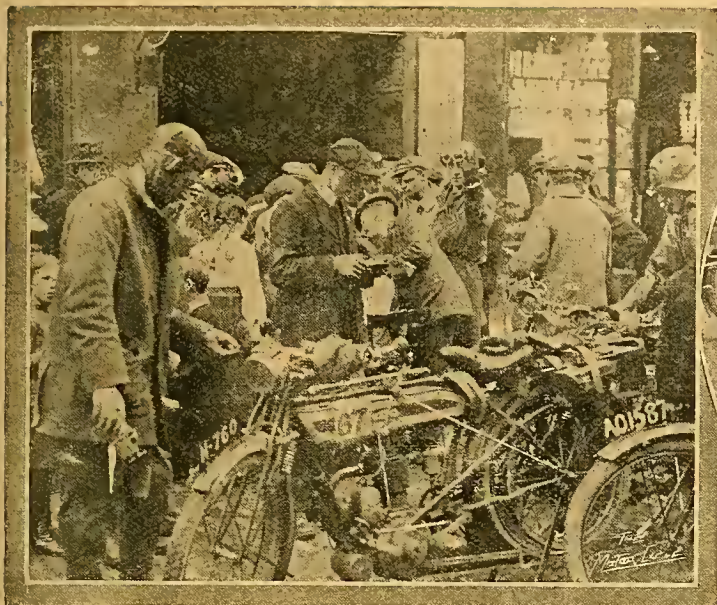
Starting at 8 a.m., the competitors journeyed *via* Dalmally, Killin, and Aberfeldy to Pitlochry (lunch and control).

Later news unfortunately shows that the loose surface on the corners was productive of several heavy spills. Tom Silver skidded on a skew bridge near the Pass of Brander and cut his head open. Fortunately his accident occurred near the residence of Mrs. Campbell, whose husband is a claimant to the Dunstaffnage peerage, and she happened to have a trained nurse at hand who attended to his injuries. Munro sustained a similar mishap with his Douglas, knocking his front wheel into the shape of a kidney, and both men have retired. Houghton broke the axle of his Bradbury sidecar near Oban yesterday, and his passenger was somewhat hurt. Houghton is continuing solo. He started this morning with his passenger on the carrier, but left him at Dalmally after a skid and fall. Many other machines bear the mark of minor accidents. The fact is that the roads are nowhere suited to "making-up time," and as some of the roads do not admit of maintaining schedule speed, the competitors are always nervous about their time, and are usually



AT THE START. The seventy competitors were despatched in bunches of four.





Scenes at the first check at Stirling.

tempted to drive rather faster than is safe. Wood's G.W.K. cyclecar has lost marks through a most peculiar misfortune. The G.W.K. wheels are keyed to the hub shell, and one of his rear hub castings contained a blowhole just at the keyway. This gave way, and so one of his driving wheels began to run free. When last seen he was laboriously filing out a new keyway.

### The Afternoon Run.

This afternoon's run was deemed by the officials, and hoped by the competitors, to be the sternest patch of the entire trial, the route consisting almost exclusively of stony moorland tracks, and including several miles of single figure gradient with numerous perilous corners. From Pitlochry we cut across to Kirk-michael, commencing with a long pull very trying to small-engined sidecars, and containing three bridges nearly sharp enough to foul a crank case. Here we hit the Braemar road, which was in moderate order as far as the Spittal of Glenshee. The remaining fifteen miles may be tersely described as "eight up and seven down." The surface is sandy and stony, terrible in wet weather, as the riders in the 1910 trials well remember. The hill resembles "Rest and be Thankful." It contains little real gradient, but the long miles of collarwork exhaust an engine, and both sides of the pass were littered with spectators' cars and cycles, which had overheated and petered out short of the summit. A quarter of a mile from the top comes the ill-famed Devil's Elbow, a wicked double hairpin with a grade of perhaps 1 in 8, if taken wide, and 1 in 5 if the rider cut in on the inside.

The Motor Cycle representative and photographer were the only officials present when the stream of competitors appeared, all the other motorists accompanying the trial having been out-distanced. After we had observed a few men, an official car appeared, and the

judges asked me to race on to the scene of the next hill-climb. The climb is very deceptive, a length of 1 in 17 up grade below the corner appearing to be downhill, and it was amusing to see the three-speed men change up on to top, and to catch their expressions when their resentful engines began knocking. The first man up was C. T. Newsome, whose Rover had plenty of reserve power; apparently he did not stop to cool for the Elbow, as most of the others found it

advisable to do. Alexander's Indian had lots in hand, and cornered well. Steel hit the bank at the lower zig-zag, dismounted, and ran up alongside, stopping higher up. Thomson made a lurid ascent at high speed with his Bat sidecar, using the grass as banking for the side wheel, and nearly leaving the road with a giant skid at the upper corner. Quite a number of competitors found this bend too much for them. I now hurried on to the scene of the next climb.



ALLARGUE BRAE, LOCALLY KNOWN AS COCKBRIDGE LADDER.

A competitor on the narrow and twisty hill near Balmoral Castle, known as Cockbridge Ladder. The surface is composed of deep, loose sand.



**The Scottish Trials.—**

Vernon Taylor (Rudge): Very good.  
Westwood (Triumph): Good.

Steel (B.S.A.): This rider stopped; legging proved useless, and he was pushed.

Brough's low compression twin made light of the hill, and is the only single-gear machine at all equal to the Scottish grades.

Edmond (Humber): First-rate, but Yates had little to spare.

Gibb (Douglas) shot up with a gigantic skid on the bend; judging by the shouts he mistook the road and drove into the farm yard at the second corner.

Cuffe (Indian) seemed anxious, in spite of his 7 h.p., and kicked hard with his feet.

Begley (Hawlewood) had to run along-side on both the lower bends.

Berwick (New Hudson) and Newey (Ariel): Very good.

Macdonald (Norton) misjudged the corner, cutting in badly, but his engine did not mind, and he went up well.

Begg (Rudge) came up at a ridiculous speed, and took a toss: his second shot was very good.

Pratt's Alldays was rather slow, in fact it just got up.

Keiller's G.W.K. cyclecar made a magnificent climb with abundant power in hand.

Downie's Ariel roared up, but the clutch slipped on the bend, and he dismounted with his engine racing.

White (Alldays): Especially good in view of the wagging of his buckled wheel.

Mundy steadied his Macbeth with his foot, but had power to spare: the same applies to North (Ariel).

Holloway's Premier reproduced its previous good form on the other hills.

The Clyno climbed finely: Frank Smith eyed the bad rut with comical resentment after his bad skid.

Donaldson legged to steady himself.

Morrison (Bat): Neat and workmanlike.

Miss Hind (Rex): Splendid.

Cocker (Singer), Vack, Lord (Rex), and Houghton (Bradbury) rushed up in a clump, leaving poor Vack stationary, exhausted by pedalling. Houghton's sidecar and passenger had been abandoned, as described above.

Gray (Rudge) and Downie (A.J.S.) rushed up with speed and neatness: the

latter's 2½ h.p. is doing excellently. The big A.J.S. and sidecar had an ugly smash this morning owing to the handle-bar coming loose on a corner. Both men were rendered unconscious, and the passenger was an hour coming round. They pluckily repaired, and got into Grantown after dark.

Bischoff turned into the hotel yard after twenty yards of the hill; while he had a drink and lowered his gear, Miss Langston walked up the hill. Bischoff ran and was helped by a pusher on the opening portion, but his single-cylinder must have done well, for he finished the day's run with four minutes in hand. The hills were trying his Triumph, chiefly owing to the collarwork between climbs.

**An Unfortunate Collision.**

Alan Hill was very late. As he coasted down into Braemar, a competing Rover and a non-competitor charged him over from behind and broke his handle-bar; half of it was, so to speak, hanging by a bit of skin. This upset his Indian grip control, and with bad roads and fierce corners, he did well to proceed.

Whitehouse's single-gear Rover and Hood's Brough both appeared very late, and their engines failed low down. When I rode up the hill later, both men lay exhausted on the bank halfway up, while kindly spectators pushed their machines up.

From the summit into the finish at Grantown was a long surfeit of severe climbs, hair-raising descents, and bad surfaces. Eight miles out I thought my machine was bumping a little more than usual, and dismounting to examine my tyres, found both down, the front cover gashed through with a stone, the back one gashed, and pierced by a nail in addition! This gave me a total of seven punctures for the day!

**Marks Lost on Tuesday.**

There was a big list of retirements and lost marks on Tuesday evening after such a severe day's running. Those who withdrew during the day include: C. W. Munro (Douglas), W. Houghton (Bradbury sc.), H. G. Dixon (New Hudson), T. Silver (Quadrant), W. B. Little (Premier), A. D. Scott (Triumph), and A. A. Hay (Quadrant).

J. E. Chisholm (James) lost 60 marks (maximum), E. B. Keiller (Rudge) 60,

J. T. Wood (G.W.K. cyclecar) 60, L. E. Cass (Quadrant) 60, J. Steel (B.S.A.) 18 Duncan Bell (5 h.p. A.J.S. sc.) 60, G. Taylor (3½ h.p. Rudge) 60, G. E. White house (3½ h.p. Rover) 54, H. Le Vack (Motosacoche) 13, P. E. Tolfree (Bat) 60, F. E. Douglas (8 h.p. Dot) 60. A J. Sproston (Rover) and G. Brough (Brough) held over, cards illegible.

**3rd Day, Wednesday, 211½ Miles**

Route: Grantown, Inverness, Dingwall, Bonar Bridge, Lairg, Aulnabarra, Hope Eriboil, Tongue, and Thurso.

To-day's route was a real rim-denter, and we are now all used to riding over rough stones. Our starting number was slightly impaired this morning, as last night's list shows. Graham Dixon's gudgeon pin bush came out through the cylinder wall yesterday, and he has trained home. Thomson broke the stem of his forks a mile or two outside Grantown last night, but inserted a liner, and got through to-day's run rather late.

We left Grantown in fine weather, but rain began to fall as soon as we joined the classic End-to-end route. Of course it is usually raining in Inverness, but for once there was no dangerous grease—Inverness keeps a special side-slipping brand all its own. The rain cleared for the day at Beaulieu—also as usual.

For the first thirty-five miles there were no incidents except a few spills on the new unrolled metal which covered the road from edge to edge in places, and a remarkable number of punctures. In Inverness, Wood hit a sheep with his G.W.K. cyclecar and had to pay £2 for it, besides shearing his wheel key again by violent braking in the effort to avoid the animal. A cattle fair was in progress at Dingwall, and the droves necessitated many dismounts. Over Aultramein Hill there was a novel surface composed of innumerable very small stones, which caused our back wheels perpetually to dry skid three inches or so, and made the riders look very curious when viewed from behind.

At Bonar Bridge we quitted the record route, turning sharp left, and the going for eleven miles into Lairg was rather queer, and included a few minor gradients. An excellent lunch prepared us for the strenuous work ahead.



CLIMBING REST AND BE THANKFUL, THE FIRST TEST HILL.

One of the less fortunate competitors, who did not follow the outside edge.

Geo. Griffiths (8 h.p. Zenith, who made a good climb, and another competitor in the act of falling.

Miss Hind (6 h.p. two-speed Rex) who stopped in the stones, but restarted on the clutch.



# Avon Motor Cycle Tyres.

Suitable for all climates.



## Tricar.

Made in 24", 26",  
and 28".  
24" - 40/- each.  
26" - 42/6 "

Tube, No. 2 Qual.  
24" 9/6; 26" 10/3.

Tube L.R.36.  
24" 8/3; 26" 9/-.



## Stonehenge.

Made in 24", 26",  
and 28".  
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A most popular  
cover at a popular  
price.

Extra strong casing.



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Made in 24", 26",  
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As a cheap cover  
this cannot be  
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Made in 24", 26",  
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Steel and rubber  
studs, an ideal all-  
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fitted with motor cycle valves.  
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Easily fitted.  
TRY THESE.  
Enormous Success.  
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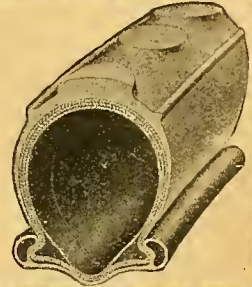
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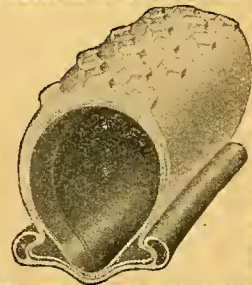
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Suitable for  
2 1/2 to 3 1/2 h.p. and  
Sidecar wheels.



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24" - 16/3 "  
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at a special price.



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# HUNTS Ltd.

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LONDON'S LOWEST PRICES

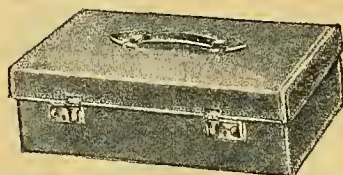
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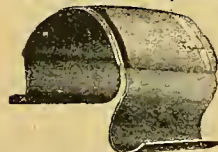
Clincher A. Won rubber-studded covers, 26 x 2 1/2 in., 29/11, usual price 31/7. Westwood rubber studded, 26 x 2 1/2, 23/11, usual price 30/6. Westwood heavy tri-car, 26 x 2 1/2, 35/-, usual price 47/-; ditto, 26 x 2 1/2, 38/6, usual price 51/-. Clincher Inner Tubes, 26 x 2, 6/11, usual price 11/4. Westwood, 26 x 2 1/2, 7/3, usual price 9/9; ditto, heavy tri-car, 9/3, usual price, 11/9. All New Goods. Postage on covers, 8d. extra, tubes 4d.

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Length, 18in.; width, 11in.; depth, 6in. Manufactured of finest cowhide. Strengthened inside with strong hide-covered metal bands, and at the bottom with two wood batons which prevent bag being chafed by carrier. The inside is lined with a strong twill, and the outside is fitted with two spring lever locks and handle. The bag is strongly riveted throughout, and it is impossible for it to lose its shape. The handle enables it to be also used as a Suit Case. Fitted with two leather straps 48x2in. for attaching to carrier. The motor cyclist can carry sufficient clothing inside this case to last him for a fortnight's tour. On arriving at his hotel, the bag can be taken to his room as an ordinary portmanteau. Finished in dark nut-brown leather. Price 30/-.

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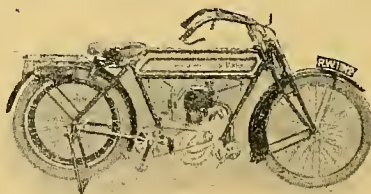
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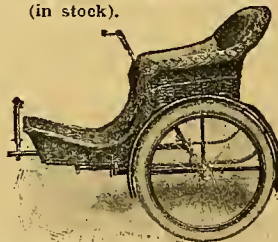
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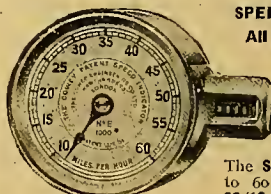
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The Cowey registers from 5 to 40 and 10-60 miles per hour. Price £4/4/0.

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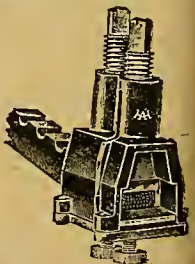


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With Pockets for Oilier Plugs and Springs.

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**The Scottish Trials.—**

News now came through of further smashes. The entire Quadrant team was in the wars. Cass charged a bridge before lunch and bent his frame, while Allan Hay missed a corner and rammed an iron gate.

The road continued to be very rough into Braemar, where a control enabled me to repass the leaders. For eight miles we followed the broad main road down Deeside, which was inches deep in white dust. Just outside Braemar I leapt two feet into the air over the great-grandfather of all potholes, but others which succeeded were well up to sample. At Inver Inn we turned sharp right up an

fine highway up Donside. In many cases the joy was short-lived, for we soon turned up the renowned precipice described on maps as "Allargue Brae," and known to local riders as "Cockbridge Ladder." The first section of this hill is a mile in length, and contains seven right-angle corners, all rendered arduous by loose surface and the narrowness of the road. After a brief dip a second mile of gentler climbing supervenes. That it is no phenomenal climb was shown by a Scotch girl, who flew up on her Douglas in great style, but it is sufficiently trying for tired men with hot engines at the end of a gruelling day. Here again *The Motor Cycle* representative was for some time the only press-

Holroyd: Vigorously pedalling his Motosacoche.

Creyton's Junior T.T. Humber: Excellent.

Fenn (Humber): Slow; apparently all out.

South kicked more to steady himself than to help his Rudge.

Griffith's Zenith: Good; lots in hand.

Gibson coaxed his Bradbury sidecar round the first bend by clutch-slipping, then stuck, and disappeared running and helped by pushers.

Soresby (L.M.C.) changed gear much too late and promptly stuck; was pushed off, but was running when he passed out of sight.

Morrison's Douglas: Very good indeed.



Rev. P. W. Bischoff, with Miss Beatrice Langston as passenger, accomplishing a splendid ascent of Rest and be Thankful on a 3½ h.p. Triumph sidecar with Sturmy-Archer gear. The beauties of the surroundings will be appreciated by an examination of the photograph.

almost perpendicular hill, partly covered with boulders and with a surface of loose sand inches deep. Only one in two men made clean ascents, several conking out on the bottom ratio of three-speed hubs; the swerves and plunges were ludicrous to behold. Reaching the summit, we found a much better surface than in 1910, and, the road being well marked with arrows, the 1910 fiasco, when everybody got lost and the section was cancelled, was not repeated.

**Good Going at last.**

A stiff pitch at Reinloan accounted for several more riders, and everybody was pleased when a steep drop put us on the

man and official on the hill. There was a great crowd of spectators. Owing to the dry weather, this entire section was at least 100% easier than in 1910.

**An Exclusive Record of Performances.**

The following are my notes of the performances—the only record taken, since no official car appeared until most of the men were up. Unluckily, all the photographers were lost, and no camera had reached the hill by 6 p.m. Our own man was delayed with tyres at Reinloan:

Pratt's P. and M.: Good; skidded on first bend.

Alexander's Indian: Very good; plenty in reserve.

C. T. Newsome and Sproston (Rovers): Both excellent.

McMinnies (Triumph) had to jump off on the bend, and vanished upwards, running alongside gamely. A single-speed single-cylinder is no machine for Scotch trials.

Thomson's 8 h.p. Bat and sc.: Very fast, saved from ditching by a bad skid.

Macmillan's Scott went up with convincing ease.

Alexander's Douglas made perhaps the crack ascent of the day—simply toyed with the hill. Fletcher was less at home. L.A. quite good.



## The Scottish Trials.—

## A Causeway of Rocks.

Eight miles out lay the patch of road where a car was alleged to have shed its engine bolts a few weeks before. Scorching ahead of the competitors, I found that the road was being "refaced" under a grant from the Road Board. All I can say is that if the old face was worse than the new, immediate decapitation would have been a simpler plan, for the "road" was a causeway of rocks sprinkled with sand.

I got through on my low gear in great plunges without coming off, and most of the competitors were equally fortunate, though W. Pratt fell under his machine and hurt his ankle.

Some of the competitors complained bitterly of the next 100 miles, but in reality they provided some of the best going we have had. Some sixty miles consisted of grass grown moor tracks, and either of the ruts or the hoof-track provided a soft excellent going, much more comfortable than the pot-hole main roads we have sampled. Of course the gradients were always stony, and towards Tongue there were many miles of rank bad going, deep sand or large stones right across the road.

## Wild but Beautiful Scenery.

Steering in ruts leaves small chance to gaze at scenery. It was wild and desolate till we reached the north coast; indeed, the chief attraction of this district was the absence of wrong turnings one might take. Near the coast the roads grew worse and the scenery became gorgeous—indigo mountains, ultramarine lochs, green bracken, purple heather, white road, grey scree—a veritable riot of colour embodied in the grandest shapes and masses, but to look about spelt a hair-raising wobble. Near Hope the minor gradients were all single figure and very rough, while a mistake at a bend often meant a deep drop clean into the sea.

Finally, with aching wrists, I reached the test hill, Eriboll, and romped up to the summit on quarter throttle and bottom gear. It starts like Gairnair with a bad



A Rudge rider in a peculiar attitude, accounted for by his machine side-slipping in the loose surface on one of the numerous bends.

bend; 100 yards up there is a fearful hairpin—a clean, sudden *volte face* in a very narrow road on a very stiff gradient—100 yards further up there is a second hairpin, a trifle less severe, and a third corner which is merely a sharp curve conducted the men to the checker. After getting their cards signed they retraced their steps to Hope, and then struck across to Tongue.

There was no confusion, as might be expected, with men ascending and descending simultaneously, for the whole hill is visible from any point below the third bend, and difficulties only arose when a sidecar coming up met a sidecar going down.

## Fine Sidecar Ascents.

The *Motor Cycle* representative was again the only press man on the hill, but this time the officials were present in force. Let me say at once that of many

fine ascents the climbs of Hugh Gibson and P. W. Bischoff with their respective  $3\frac{1}{2}$  h.p. sidecar outfits most deeply impressed the onlooker, and if one must choose between the two Bischoff had a shade more in hand.

Though the hill does not compare with Cockbridge Ladder, it is a fine achievement for a single-cylinder engine to bring up a sidecar, no matter how low the gear ratio may be.

## Individual Notes.

Newsome's Rover: Excellent; conking accompaniment on bends.

Steel (B.S.A.) fell at second bend; was pushed off, ran, and rounded third bend in saddle. The same applies to Soresby's L.M.C.

Edmond's Humber: Good; legged on second bend.

J. Alexander's Indian: Excellent; lots of reserve power.

South's Rudge: Good; legged on second bend.

McMinnies: Touch and go whether the engine stopped on second and third bends; achieved a clean ascent by skilful driving.

Griffith's Zenith: An easy climb.

Macmillan's Scott: Very pretty ascent.

Morrison's Douglas: Baulked by Yates's Humber, which fell just in front of him on second bend; nevertheless went up well. Yates got going again, and rode remainder of hill with ease.

W. Pratt's P. and M.: Good; kicked to steady himself on second bend.

Holroyd: Got up with pushing and pedalling.

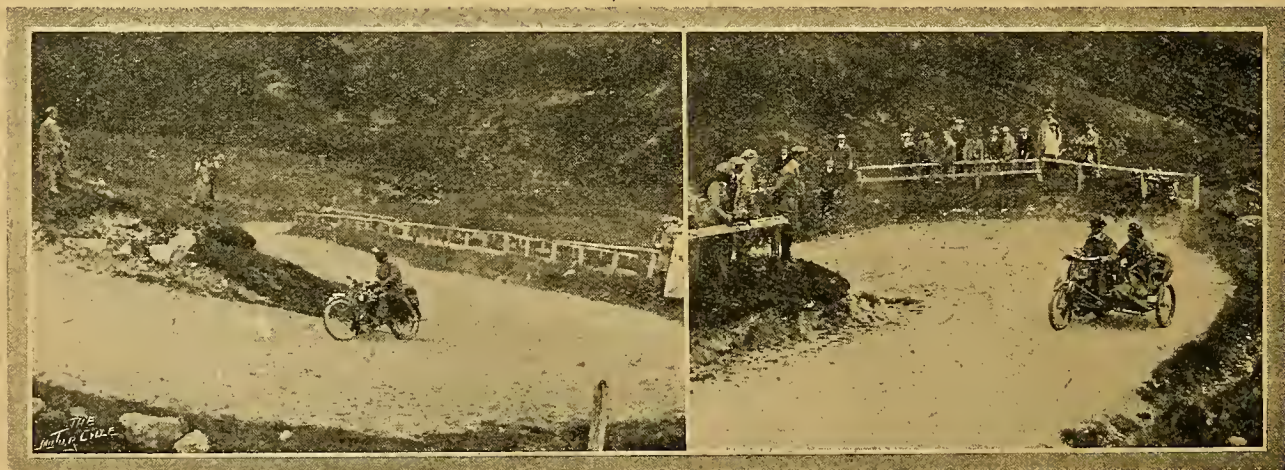
Gibson's Bradbury sidecar swung round the second bend with its side wheel clean off the ground. It then went up slowly but surely; a grand performance. The earliness of his arrival is creditable, as the forty-nine miles from Lairg were not designed for passenger outfits.

Cuffe's Indian: Very good climb.

Vernon Taylor's Rudge: Stopped second bend, rider dismounted third bend.

Sproston's Rover and Newey's Ariel: Excellent.

Brough's low compression 6 h.p. actually attempted the climb on a  $3\frac{1}{2}$  to 1



NEGOTIATING THE DEVIL'S ELBOW (between the Spittal of Glenshee and Braemar.)

C. T. Newsome ( $3\frac{1}{2}$  h.p. three-speed Rover), the first competitor to arrive making a good ascent.

S. J. K. Thomson (8 h.p. Bat sidecar) successfully rounds the difficult bend.



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*Ariel*

AGAIN

SUCCESSFUL

WINNING

2 Gold Medals

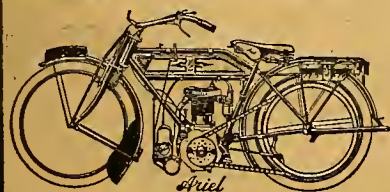
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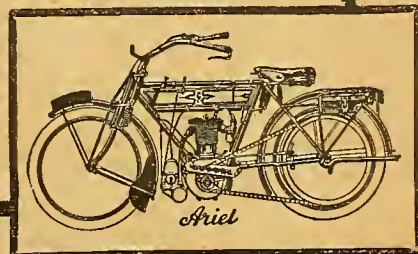
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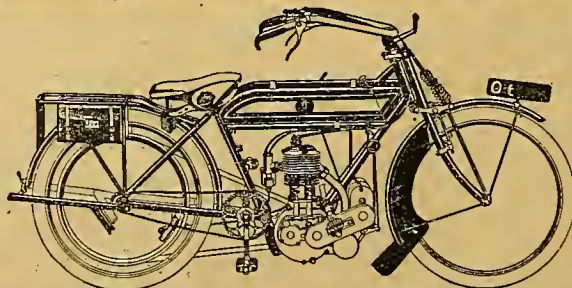
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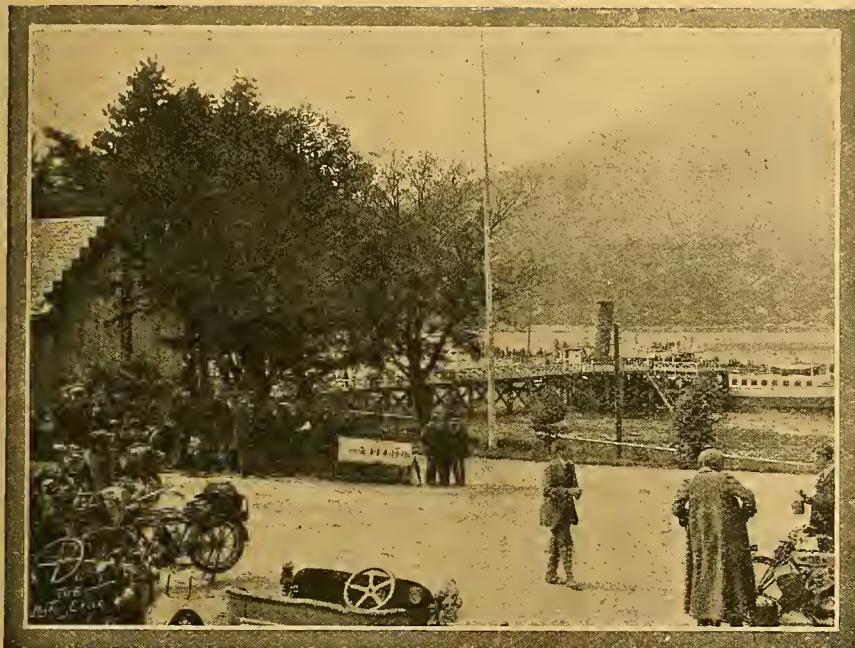
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*A Motor Cyclist's Advice: "Always use B.S.A. Cylinder Oil for Motorcycles."*

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Scene at the luncheon stop at Arrochar, on the shore of Loch Long.

single-gear (officially verified); he failed to pick up after the bad hairpin, but re-started and raced up the remainder.

Morrison's Bat: Excellent; rider knew the hill.

Westwood's two-speed Triumph: Very good.

Berwick's New Hudson: Kicked hard on third bend.

Begg's Rudge: Almost stuck on third bend.

Cass's Quadrant: Rider running on third bend.

Begley's Hazlewood: He ran alongside for half the hill; his spring forks are damaged (reason, a cow) and wobble so badly that it is wonderful he can corner at all.

Fenn's Humber: Rider kicked at both bad bends to steady himself.

Downie's (A.J.S.): Grand climb for a lightweight; neat and sure.

Dixon's Singer took second bend very neatly indeed: Good.

Meredith's Brádbury: Good.

Cocker's 2½ h.p. Singer: Rider took the second bend rather awkwardly, but the engine did not mind, and machine went up with the clutch squeaking a little.

F. Smith's Clyno sidecar: Splendid climb. The corner work at the second bend was perfect; at the third he skidded badly.

M. Pratt (Alldays) fell heavily at the second bend; just got round the third, being half baulked by a descending competitor.

Mundy (Macheth-Precision): Very good indeed.

Keiller (G.W.K. cyclecar): Magnificent climb; his second turn was a masterpiece.

Donaldson (New Hudson): Good climb; took the second bend well, went into a ditch at third bend, but rode cleverly out again without a spill.

North (Ariel): Slow climb in clouds of blue smoke.

Bischoff (Triumph and sc.): A certain climb. Miss Langston once more "weatherilted" in enviable style.

Miss Hind (Rex) tackled second bend at too high a speed and stopped, was pushed off and stopped at third bend; Donaldson who was descending politely helped her to restart.

Lord (Rex): Very good.

Fletcher and Alexander (Douglas): Both very good.

G. Taylor (single-gear Rudge): Ran most of the way between the bends.

G. Bell (New Hudson) came up, but had several stops.

N. W. Downie (James) had a great struggle, and finally walked up without his machine, and asked to have his card signed; the cool did his engine good, and getting a start above the third bend he managed to ride the rest.

R. Holloway (Premier): Probably the best 3½ h.p. climb; apparently on middle gear till near the top, and cut out thirty yards below each corner.

Gray (Rudge multi): Neat and easy.

Oliphant (Premier): Clean ascent; lots of power.

Alan Hill (Indian): Very good.

G. Bell (New Hudson): Slow, but clean ascent.

Creyton (Junior T.T. Humber) kicked on both hairpins.

D. Bell (A.J.S. sc.) failed at bottom on first attempt; came up well after as far as third bend, where he hit the bank: after a long delay clambered up the rest somehow; his bent forks handicapped him at the corners. He showed how useful a handle-bar controlled clutch can be on a bad hill.

Le Vack (Motosacoche) got up in stages with much "H.P.A."

Macdonald (Norton) arrived late to make a first rate climb.

White (Alldays) got up with several stops.

Whitehouse (single-gear Rover) stopped at third bend.

As I left the hill after a two hours' sojourn I met Tolfree's Bat and Douglas on the Dot sidecar coming out from Hope, and heard they both stopped on the hill.



Alan Hill (7h.p. two-speed Indian) on Allargue Brae or Cockbridge Ladder. Notice his walking stick attached to the handle-bar. Hill is lame.





Entering the garage at Pitlochry. More than one competitor carried a spare cover around his waist, as done by the rearmost rider.

Wood's G.W.K. cyclecar, Thompson's Bat sidecar, and Downie's Ariel were tremendously late, but all got up. Keiller (Rudge) stopped.

### The Worries of an Official.

The officials are having trouble with some of the competitors. Some unmannerly spirits let off fireworks at the dinner table in a first-class hotel at Granton last night. One firm have sent their men spare tyres ready mounted on wheels. Even our longsuffering judges baulk at such replacements!

The sixty-nine miles home consisted of fifty-four rough miles, and fifteen miles calculated to gladden the heart of an inveterate "blinder." Local croakers prophesied a wholesale failure of the entry on three alleged "unrideable" hills, viz., Hope Hill (150 yards of stupendous gradient), Kinloch Hill (half a mile of bad surface and severe gradient), Appegill Hill (which gave Fred Dover so much trouble on his coast ride). Local croakers usually ignore the capabilities of trained riders and well-tuned engines. I can only say that I do not know which of the many moderate climbs between Hope and Thurso are referred to. Personally, I climbed them all on the middle ratio of my Triumph with Armstrong hub, and though my long stay at the official test hill made me too late to observe the competitors, I hear that only one or two experienced any real difficulty on the concluding sections.

### Wednesday's Run Difficult.

To-day's run has been gruelling. Two hundred and eleven miles over rough roads are necessarily exhausting, but there is a marked improvement in everybody's corner work, and the men are becoming so familiarised with bad going that they have taken the bad pieces at 30 m.p.h. There was quite as bad going in the 1911 Harrogate Trials (for Tan Hill is rougher than the new road at Lairg), but the crux of the Scottish Trials is that practically every mile is rough. And yet next year the course may be more severe!

### Fourth Day, Thursday, 190 Miles.

Route: Thurso, Berriedale, Brora, Bonar Bridge, Strathpeffer, Braemore Lodge, Dundonnell Hotel, and Gairloch Hotel.

We have had our first drencher to-day. Some of us heard the rain beating down on the roofs at Thurso at one o'clock this morning, and when we, at six, looked out of our windows we could scarcely see across the road so thick was the Scotch mist. The drizzle accompanied us south, with variations. For instance, at Dundneath it was as dark as twilight. Towards Bonar Bridge the drizzle changed into a torrential downpour, and everybody was quickly soaked. We heard of no garments but oilskins that were proof against it. This lasted until lunch, when the sun came out.

The going was good from Thurso by the

inland S.E. cross cut to Latheron. The surface of the Caithness portion of the End-to-end route is proverbial for excellence, and was better than I have ever seen it before. The road has been widened and rolled. Berriedale troubled nobody; the three-speed men nearly all got up on their intermediate gears. There was no excuse for sideslip until the downpour converted the loose pieces across Aultnamain Hill into soft sludge, but we heard of no tumbles.

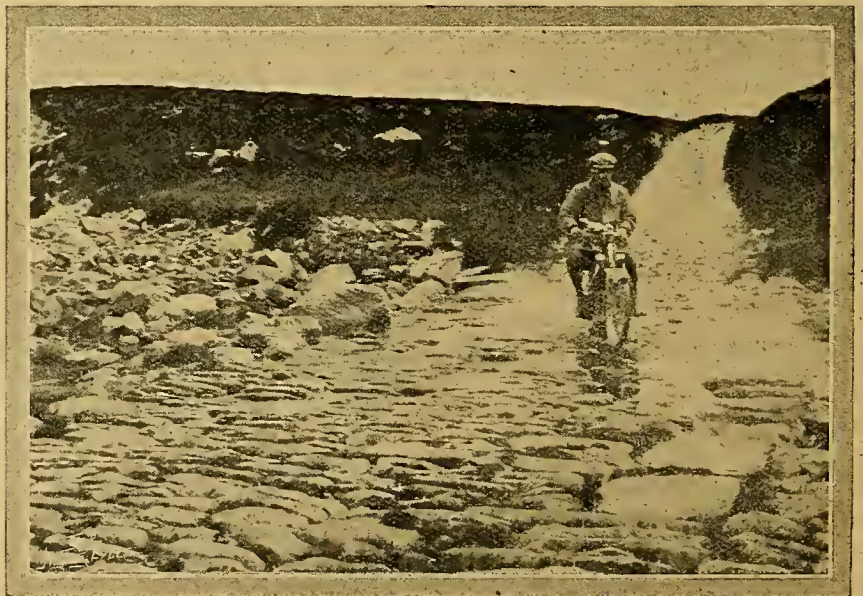
### A Machine on Fire.

The morning's incidents consisted of Hugh Gibson's Bradbury sidecar catching fire at the Brora check, when he restarted after filling his tanks, and of yet another accident to the unlucky A.J.S. sidecar, which collided with the well-known skew-bridge at Alness Moor. The poor passenger, who was unconscious for an hour after their first smash, is again badly cut, and the sidecar has been withdrawn. The subsequent proceedings interested me only by deputy, as I broke the high tension brush of my magneto, took the magneto to bits once in pouring rain to recover the pieces, and then took it down again in a stable to remove the water. In addition, I had to rebuild my front cover with canvas, and to mend four punctures in the back tyre, and so for the rest of the day I figured as an "also ran," and report by hearsay.

Quite a number of men were despairingly talking of retiring at lunch, until the sun came out. The remainder of the ride was quite enjoyable, though once more the stones prevented enjoyment of the truly gorgeous scenery. There are no finer views in Great Britain than can be found along the stretch from Dundonnell Inn to Kinlochewe *via* Gairloch, but rough going, added to grease, glued all eyes to the road.

### A Dangerous Bridge.

Just beyond Strathpeffer a T.T. machine was seen resting against Contin Bridge with its forks looking very drunk. It



R. A. Macmillan (Scott) at the water splash between Lairg and Hope. Observe the rocky surface.



**The Scottish Trials.**

turned out that poor Creyton had misjudged the bad corner, but escaped with a sprained wrist. There is some excuse for him, for in Scotland a solitary public house at cross roads may be granted a ten-mile limit, so that men grow apt to discount danger signs.

This particular death trap is only honoured by a red triangle, though in



George Brough, who rode a 6 h.p. single-gear twin Brough in the Scottish Trials.

England it would be guarded by a perfect forest of boards. A mile or two further on a six-cylinder limousine, lying sideways in a ditch, gave eloquent testimony to the roads. Poor Gibson has been less amusing than usual to-day; he has been gradually educating his passenger in corner work, and rumour asserts that he has been seen violently thumping his drowsy cargo when a sudden corner loomed up. But to-day his back wheel covers have given trouble, and, owing to the wobble, his back tyre rubbed against the stays until it burst. Pratt's foot is still troubling him; it turns out that crossing the "new road" at Lairg he fell over the side of the causeway, and his overalls catching on his machine, he was unable to extricate himself.

**Gruinard Hill.**

There was a great plague of midges along the lochside towards Gruinard, and at the turn of the bay the sand lay much deeper across the road than usual. Gruinard Hill proved an easy climb for nearly everybody. It consists of a short steep pitch, say 300 yards of 1 in 7 or so, with a corner at the bottom and a corner at the top. The corner at the top is very loose. (Details of the performances are appended.) Most of the men seemed to find Poolewe Hill more difficult, but there have been no difficult ascents to-day, and if it had not been for the rain we should have had quite a picnic.

Hutchinson appeared at Lairg with his Rex-Jap sidecar, which was delivered too late for the start from Edinburgh. He was missing last night, and I hear he upset on a corner near Aultnaharra, owing to his having no passenger; the front forks were broken, and his unofficial run thus comes to an untimely end. A bee flew down Fenn's collar, and as the Gairloch midges have also taken a particular fancy to him, he is very un-

happy. Hill has fixed up his broken handle-bar with a walking stick, but finds left-handed corners rather awkward, as the improvised bar fouls the tank.

**Observations on Hills (THURSDAY)**

Name of Machine and Rider.	Cairnwell.	Gruinard.
N. Soresby (3½ L.M.C.)	N.O.	Very good
R. A. Macmillan (3½ Scott)	Very good	Excellent
J. S. Holroyd (2½ Motosacchoe)	Pedalled	Excellent
S. J. K. Thomson (8 Bat sc.)	Top gear, very fast	Excellent
W. Pratt (3½ P. & M.)	Good	Excellent
A. G. Fenn (2½ Humber)	Good	Kicked
W. Creyton (2½ Humber)	Good	Retired
Frank Smith (5-6 Clyno)	Very good	Star performance
A. J. Sproston (3½ Rover)	Very good	Excellent
C. T. Newsome (3½ Rover)	Very good	Excellent
W. Houghton (3½ Bradbury sidecar)	Shed	—
W. G. McMinnies (3½ Triumph)	Fairly good	Ran alongside
J. F. Morrison (2½ Douglas)	Very good	Excellent
H. Gibson (3½ Bradbury sc.)	Stopped	Shed passenger
G. Griffith (6 Zenith)	Good	Excellent
E. B. Keiller (3½ Rudge)	N.O.	—
F. G. Edmond (3½ Humber)	Good	O
J. T. Wood (6 G.W.K. cyclecar)	Very good	Excellent
Bert Yates (3½ Humber)	Very good	Excellent
L. E. Cass (4½ Quadrant)	Fair	N.O.
I. Steel (3½ U.S.A.)	Fair	N.O.
P. W. Bischoff (3½ Triumph sidecar)	Stopped	Excellent
J. R. Alexander (7 Indian)	Good	Very good
R. Lord (6 Rex)	Good	Good
R. White (3½ Alldays-Matchless)	Fair	Very good
C. M. Keiller (8 G.W.K. Cyclecar)	Very good	Excellent
M. Pratt (3½ Alldays-Matchless)	Very good	Excellent
W. B. Gibb (2½ Douglas)	Very good	—
G. L. Fletcher (2½ Douglas)	Very good	Excellent
W. Westwood (3½ Triumph)	Very good	N.O.
G. Taylor (3½ Rudge)	Stopped	Stopped
F. Belgie (3 Hazelwood)	Stopped	—
George Brough (6 Brough)	Very good	Excellent
Vernon Taylor (3½ Rudge)	Fairly good	Excellent
H. G. Dixon (3½ New Hudson)	Fairly good	Excellent
H. Berwick (3½ New Hudson)	Very good	Excellent
J. Donaldson (3½ New Hudson)	Very good	Excellent
R. S. Hood (6 Brough)	N.O.	—
A. F. Downie (3½ Ariel)	Very good	Excellent
N. W. Downie (3½ James)	N.O.	Excellent
A. H. Alexander (2½ Douglas)	Very good	Very good
J. H. Begg (3½ Rudge)	N.O.	Excellent
H. Le Vack (2½ Motosacchoe)	Pedalled and ran	Retired
J. D. Morrison (5-6 Bat)	Very good	Ran alongside
P. E. Tolfree (3½ Bat)	N.O.	Excellent
D. D. South (3½ Rudge)	N.O.	Excellent
Miss Muriel Hind (6 Rex)	Stopped	Excellent
L. Newey (3½ Ariel)	N.O.	Excellent
C. K. North (3½ Ariel)	Stopped	Excellent
A. D. Scott (3½ Triumph)	N.O.	—
I. P. Macdonald (4 Norton)	Good	N.O.
G. E. Cuffie (7 Indian)	Very good	Excellent
C. W. Meredith (3½ Bradbury)	N.O.	Very good
J. Cocker (2½ Singer)	N.O.	Excellent
A. J. Dixon (3½ Singer)	N.O.	Excellent
R. Holloway (3½ Premier)	N.O.	Excellent
J. Oliphant (3½ Premier)	N.O.	Excellent
F. S. Douglas (8 Dot)	N.O.	—
R. G. Mundy	Very good	Excellent
B. A. Hill (7 Indian)	Excellent	Excellent
G. T. Gray (3½ Rudge)	Good	N.O.
A. U. R. Downie (2½ A.I.S.)	Very good	Excellent

N.O.: Not observed.

**An Additional Hill.**

The competitors are anxious about a rumour that the Kenmore side of Amulree Hill is to be inserted in the Saturday's route. It is true that the hills have been unnecessarily easy, not one of them containing *gradients* steep enough to test a multi-speeded 3½ h.p.—surface and corners have constituted the only difficulty on the test hills. It would seem unfair, however, to deprive men of their gold medals if they lose time on a hill which was not in the original schedule; the riders are quite agreeable to accept an optional hill-climb, provided that everybody who fails may go into

check by a loop road. From hints I have heard the hill-climbing tests in the 1913 Scottish Trials are to be positively stupendous. Frank Smith ran off the road while he was bending down to oil, and broke a stay of his sidecar frame.

**Renewing Broken Parts.**

Some controversy has been aroused about the use of spare parts. Alan Hill, after being charged on the Devil's Elbow by a non-competitor, wired for a spare handle-bar, but the judges refused permission to fit it, and only allowed him to repair the damaged bar in running time. This apparently stern decision was doubtless inspired by the cool audacity of other competitors, whose troubles were purely due to the fault of their machines. It is said that one well-known rider was actually caught in the act of mounting an engine borrowed from a non-competitor's machine, while several men walked calmly into the Oban and Grantown hotels with new wheels in their hands. As a consequence, the judges have taken a firm line.

G. T. Gray broke his magneto H.T. brush, and was towed six miles by the judges' car. He found this so uncomfortable that he decided to attempt a repair, and as the judges had pressed a tow upon him, they decided he should not be disqualified if he finished by midnight. The mishap occurred on Aultnamain Moor at 11 a.m., and after being towed to a farmhouse where he could work out of the rain, he put things to rights, and reached Gairloch at 11 p.m.

**Fifth Day, Friday, 130½ Miles.**

Route: Gairloch, Auchnasheen, Garve, Drumadrochit, Fort Augustus, and Inverness.

Friday morning opened fine, and out of the original seventy a depleted band of fifty-three stalwarts faced the starter.

Up to the Loch Maree Hotel the scenery was perhaps the finest of all we have seen. For the next ten miles to Auchnasheen the going was atrocious. The dips in these dirt roads often sink through the foundation, and then a canny Scot comes along and builds a cairn of stones over the place, and we ride over them and fall off.

The stretch from Loch Maree to Kinlochewe included some very perilous corners, some quagmire patches, and a long steep climb, on which many engines conked out last year. To-day there was no wind, and we all got up easily. There are so many variably-gearred hubs in the trial that we now describe hills in terms of those hubs. On these lines all the climbs before lunch were "middle gear hills."

After Auchnasheen we got some fine going into Garve, through rather deserted regions.

**A Terrific Thunderstorm.**

After Garve the roads were good through Muir of Ord and Beauly into Glen Urquhart, where a terrific thunderstorm burst right overhead, and in half a minute the roads were awash with water. Lightning seemed narrowly to miss one or two riders, and the down-pour was tropical in its intensity. Belt troubles followed instantaneously. One or two men, notably McMinnies and South, had started the trials with belt shields. Others had improvised guards



### The Scottish Trials.—

during yesterday's rain; Brough, for instance, had a huge sheet of lino surrounding his crank case. But the remainder were popping along at 10 or 12 m.p.h. on their bottom gears, and engines roared if the throttle was timidly opened.

The drivers of belt-driven sidecars had to dismount and run up perfectly contemptible hills.

### Jury Rigs.

Gibson appeared with Cocker in his sidecar, the latter's frame having collapsed near Invermoriston. Gibson has surmounted his cone troubles, but the puncture fiend visited him on seven occasions before lunch. Frank Smith's Clyno runs as rigidly as ever, the broken lug being safeguarded by a broomstick, straps, and lashings of cord.

The first arrivals at Fort Augustus enjoyed some little excitement, for there was no checker, no petrol, no oil, and lunch had not been ordered. However, a car presently rushed up, and everything was put to rights. As the day's run was very short (150 miles), and Fort Augustus is a most charming place, the judges granted us two hours for lunch.

The first person we met was W. B. Little, of whom we knew nothing except that he had retired near Oban on Monday. He was limping and bandaged. The back tyre of his Premier burst when he was travelling at 45 m.p.h. A wire arrived from Le Vack announcing that he had retired uninjured yesterday. He has sustained many minor troubles, and could not coax his lightweight up the hills.

### Ascent of Glendoe.

Three-quarters of a mile from the hotel begins the ascent of Glendoe. It commences with about a mile and a half of gradient, in short steps of 1 in 5, 1 in 6, and 1 in 7, separated by brief "landings" of 1 in 12 or 20. The surface is good, and the corners are negligible. In past trials it has proved rather formidable, but to-day there is nothing which can stop an alert man on a three-speeder. Practically all the survivors

made clean ascents, though a good number had nothing up their sleeves. Some of the men drove very badly; they allowed themselves to be deceived into the belief that the "landings" were level, and so they repeatedly changed up from first to second gear, and hastily changed down again when the engine knocked loudly.

The following are notes of individual performances:

Newsome (Rover): Fast, bottom gear.  
Pratt (P. and M.): Good, low gear.  
Holroyd (Motosacoche): Pedalled.  
Yates (Humber): Very good.  
Edmond (Humber): Not quite as fast.  
J. Alexander (Indian): Excellent.  
J. Steel (B.S.A.): Excellent.  
McMinnies (Triumph): Excellent.  
Griffiths (Zenith): Perhaps the fastest ascent.  
Sproston (Rover): Excellent.  
Morrison (Douglas): Phenomenal speed.  
Alexander (Douglas): Faster still.  
Westwood (Triumph): Stopped first ascent. Second climb good.  
Brough (Brough): On  $3\frac{1}{2}$  to 1 single-gear; a terrific ascent.  
Taylor and South (Rudge multis): Excellent.  
Frank Smith (Clyno sc.): Very good, (His ratios are  $4\frac{1}{2}$ , 8, and 14.)  
Fletcher (Douglas): Fair.  
Soresby (L.M.C.): Rather slow.  
Berwick (New Hudson): Very good.  
Macmillan (Scott) made a lovely climb.  
Thomson (Bat sc.): Went up easily.  
Cass (Quadrant): Very good.  
Morrison (Bat): Excellent.  
Newey and North (Ariels): Excellent; Newey halfway on middle gear.  
Keiller (G.W.K.): At a good speed.  
Wood's sister machine was equally fast.  
Bischoff (Triumph sc.), G. Taylor (Rudge), and Donaldson (New Hudson) arrived in a clump. Bischoff, clean ascent on bottom gear. Donaldson barely outstripped the sidecar; while Taylor's single gear took itself up.  
Fenn (Humber) ran alongside for a considerable distance.  
Pratt (Alldays): Very good.  
Holloway (Premier): Excellent.  
White (Alldays): Rather slow.

Meredith (Bradbury) and Dixon (Singer): Excellent.

Oliphant (Premier): Good.

### Another Severe Hill.

At this point I moved on to observe a renowned hill a mile further on, and when my own  $3\frac{1}{2}$  h.p. Triumph knocked to a standstill on a  $6\frac{1}{2}$  to 1 gear I knew I had missed some fun. This topmost hill is a continuation of Glendoe. There is a long drop after the first climb, ending in a sharp turn over a bridge. From this bridge there is a short steep pitch of, say, 1 in 6, followed by a few yards of 1 in 15, and then without any warning there comes a terrific S bend. The grade on the first corner is 1 in  $3\frac{1}{2}$  (official survey), and the second corner comes within twenty yards of the first.

The following made clean ascents: Both the G.W.K.'s, all three Premier machines, Newsome's Rover, Newey and North on Ariels, Downie's  $2\frac{1}{2}$  h.p. A.J.S., Miss Hind and R. Lord on Rex twins, Alexander's Douglas, Smith's Clyno, Mundy on the Marbeth, Meredith's Bradbury, Alan Hill's Indian, and Pratt's P. and M. All the rest failed, and a good number of them failed twice. I should add that Keiller's G.W.K. stopped through a mulled gear change, but that he adroitly restarted on the steepest patch.

This surprise tit-bit concluded the day's fiercer joys, and a peaceful run of thirty-three miles into Inverness was a pleasant conclusion. The going was excellent, but some lazy spirits noticed that the route-layer had failed to safeguard a short cut by a check, and so saved themselves seven or eight miles.

A meeting of the competitors is to be held this evening, at which the judges will probably announce:

(a) That several extra special prizes are to be awarded.

(b) That nobody need expect—unless he climbs Amulree from the Kenmore side.

(c) That riders may select the easiest route if preferred.

(d) That anybody who starts up Amulree must get up somehow.



Waiting outside the Fort Augustus check.

W. Pratt (P. & M.) and C. T. Newsome ( $3\frac{1}{2}$  h.p. Rover) in the pouring rain on Friday.



## The Scottish Trials.—

In response to these suggestions, the riders took a vote, and, as a majority were in favour of climbing Kenmore, the entire trial will go that way.

For list of marks lost in to-day's run see table at end of report.

## Last Day, Saturday, 178½ Miles.

Route: Inverness, Kingussie, across the Grampians, Pitlochry, Aberfeldy, up Kenmore side of Amulree, Crieff, Stirling, and Edinburgh.

The withdrawal of Macdonald and Cocker (see table) left thirty men still in possession of clean sheets, and there was an atmosphere of bated breath about the start, in view of the inserted climb at Amulree, perforce accepted by the competitors in view of the officials' firm stand at the meeting on Friday night.

J. Donaldson (3½ h.p. New Hudson) overslept himself, and though the official start was timed for 8 a.m., he did not wake till a few minutes before nine. He scrambled into his clothes, rushed to the garage, flattened his nose down on to the lamp bracket, and raced over the mountains. Having no watch or speedometer he was quite ignorant how he stood, but he reached the check at Kingussie, forty-five miles away, with a few seconds in hand.

## Over the Grampians.

The other men purred peacefully over the summit, for the Grampian road is now a first-class highway, broad and smooth.

Pot-holes of great depth, indented at frequent intervals, spoilt the last few miles into Pitlochry, where we lunched at Scotland's Hotel.

We had scarcely got away from Pitlochry before another Highland thunderstorm burst upon us. I ran out past Aberfeldy to inspect the Kenmore Hill before the men got there, and went straight up non-stop with a hot engine, without even having to trail my feet on the bends. This test run made it evident that the ascent would not cost any solo machine a gold medal. It is impossible either to "observe" or describe so long and tortuous a hill. It commences with single figure gradient, rising clean out of the Aberfeldy-Killin Road at an angle of thirty degrees or so, and a good rush can be snatched off the bridge. The road is very narrow and stony, with here and there great slabs of rock jutting out of the track. There are at least eight corners which necessitate slowing right down, and at least two of them are genuinely difficult, but there is no terrific combination of corner and gradient at any given point.

The sidecars and cyclecars were started last this morning, lest they should stick on the hill, and baulk the bicycles. The following appeared to make absolutely clean ascents: Newsome (Rover), Pratt (P. and M.), Alexander (Indian), Macmillan (Scott), Fletcher (Douglas), Meredith (Bradbury), Holloway (Premier), A. U. R. Downie (A.J.S.), and Miss Hind (Rex).

I may add that all three official cars (modern vehicles of good horse-power) stuck on the hill.

The following made good ascents, although not actually clean climbs: Holroyd (Motosacoche), Griffiths (Zenith), Cass (Quadrant), Alexander (Indian),

Brough, Alexander (Douglas), Downie (A.J.S.), R. Lord (Rex), F. Smith (Clyno), and Keiller (G.W.K. cyclecar).

Rain fell in sheets for most of the fifty-five miles which separated us from Edinburgh, and belt-slip hindered most of us. The back cover of Alan Hill's 7 h.p. Indian burst thirty miles from home—a sickening *contrecleps* with a gold medal almost in one's grasp. We saw him under the trees with his back wheel out, assisted by passing motor cyclists, and we thought his medal was doomed, but a little later as we trickled through a ten-mile limit he roared past at terrific speed, and he just got in to time, amidst general congratulations.

The crowd at the finish was as large as ever, in spite of the mud and rain. The flooded roads gave us one piece of information. We thought the gigantic pot-holes for which most of the Scotch main roads are remarkable were ascribable either to carelessness or to parsimony, but we saw to-day that they serve one very useful purpose. We passed through one village where there was a deep pot-hole full of water to each square yard of road and a duck in almost every pot-hole!

BASIL H. DAVIES.

## Special Awards.

PRIVATE OWNERS' PRIZE (*The Manufacturers' Union Trophy*), value £10 10s.

R. A. Macmillan (3½ h.p. Scott).

TRADE RIDERS' PRIZE:

W. Pratt (3½ h.p. P. and M.).

PASSENGER MACHINE PRIZE:

C. M. Keiller (8 h.p. G.W.K. cyclecar).

LIGHTWEIGHT PRIZE:

A. U. R. Downie (2½ h.p. A.J.S.).

TEAM PRIZE:

The Indian Team (J. R. Alexander, B. A. Hill, and G. E. Cuffe, 7 h.p. Indians).

## TABLE OF AWARDS AND MARKS LOST.

RIDER AND MACHINE.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	TOTAL.	REMARKS.
R. A. Macmillan (3½ Scott)	0	0	0	0	0	0	0	Gold medal
J. S. Holroyd (2½ Motosacoche)	0	0	0	0	0	0	0	Gold medal
W. Pratt (3½ P. & M.)	0	0	0	0	0	0	0	Gold medal
Frank Smith (5-6 Clyno sc.)	0	0	0	0	0	0	0	Gold medal
C. T. Newsome (3½ Rover)	0	0	0	0	0	0	0	Gold medal
W. G. McMinnies (3½ Triumph)	0	0	0	0	0	0	0	Gold medal
J. F. Morrison (2½ Douglas)	0	0	0	0	0	0	0	Gold medal
G. Griffith (6 Zenith)	0	0	0	0	0	0	0	Gold medal
F. G. Edmond (3½ Humber)	0	0	0	0	0	0	0	Gold medal
Bert Yates (3½ Humber)	0	0	0	0	0	0	0	Gold medal
P. W. Bischoff (3½ Triumph sc.)	0	0	0	0	0	0	0	Gold medal
J. R. Alexander (7 Indian)	0	0	0	0	0	0	0	Gold medal
C. M. Keiller (8 G.W.K. cyclecar)	0	0	0	0	0	0	0	Gold medal
M. Pratt (3½ Alldays-Matchless)	0	0	0	0	0	0	0	Gold medal
W. Westwood (3½ Triumph)	0	0	0	0	0	0	0	Gold medal
George Brough (6 Brough)	0	0	0	0	0	0	0	Gold medal
Vernon Taylor (3½ Rudge)	0	0	0	0	0	0	0	Gold medal
H. Berwick (3½ New Hudson)	0	0	0	0	0	0	0	Gold medal
J. P. Morrison (5-6 Bat)	0	0	0	0	0	0	0	Gold medal
W. D. South (3½ Rudge)	0	0	0	0	0	0	0	Gold medal
F. C. North (3½ Ariel)	0	0	0	0	0	0	0	Gold medal
C. W. Meredith (3½ Bradbury)	0	0	0	0	0	0	0	Gold medal
A. J. Dixon (3½ Singer)	0	0	0	0	0	0	0	Gold medal
R. Holloway (3½ Premier)	0	0	0	0	0	0	0	Gold medal
J. Oliphant (3½ Premier)	0	0	0	0	0	0	0	Gold medal
R. G. Mundy (Macbeth-Precis'n)	0	0	0	0	0	0	0	Gold medal
B. A. Hill (7 Indian)	0	0	0	0	0	0	0	Gold medal
J. Donaldson (3½ New Hudson)	0	0	0	0	0	0	0	Gold medal
A. U. R. Downie (2½ A.J.S.)	0	0	0	0	0	0	0	Gold medal
G. L. Fletcher (2½ Douglas)	0	0	0	0	0	0	0	Award undecided
A. H. Alexander (2½ Douglas)	0	0	0	0	0	0	3	Disqualified
J. Steel (3½ B.S.A.)	0	18	1	0	0	0	19	Silver medal
N. W. Downie (3½ James)	0	0	0	0	0	38	38	Silver medal
A. J. Sproston (3½ Rover)	0	0	36	0	5	0	41	S.M. * Lost way and punctured
L. Newey (3½ Ariel)	0	0	0	52	0	0	52	Silver medal
R. Lord (6 Rex)	1	0	3	38	0	15	57	S.M. * Helping Miss Hind
Miss Muriel Hind (6 Rex)	1	0	3	38	14	3	59	S.M. * Tyre troubles
L. E. Cass (4½ Quadrant)	0	60	0	0	0	0	60	S.M. * Hit a bridge
J. H. Begg (3½ Rudge)	0	0	0	0	60	0	60	Silver medal
G. T. Gray (3½ Rudge)	0	0	0	60	0	0	60	S.M. * Magneto breakage
R. White (3½ Alldays-Matchless)	0	0	60	0	0	8	68	S.M. * Broken spokes, front wheel
H. Gibson (3½ Bradbury sc.)	0	0	0	60	15	0	75	* Back wheel cones and burst tyre, award undecided
G. E. Cuffe (7 Indian)	0	0	0	0	0	60	60	Silver medal
A. F. Downie (3½ Ariel)	0	0	60	0	0	22	82	Bronze medal. * Tyres, etc.
S. J. K. Thompson (8 Bat, sc.)	0	0	60	0	0	60	120	B.M. * Broken steering stem
G. Taylor (3½ Rudge)	0	60	0	0	0	31	91	Bronze medal
J. T. Wood (8 G.W.K. cyclecar)	0	60	60	0	0	0	120	B.M. * Collision, sheared hub ke.
P. E. Tolfree (3½ Bat)	0	60	60	0	46	30	196	B.M. Weak on hills
G. E. Whitehouse (3½ Rover)	0	54	41	60	60	47	256	B.M. Weak on bills
N. Soreby (3½ L.M.C.)	0	0	44	0	0	0	44	Disqualified, towed 8 mls. Friday
A. G. Fenn (2½ Humber)	0	0	0	0	60	Ret.		* Tyres. † Hit bridge at Contin
W. Creyton (2½ Humber)	0	0	23	† Rtd.				* Hit bridge
C. W. Munro (2½ Douglas)	0	* Rtd.						* Broke sidecar axle
W. Houghton (3½ Bradbury, sc.)	0	* Rtd.						
J. E. Chisholm (3½ James)	0	60	Ret.					
E. B. Keiller (3½ Rudge)	0	60	Rtd.					
W. B. Gibb (2½ Douglas)	0	0	Rtd.					
Duncan Bell (5 A.J.S., sc.)	1	*60	*60	Rtd.				Disqualified
F. Begley (3 Hazlewood)	0	0	0	Rtd.				* Accidents due to h'bar twisting
H. G. Dixon (3½ New Hudson)	0	Rtd.						Stripped outs of front fork
R. S. Hood (6 Brough)	0	60	Rtd.					Gudgeon pin burst cylinder wall
G. Bell (3½ New Hudson)	1	60	0	Rtd.				
A. A. Hay (3½ Quadrant)	0	Rtd.						Ran into a gate
T. Silver (3½ Quadrant)	0	Rtd.						Hit a wall
W. B. Little (3½ Premier)	0	Rtd.						
H. Le Vack (2½ Motosacoche)	0	13	24	Rtd.				
A. D. Scott (3½ Triumph)	60	Rtd.						General troubles
I. P. Macdonald (4 Norton)	0	0	0	—	Rtd.			
J. Cocker (2½ Singer)	0	0	0	0	Rtd.			Broken frame
F. S. Douglas (3 Dot)	18	60	60	Rtd.				General troubles



# Sheffield Club's Open Hill-climb.

THE Sheffield and Hallamshire Motor Cycle Club's open hill-climb was held on Saturday last on a hill near Chesterfield, locally known as Slack Hill. This hill, sometimes called Amber Hill, is on the main Chesterfield-Matlock Road. It is a long pull of nearly a mile, commencing with a straight gradual rise, then a bend



General view of the start, looking towards the summit of Slack Hill.

to the right on a gradient of about 1 in 6—the steepest part—followed by a more severe twist to the left, and culminating in about a quarter of a mile of 1 in 10. The surface is more gritty than in the case of the average Derbyshire hill, consequently the road was not greasy, despite the heavy rain.

The weather did not favour the organising club, for shortly before the advertised time of starting a violent thunderstorm broke over the district. So violent was it that when we passed through Chesterfield the water was pouring through the lower rooms of a row of houses, the frightened occupants retreating with articles of furniture.

The road from Sheffield via Chesterfield was completely cut off by a swollen river. At the top of the hill a car containing several officials, and belonging to the president of the Sheffield Club, Mr. Bisby, was struck by a flash of lightning, and some of the paint and metalwork damaged; the occupants, however, escaped injury.

## CLASS 1.—Lightweights up to 350 c.c.

In Class 1, E. Woods (2½ Levis) made a very good ascent. H. C. Newman (Ivy) made a very fast climb, as also did J. Dudley on a 2½ Hobart-Precision. Mrs. Carter, the only lady competitor, failed at the corner. Result:

	M. S.	Fig. of merit.
S. Philpott (2 Humber) ...	1 56 <sup>3</sup> / <sub>5</sub>	83.3
H. C. Newman (2½ Ivy) ...	1 17 <sup>4</sup> / <sub>5</sub>	90.2
J. Dudley (2½ Hobart-Precision) ...	1 28 <sup>4</sup> / <sub>5</sub>	103.4

## CLASS 2.—Lightweights up to 350 c.c.

J. Haslam on his T.T. Douglas rode well, especially at the corner, whilst Dan Bradbury on an overhead valve New Hudson would no doubt have made fastest time had it not been for misfiring when in sight of the finishing banner, the magneto terminal having come loose. R. N. Corah on a small red twin also made good time. Result:

D. Bradbury (2½ New Hudson) ...	1 30	73.4
J. Haslam (2½ Douglas) ...	1 12 <sup>3</sup> / <sub>5</sub>	84.7
H. Petty (2½ Singer) ...	1 36 <sup>1</sup> / <sub>5</sub>	86.1

## CLASS 3.—Standard singles up to 560 c.c.

H. C. Newman again made the fastest climb in this class, coming well round the corner. R. Flint (Norton) also rode steadily and well. Dan Bradbury on his Norton made a good climb. Result:

	M. S.	Fig. of merit.
D. Bradbury (Norton) ...	1 9 <sup>1</sup> / <sub>5</sub>	88.9
H. C. Newman (Ivy) ...	1 23 <sup>3</sup> / <sub>5</sub>	98.5
S. Sawyer (Premier) ...	1 11 <sup>5</sup> / <sub>5</sub>	98.7

## CLASS 4.—T.T. singles up to 500 c.c.

This was the best supported event. Especially good climbs were made by H. Eardley and F. Dover (Premiers), R. Flint (Norton), E. L. Moxley (B.S.A.), and W. F. Newsome (Triumph), but all those mentioned were overshadowed by H. C. Newman (Ivy-Precision). Newman was apparently geared higher than usual, but he shot up the 1 in 6 section like a rocket. S. Crawley (Triumph) exhibited more dash than Newsome at the bends, but as he had to switch off several times we doubt if he saved a second thereby.

D. Bradbury (Norton) ...	1 8	87.4
E. L. Moxley (B.S.A.) ...	1 24	90.8
H. C. Newman (Ivy) ...	1 30 <sup>1</sup> / <sub>5</sub>	99.8
K. Clark (Corah) ...	1 31 <sup>1</sup> / <sub>5</sub>	100.1
H. Eardley (Premier) ...	1 50 <sup>1</sup> / <sub>5</sub>	100.9
G. S. Hall (Scale-Jap) ...	1 30	101.1
FASTEST TIME: R. Flint (Norton) ...	1 20 <sup>1</sup> / <sub>5</sub>	103.2

## CLASS 5.—Standard multi-cylinders up to 1,100 c.c.

This event was rather disappointing, the big twins not making much better time than the singles, although A. B. Wade (6 h.p. Zenith) rode splendidly. Jack Haslam, on a similar mount, appeared to wobble slightly at the corner, but recovered himself.

A. B. Wade (6 Zenith) ...	0 59	117.4
Jack Haslam (6 Zenith) ...	1 54	127.6
T. Roper (7 Indian) ...	1 9 <sup>5</sup> / <sub>5</sub>	162.4

The twins, with the exception of Wade's Zenith, which made fastest time of the day in this event, were again slow. Result:

A. B. Wade (6 Zenith) ...	0 58	115.3
Jack Haslam (6 Zenith) ...	1 5	126
R. Garnett (6 Matchless) ...	1 12 <sup>3</sup> / <sub>5</sub>	132.4

## CLASS 7.—Sidecars and cyclecars.

This was carried out in the pouring rain, the competitors having the course to themselves, all the spectators having scrambled to shelter. A. B. Wade made a third exceedingly fine ascent, but the best performance was undoubtedly that of H. C. Newman, whose 3½ h.p. Ivy brought the rider and sidecar up at a wonderful speed, the passenger being obliged to lean over on the bends to keep the wheel down.

The Gordon cyclecar started well, but commenced misfiring at the corner, and did not finish the climb. Result:

H. C. Newman (3½ Ivy) ...	1 30 <sup>5</sup> / <sub>5</sub>	89.3
A. B. Wade (6 Zenith) ...	1 19	93.8
Jack Haslam (6 Zenith) ...	1 34 <sup>4</sup> / <sub>5</sub>	100.2
H. P. Jeffries (6 Zenith) ...	1 45	120

The general arrangements were very good, the only delays being occasioned by a small amount of traffic on the hill, but a telephone installation prevented any possibility of collisions.



K. Clark (3½ h.p. Corah-Jap) negotiating the second bend on Slack Hill.



# ENGLISH-DUTCH RELIABILITY TRIAL.

FINAL ARRANGEMENTS FOR THE INTERNATIONAL TRIAL ON AUGUST 5th.

THE arrangements for the above trial are now complete. On Saturday next, the majority of the British riders will leave Liverpool Street, London, by the 4.10 p.m. boat train, and will be met by the remainder of the party at Parkeston Quay, Harwich. Every competitor must report himself to the captains, Messrs. Cooper and Pratt, by 6 p.m. The boat leaves for the Hook of Holland at 10 p.m., and is due at 5.15 a.m. The hon. secretary of the Dutch Motor Cycle Club and members of the council will be in waiting to welcome the English competitors.

Number-plates and the complete regulations have been issued to all competitors.

The final selection of the British team is as follows:

## PRIVATE OWNERS.

Class A.—For machines up to 350 c.c.

No. E2. Geoffrey Smith (2½ h.p. Humber).

E8. C. Maurice Down (2½ h.p. Enfield).

E34. F. C. Wasley (2½ h.p. Douglas).

Reserves: F. A. Hardy (Norton) and J. C. Bennett-Mitchell (2½ h.p. Douglas).

Class B.—For machines from 350 to 500 c.c.

E22. Vernon Taylor (3½ h.p. Rudge).

E28. Fred Dover (3½ h.p. Premier).

E36. E. Lester (3½ h.p. P. and M.).

Reserve: Seymour Smith (3½ h.p. Norton).

Class C.—For machines from 500 to 1,000 c.c.

E24. W. Cooper (3½ h.p. Bradbury).

E30. C. W. Wilson (Morgan Runabout).

E14. A. E. Uffleman (6 h.p. Rex-Jap).

Reserve: W. O. Oldman (Bat).

## TRADE TEAM.

Class A.—For machines up to 350

E4. W. W. Douglas (2½ h.p. Douglas).

E10. R. Holloway (2½ h.p. Premier).

E16. Sam Wright (2½ h.p. Humber).

Reserve: H. Graham Dixon (2½ h.p. New Hudson).

Class B.—For machines from 350 to 500 c.c.

E20. W. F. Newsome (3½ h.p. Triumph).

E26. W. Pratt (3½ h.p. P. and M.).

E32. J. H. Slaughter (3½ h.p. New Hudson).

Reserve: F. C. North (3½ h.p. Ariel).

Class C.—For machines from 500 to 1,000 c.c.)

E6. Frank Smith (5-6 h.p. Clyno sc.)

E12. F. W. Barnes (6 h.p. Zenith sc.)

E18. F. A. Applebee (3½ h.p. Scott sc.)

Reserve: R. Lord (6 h.p. Rex Sidette).

Tuesday will be spent at Volendam, and the evening at Amsterdam. On Wednesday the English party return home after visiting Haarlem, Lisse, Ouden Deyll, and the Hague. The boat leaves the Hook at 11.50 p.m., but the G.E.R. advise the whole party to be at the Hook not later than 8 p.m.

## Preliminary Stages of A.C.U. Silencer Trials.

AS announced in these pages, the preliminary portion of the silencer trial was devoted to establishing a standard of silence to which the silencers ultimately entered will be required to attain. Thanks to the courtesy of Messrs. Auto Carriers, Ltd., Ferry Works, Thames Ditton, their splendidly equipped factory was placed at the disposal of the Union, and the principals of the firm, Messrs. John Weller, J. Portwine, and H. Carr, together with their foreman, rendered valuable assistance.

In addition, those present were: Col. H. C. L. Holden, F.R.S., R.A., C.B., Messrs. A. M. Low, A. Sharp, J. W. G. Brooker, V. Hart, E. M. P. Boileau, the Secretary and the Assistant Secretary representing the Auto Cycle Union, while Mr. John V. Pugh (Rudge-Whitworth, Ltd.), and Messrs. F. Hulbert and C. Hathaway (Triumph Cycle Co.) represented the trade.

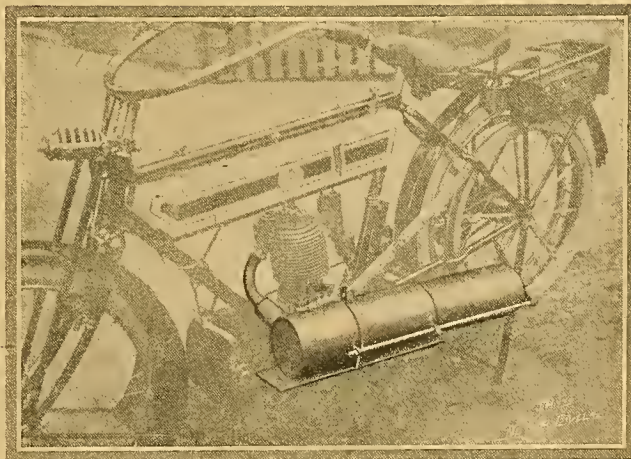
### The Experimental Silencer.

As previously mentioned in *The Motor Cycle*, the experimental silencers consisted of a cylinder 5in. diameter by 12in. long, into which a slightly smaller tube was telescoped and rendered adjustable. The inner tube had an outlet about 1¼in. in diameter. These experimental silencers were fitted to a Triumph and a Rudge, placed at the disposal of the A.C.U. by their manufacturers.

Mr. H. P. Beasley, under the direction of Col. Holden, rode the machines in turn. First the silencer was used with the inner tube shut right in, then half extended, and then fully extended, each time at varying speeds. The best results as regards quietness were obtained with the tube half extended, while full extension resulted in rendering the sound peculiarly metallic.

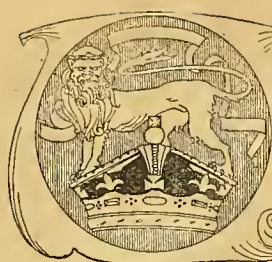
The committee were not satisfied with the results obtained, and so a 1in. pipe 9in. long was fitted to the outlet of the experimental silencer.

The results were then adjudged to be satisfactory, and it was finally determined that a silencer which would give the correct standard of quietness should be made up of a size 5in. diameter by 12in. long, with an outlet pipe 10in. long and 5⁄8in. bore. The original 1in. outlet was found to be too large, and so a 5⁄8in. tube was fitted inside it. The Triumph was fitted with an extra small exhaust pipe to fit the experimental silencer. The Rudge exhaust pipe was of standard size. The dimensions of the final silencer will be sent to all intending entrants, so that they may know the requisite degree of quietness.



The experimental silencer fitted to a Triumph It is shown extended.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Aug. 1st	...	8.48 p.m.
" 3rd	...	8.44 "
" 5th	...	8.41 "
" 7th	...	8.37 "

## Next Monday's Brooklands Meeting.

S. L. Bailey will compete at Brooklands on Monday next on a 2½ h.p. Douglas. His name was omitted from the official list of entrants published on page 856.

## Three-speed Gears for 1913.

The Sturmey Archer Gear Co. are bringing out a slightly enlarged pattern of the S.A. three-speed hub gear suitable for powerful machines, particularly when used with a sidecar. We understand that there will be practically no alteration to the gear, but the hub barrel will be larger in diameter, and the width over the cones increased.

## Through Floods on a Sidecar.

An exciting experience befell the writer last Saturday whilst driving a Singer sidecar on the way to the Sheffield Club's open hill-climb. During lunch at Bakewell there was a cloud burst in the Peak District, water running down the hillsides and quickly flooding road and railway track. After the storm, a start was made for Slack, the scene of the hill-climb, but near Haddon Hall we were confronted by a sheet of water a yard deep which held up a number of cars and excursion parties. As progress this way was impossible, a return had to be made to Bakewell and another outlet attempted via Chesterfield Road until the turning to Edensor and Chatsworth was reached. Passing through several water splashes, a further sheet of water, about six to eight inches deep, was encountered at Edensor, and it extended for several hundred yards into Chatsworth Park. This successfully negotiated, a mile or two further on the deepest water splash of the lot barred entry to Rowsley village. The water was quite a foot deep in the roadway and six inches on the footpath. By riding the sidecar at a great angle with the bicycle wheels on the pathway and the sidecar wheel in the road with water above the axle, Rowsley was eventually reached, and the journey continued without further incident. Luckily it so happened that the machine we were riding—a 4 h.p. two-speed Singer—was the most suitable motor cycle possible. The high magneto position was ideal, for the machine never misfired, and it is further testimony to the big counter-shaft driving pulley when we state that, on the level at any rate, the Dunlop rubber belt would grip with the pulleys submerged in water.

## Midland Reliability Trial.

The South Birmingham M.C.C. trial over a 109 miles course, including Farlow Bank and Ankerdine Hill, was decided last week-end. Only three competitors climbed Farlow, and this decided the result, which was: 1 (dead-heat), J. J. Woodgate (2½ h.p. Singer) and S. A. Rowlandson (3½ h.p. Rudge multi); 3, S. K. Jones (3½ h.p. L.M.C.).

## AUGUST BANK HOLIDAY.

Owing to the above Holiday, the issue of "The Motor Cycle" for August 8th will be closed for press earlier than usual. All copy and instructions for paragraph advertisements in this issue must therefore be in our hands not later than first post on Thursday, August 1st.

## Pedestrians' Rights in Austria.

The Vienna police, being of the opinion that pedestrians are chiefly to blame for street accidents, have issued a notice to the effect that a pedestrian, if he wish to cross the road, must do so in a direct line, taking the shortest path. Persons found walking along the street lengthwise and thus endangering their own safety and that of others will be reprimanded by the police, and in the case of their not complying with such directions will be subject to fines varying from 1s. 6d. to £8. We can imagine the clamour that the mere proposal to institute such a regulation in this country would create.

## SPECIAL FEATURES.

THE SCOTTISH TRIALS  
Complete Report and Tabulated List of Awards.

R.A.C. AND ASSOCIATED CLUBS'  
GALA DAY.

SHEFFIELD OPEN HILL-CLIMB.

## Hill-climbing.

A. G. Cox, 89, Gladstone Road, Smethley, Birmingham, informs us that recently made an ascent of Great Orme Head, Llandudno, on a 2½ h.p. Bala Levis geared 6½ to 1.

## Behaviour on the Scottish Trials.

We regret to report that the behaviour of a certain section of the competitors at certain hotels left much to be desired. The riders stayed in every instance in first-class hotels. Some of them off fireworks during the hotel dinner one town, and at another they wrecked the largest smoking room, which looked next morning as though it had been bombarded, while they made a great uproar until well on in the small hours disturbing the regular guests.

We may say two things about such conduct. It is a pity to create an impression that motor cyclists as a class are bounders, and it is a pity to complicate the already very difficult task of arranging hotel accommodation. The suggestion of a rule that a repetition of such conduct would entail disqualification appears to be the best remedy for such absurd manners.



THE SCOTTISH TRIALS. Climbing Wednesday's test hill in a cloud of smoke. (3½ h.p. Scott, winner of the private owners' class.

R. A. Macmillan.



**A.C.U. Six Days' Trials.**

Entries at ordinary fees for the above trial closed on the 29th ult. Late entries will be accepted at double fees up to Saturday next.

**3½ h.p. ties with an 8 h.p. Machine.**

A particularly good performance at the Newton Coldfield A.C. hill-climb was that of K. Clark riding a 3½ h.p. Corah-Jap. His rider tied with F. Shakespeare on an 8 h.p. Rex-Jap for fastest time of the year.

**Mont Ventoux Meeting.**

It is interesting to note, in connection with the above meeting, which will be held on August 10th and 11th, that the record for the hill-climb is held by Amberjack on a twin Griffon motor cycle—25m. 40s. Will anybody beat his time on an up-to-date mount?

**Good Climb.**

Lynton Hill, Lynmouth, one of the test hills in the A.C.U. Six Days Trials, was climbed on a single-gear light weight last Thursday. Herbert Bunce, of Atherhan, was the rider, his mount being a 2½ h.p. Premier. He tells us that the machine negotiated both hairpin bends without pedal assistance.

**Observers in the Six Days' Trials.**

Motor cyclist observers are urgently required for the Six Days' Trials. Many riders could well spend an enjoyable time in the beautiful West Country, see the most interesting phases of the trial, which will probably be the biggest the A.C.U. has ever held, and at the same time under the governing body valuable assistance. Those who feel disposed thus to under the Union a service should communicate at once with the secretary, Mr. W. Loughborough, 89, Pall Mall, S.W.

**Auto Cycle Union Notes.**

**THE F.I.C.M.**—As has been previously mentioned in these pages, the Auto Cycle Union is exerting every effort to establish the International Federation of Motor Cyclists. Mr. T. W. Loughborough, the secretary of the A.C.U., informs us that he recently had a visit from Mr. G. Sweerts, a representative of the French paper *L'Aero*, and this journal will use its influence with the clubs in France, Belgium, and Germany. Mr. W. H. Wells is now on a visit to America, and has promised to interview the Federation of American Motor Cyclists on the subject, while the A.C.U. itself is in communication with the leading clubs of other countries. It has been suggested that as soon as the Federation has been formed a meeting should be held in London. This will probably be during show week.

**TYRE TESTS IN THE SIX DAYS'.**—It was mentioned recently in *The Motor Cycle* that the tyre section of the Manufacturers' Union had resolved not to enter their tyres in the six days' trials. This resolution has now been rescinded. A meeting was held at the Holborn restaurant last week, at which several tyre manufacturers expressed their desire to enter despite the resolution. Up to the present the A.C.U. has received entries from the Palmer Tyre, Ltd.—one of Palmer tyres, 25in. x 3in., which will be used by R. C. Davis. Five Rom

**FUTURE EVENTS**

- Aug. 2.—Bristol B.&M.C. Open 24 Hours' Trial to Land's End and back  
 3.—Cumberland C.M.C.C. Open Speed Trials.  
 3.—Mersey M.C. Open Hill-climb on Pen-y-Ball, Flintshire.  
 3 5.—M.C.C. Reliability and Brake Testing Trial in Devonshire.  
 12-17.—A.C.U. Six Days' Trials.  
 31.—Coventry and Warwickshire M.C. Annual Open Hill-climb.

tyres (Rom Tyre and Rubber Co.) have also been entered, consisting of 26in. x 2½in. tyres for the front wheels, and 26in. x 2½in. tyres for the rear wheels, which fit 2½in. rims. The Stellastic Tyre Co., 76, York Street, Westminster, S.W., who are bringing out a new tyre in which steel wire is interwoven in the tread, have entered twelve tyres. J. Pedley and Son, Ltd., have entered Pedley tyres and belts, and the Wood-Milne Co. and Leicester Rubber Co. are expected to enter their tyres. The Service Co. have also entered three belts.

**SIX DAYS' TRIALS ARRANGEMENTS.**—It has been arranged to store the machines in the Drill Hall, Taunton, and as the hall has had to be hired competitors will be asked to pay the nominal fee of 6d. per night for the accommodation. Machines will be on view to the public in the Drill Hall on Monday, Tuesday, and Friday, August 12th, 13th, and 16th, from 8 to 10 p.m., and on Wednesday and Thursday, August 14th and 15th, from 9 to 10 p.m., admission 1s. The aid of 150 boy scouts has been invoked to mark the course, and all the R.A.C. guides in the West of England will render their assistance.

**Oxford M.C.C. Open Speed Trials.**

The open speed trials promoted by the Oxford M.C.C., which were to have been held on Saturday last at Heythrop Park, near Chipping Norton, were cancelled at the last moment owing to lack of trade entries.

**Unsuitable Lamps**

At a coroner's inquest held at Bromley (Kent) on D. H. Foote, a member of the Putney M.C., who unfortunately met with his death through colliding with the rear of a market cart at Bromley early in the morning, the evidence showed that he was using an ordinary pedal cycle lamp. There was no rear lamp on the cart, but the side lamp had a small red glass at the back. Deceased and two other members of the club had been unable to obtain overnight accommodation at an hotel on the Westerham road, and were riding to Bromley.

**Two-wheeled Sidecars and Taxation.**

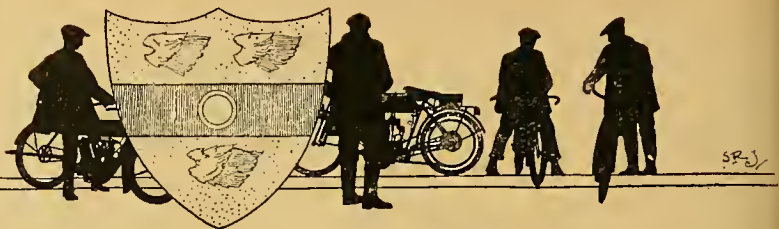
An interesting case to owners of Lowen sidecars was heard at the Bury Court on Thursday last, when W. T. Booth, Bury, was summoned in three cases for driving an unregistered motor car, having no identification plate on same and no rear light. The evidence proved that the defendant was using a two-wheeled sidecar, and the ruling of the Court was that as it had four wheels it ought to have been registered as a motor car, and should have complied with the motor car regulations. The defendant's legal representative asked the magistrate's Clerk if he would call a motor cycle and trailer a motor car? The witness replied, "No, sir." He was then asked if he did not say that a motor vehicle with four wheels was a motor car, and his reply was, "Not exactly." The Court ruled that the particular sidecar and motor bicycle was a motor car within the meaning of the Act, and that the defendant must, in future, carry a rear light and pay the car licence fee. Defendant was ordered to pay the costs of the three cases.



**SHEFFIELD OPEN HILL CLIMB.**  
 W. F. Newsome (3½ h.p. Triumph) on the first bend. The gradient is steepest at this point.



# CLUB NEWS



## Western District M.C. (London).

A large number of members visited Brooklands on Saturday last, and much enjoyed the programme provided.

## Goulburn (N.S.W.) M.C.

At a meeting of the club held on the 14th June, Mr. W. G. Thompson gave an interesting lecture on the magneto, describing the construction in detail. A two days' run will shortly take place to Chatsbury.

## Walthamstow M.C.

The two hundred mile standard reliability trial held on the 21st ult. to Norwich and back resulted as follows: 1, A. T. Peppercorn ( $3\frac{1}{2}$  Bradbury), silver cup; 2, W. Wilson ( $2\frac{1}{2}$  S.I.A.M.T.), silver cup; 3, T. Danaker ( $3\frac{1}{2}$  Humber), silver cup.

## Nottingham and District M.C.C.

There will be a reliability run on the 5th inst. to Bowes and back for a cup presented by Humber, Ltd. A club hill-climb will be held on the 17th inst., and a passenger machine trial on the 31st inst. for a silver cup presented by the New Hudson Cycle Co.

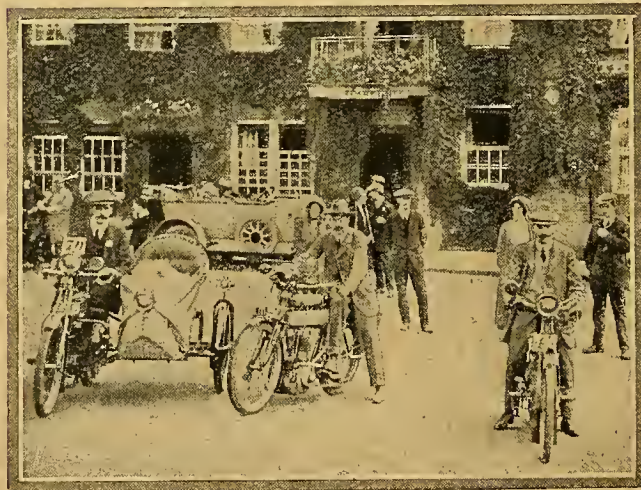
## Luton and South Beds. M.C.C.

On the 27th ult. a paperchase was run off, starting from Luton and finishing at the Bridgwater Arms, Little Gaddesden. F. Mussell (Rex sc.) and Deacon (Rudge), the hares (twenty minutes' start), successfully eluded the hounds, numbering about twenty. Gutteridge (Rudge) was the first man in, about ten minutes after the hares. After tea an impromptu speed-judging and speed trial was run off, with the result that Gutteridge was first, Karslake second, and Jarvis third.

## Willesden Green C. and M.C.C.

A speed-judging and reliability trial was held on the 20th ult. to Bicester and back. Out of seventeen starters fifteen finished. Result: 1, J. W. Buhner ( $2\frac{3}{4}$  h.p. Douglas), lost 9 marks; 2, C. W. Sufford ( $3\frac{1}{2}$  h.p. Humber and sc.), lost 10 marks; 3, F. W. Lemming (5-6 h.p. F.N.), lost 11 marks.

The club has made arrangements for a clubhouse in Willesden Green. Hon. sec., Mr. J. C. Ball, 166, Chapter Road, Willesden Green, N.W.



The three winners in the Birmingham M.C.C. speed-judging competition. W. H. Egginton ( $3\frac{1}{2}$  h.p. New Hudson sidecar), Seymour Smith ( $3\frac{1}{2}$  h.p. Norton), and S. K. Jones ( $3\frac{1}{2}$  h.p. L.M.C.) outside the Swan's Nest, Stratford-on-Avon.

## Goole M.C.C.

This newly formed club has a membership of twenty-five. A run to Blackpool will take place shortly. The hon. sec. is Mr. T. Huntingdon, Onsedene, Goole.

## Mersey M.C.

The date for receiving entries for the open hill-climb on August 3rd has been extended to noon on August 2nd. Late entries at double fees will be accepted on the morning of the race.

## Finsbury Park C.C. (Motor Cycle Section).

The President's Challenge Cup will be competed for in a hill-climb to take place on August Bank Holiday Monday. It has been exhibited in the window of Messrs. Humber, Ltd., 32, Holborn Viaduct, E.C. The donor of the cup is Mr. George A. Touche, M.P.



## Birmingham M.C.C.

There was a very good turnout to the speed-judging competition on Saturday, and the run to Stratford-on-Avon proved very pleasant. The start was from the King's Head Hotel, Alcester Road, at three o'clock, the riders having drawn for speeds as usual. Results: 1, Seymour Smith (Norton), with only 30s. error; 2, W. H. Egginton (New Hudson), error 1m.; 3, R. Ball (Kerry), error 1m. 4s.

## Streatham and District M.C.C.

At the general meeting held recently a special committee was formed to organise and run all social events. Special encouragement will be given to gentlemen to bring out ladies on runs, and local experts in the different districts in which members reside will be at the service of members for advice. Mr. H. J. Jeffery is secretary.

## Dublin and District M.C.C.

A hundred mile handicap was held at Portmarnock on the 27th ult., which resulted as under:

	Start.	
1. C. B. Franklin ( $3\frac{1}{2}$ Indian) ...	8m. ... 2h. 9m. 13s.	
2. W. Curtis (5 Indian) ...	13m. ... 2h. 15m. 43s.	
3. T. E. Greeve ( $3\frac{1}{2}$ Rudge) ...	13m. ... 2h. 18m. 46s.	
4. S. W. Dunkley ( $3\frac{1}{2}$ Indian) ...	13m. ... 2h. 31m. 6s.	
5. W. J. Towell ( $3\frac{1}{2}$ Rudge) ...	30m. ... 2h. 38m. 38s.	
6. J. Heag ( $3\frac{1}{2}$ Rudge) ...	22m. ... 2h. 39m. 46s.	

## Scottish Border M.C.C.

A hill-climb at Lanton Hill was held on Saturday in splendid weather. There was a good entry, and, although the hill was very rough indeed, good sport was witnessed. The times were as follows: 1, A. J. C. Lindsay ( $3\frac{1}{2}$  Rover), 57½s. fast, 4m. 34s. slow; 2, W. B. Smith ( $3\frac{1}{2}$  Bat), 81s. fast, 3m. 13½s. slow.

Knock-out Competition.—W. J. Pringle beat J. O. Halliday, N. White beat L. Purdon, T. Milligan beat J. P. Laing, A. J. C. Lindsay beat Geo. Miller, N. White beat W. J. Pringle, A. J. C. Lindsay beat T. Milligan, and Lindsay ( $3\frac{1}{2}$  Rover) beat White ( $3\frac{1}{2}$  Victoria-Precision).

Sidecar Results.—1, W. B. Smith ( $3\frac{1}{2}$  Bat and sidecar), 107s.; 2, T. Gillies ( $3\frac{1}{2}$  Bat and sidecar), 107½s.

The new timing apparatus worked splendidly, and all classes were run off smartly.



# Royal Automobile and Associated Clubs' Gala Day.

THE second annual gala day of clubs associated to the R.A.C. was held at Brooklands on Saturday last. The weather was all that could be desired, and the attendance excellent. The motor cycle events were particularly well supported, and the keenest interest was taken in them. The Auto Cycle Union is responsible for many associates to the parent body, and consequently the races in which it is most interested formed an important part of the programme. The first motor cycle event had so many entries that two heats had to be run off, the first eight in each competing in the final. The race was down in the programme as: The Motor Cycle Short Distance Handicap. For any class, of motor cycle, the cylinder capacity of which does not exceed 1,000 c.c., owned by a member or an affiliated member of the A.C.U. Starters allowed. The machines could be stripped for racing. Distance about 5½ miles, start at "fork" and finish on "the long finishing line." The machines had to pass the fork once and then enter the straight. Prizes: The winner, the cup presented by *The Motor Cycle*; the second, third, and fourth, cups. C. R. Collier broke his belt on the way to the fork and consequently could not compete. The order past the fork was as follows: Beasley, Parker, Jacobs, Hillis, Flanders, Garrett, S. R. Cooke, Southgate, Bolton, Gnest, H. G. Ayers, Nash, J. W. Ayers, and Dreydel. The race resulted in a win for Garrett, who caught Beasley just before the finishing line. Garrett's Green-Precision ran in splendid form and covered the distance at the rate of 64½ m.p.h.

S. F. Garrett (1 Green-Precision)	85×88	499	56s.
H. P. Beasley (1 Singer)...	69×80	299	2m. 22s.
R. E. Guest (2 Matchless) ...	85×64	726	34s.
R. G. Parker (2 Enfield) ...	64×54	349	2m. 10s.
W. A. Jacobs (1 Singer)...	69×80	299	1m. 56s.
D. C. Bolton (1 Rudge) ...	85×88	499	40s.
G. Flanders (1 Rudge) ...	85×88	499	1m. 16s.
J. Southgate (1 Matchless) ...	85×85	482	1m. 6s.

Second heat. V. E. Horsman broke the piston of his engine, received permission to ride the smaller of his two machines, and as he could not get the latter to start was unable to compete. Martin was riding a very pretty mount of his own make which was provided with a Rotherham pressure feed lubricator provided with a very diminutive and neat looking gauge. At the start a group of six made an impressive departure, each with 1m. 16s. start. Bailey, the Australian Douglas exponent, got away in excellent form. The first lap order was: Reed, Bailey, Mills, Fowler, Martin, Colliver, Rowden, Brunton, Lawrence, Da Silva, Le Grand, Buchanan, and Pooley. Harry Reed jumped in an easy winner, having accomplished the distance at the splendid speed of seventy-three miles an hour. Mills passed Bailey just on the finishing line:

## SECOND HEAT RESULT.

H. Reed (2 Dot) ...	90	×77.5	997	12s.
H. C. Mills (1 Regal-Precision)	85	×88	499	56s.
S. L. Bailey (2 Douglas) ...	60	×60	345	56s.
W. G. Fowler (1 Rudge) ...	85	×88	499	1m. 16s.
E. A. Colliver (1 Zenith) ...	90	×77.5	499	1m. 6s.
H. Martin (1 Martin) ...	80.5	×59	345	56s.
A. Brunton (2 Bat) ...	85	×65	738	38s.
J. Rowden (1 Triumph) ...	85	×88	499	1m. 6s.

The next motor cycle event was the Inter-club Team Race or teams of three motor cycles entered by clubs affiliated to the A.C.U. Each team had to consist of one single-cylinder machine up to 500 c.c., one multi-cylinder up to 750 c.c., and one passenger machine up to 1,000 c.c. All had to be standard machines fully equipped. Starters were allowed. The entrants were given marks according to their relative finishing positions, i.e., the first over the finishing line one mark, the second two marks, and so on, the winning club being the one whose three riders obtained the least number of marks. No machine was adjudged to have finished unless it crossed the line less than five minutes after the first one in. The distance was five and three-quarter miles. Prizes: The winning club a trophy and each member the silver Herkomer medal, while each member of the second team received its bronze Herkomer medal. The Streatham Club turned up in great form with two teams, the first of which was a veritable power of strength, as it was composed of such famous riders as Barnes, Weatherilt, and Tessier. All twenty-two riders started together, and a very fine sight it was. Tessier led at

the first lap, and finished first, accomplishing a speed of 67 m.p.h. As all the riders started from scratch the clubs, of course, finished in a jumble, so we can only give the names of the winning clubs:

1. Streatham (1).—P. Weatherilt (3½ Zenith-Gradua), S. T. Tessier (5 Bat-Jap), and F. W. Barnes (7 Zenith-Gradua), 12 marks.

2. Herts County.—E. A. Colliver (3½ Zenith-Gradua), A. Brunton (5 Bat-Jap), and C. M. Down (7 Indian), 24 marks.

3. Streatham (2).—P. R. Hunter (3½ Triumph), H. Hunter (5 Zenith-Gradua), and G. F. Hunter (7 Zenith-Gradua), 35 marks.

The following clubs also competed: North-West London M.C.C., Middlesex County, Mersey M.C.C., Purley and District M.C.C., and Nottingham and District. H. Reed (5 Dot) and F. C. Jones (8 Zenith-Gradua) finished second and third.

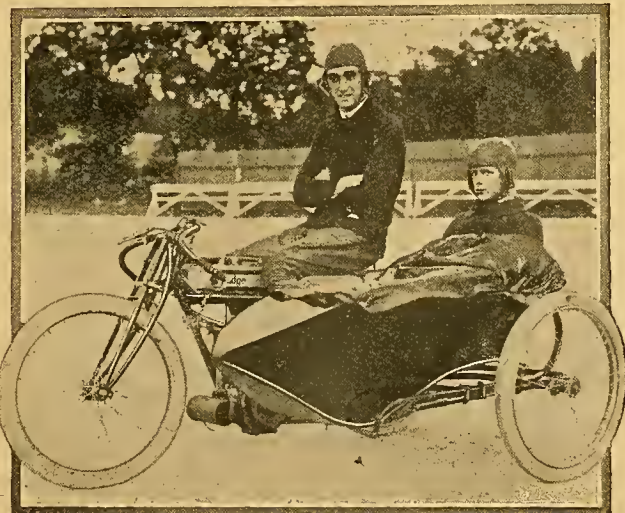
The last motor cycle event was the final of the Motor Cycle Short Distance Handicap for *The Motor Cycle* cup. The finish was most exciting and a tribute to the skilful hand-capping of Mr. A. V. Ebbelwhite. Harry Reed (Dot) finished first, winning *The Motor Cycle* cup, and passing Beasley almost on the finishing line. Garrett (Regal-Precision) finished third, Bailey (Douglas) fourth, followed by Southgate (Matchless), Parker (Enfield), Guest (Matchless) and Jacobs (Singer).

## SIDECAR TRACK RECORD LOWERED.

On Thursday afternoon, while the silencer trial was being carried on, Stanhope Spencer was busy making an attempt at Brooklands to lower the existing sidecar record. Mounted on a standard 3½ h.p. Rudge fitted with a Bramble sidecar (Coventry production), he was started off by Mr. A. V. Ebbelwhite and covered his first lap at the rate of 48½ m.p.h., while his subsequent laps were run off at 49, 50, 47½, and 43½ miles an hour respectively.

Then something happened to the carburetter and a fresh start was made. Spencer made an excellent beginning on the occasion of his second attempt, as he covered the first lap, from a standing start, at 48.92 m.p.h., keeping between 48 and 50 he went well till the thirteenth lap, when a broken valve caused him seven and a half minutes' delay.

In spite of this, he broke the hour record by covering 43 miles 356 yards in that space of time. Previous best, F. E. Pither (Rudge), 40 miles 1,660 yards, 3rd October, 1911. After replacing the valve, Spencer made his fastest lap, 52.60 m.p.h., and continued to travel well till he had to stop for oil and petrol. At the end of 1h. 52m., the plug blew out and a part thereof became wedged beneath the exhaust valve. The ride was stopped at the end of two hours, and it was found that 80 miles 1,250 yards had been covered at the end of that period, thereby establishing a two hour record. The fifty miles were covered in 1h. 10m. 7s.



W. Stanhope Spencer, who set up new sidecar records at Brooklands last week.



# LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

## Oily Engines.

Sir,—I notice "Growler" is complaining of an oily engine. I think that if he fitted an extra crank case release it would overcome his troubles.

C. L. MOUBRAY.

## To Prevent Shorting Troubles.

Sir,—We notice in your issue of the 25th ult. a complaint in the latter part of "Growler's" letter that he has had trouble with his new enclosed waterproof magneto. He, together with his two friends, will no doubt be interested to know that if the high tension cable is removed from the vulcanite holder on the magneto and dipped into hot paraffin wax before being replaced, troubles from shorting, due to rain, will be at an end. Unless the magneto has been dismantled and carelessly reassembled, this point is the only possible source of trouble, which can always be cured by the means we have suggested.

THE BOSCH MAGNETO CO., LTD.,

J. A. STEVENS, Secretary.

## Bevel Gear Transmission.

Sir,—I read with interest Mr. A. Vallmed's letter in *The Motor Cycle* of the 25th ult. re his experience with his four-cylinder F.N., but I should like to point out that not all the four-cylinder F.N. machines are positive drive, for the multiple disc clutch in flywheel of my machine, and scores of others now upon the road, would completely overcome any such difficulty with the engine.

My four-cylinder F.N. (1911) engine has now taken me 5,500 miles without a single replacement (except inlet valve springs and cotters), nor have I ever been hung up upon the road for anything except punctures, which were quickly repaired.

With regard to Mr. Vallmed's remark about the strength of the bevel or spur pinions, I might mention that after I had fitted to my machine the two-speed gear in place of the fixed shaft, I wished to take off the bevel and spur wheels from the old shaft; but although I had the shaft held tightly

in a vice, and used my full strength with blows of a hammer on a cold chisel resting against a tooth of the wheel, I could not remove same (the wheels are screwed upon shaft). I then lost my temper and determined to smash all the teeth off; but in this I was also unsuccessful, with the exception of just a small chip at edge of a tooth. So much for the F.N. Company's toothed transmission wheels.

I am in no way connected with the trade or the F.N. Company.

FRITZ C. SCHOVE.

## Military Motor Cyclists.

Sir,—Your contributor "Celeriter" mentions that the A.C.U. are supplying twenty motor cyclists for the Army Manœuvres and the Legion of Cyclists forty. Apparently he is ignorant of, or ignores, the fact that sixty are being sent by the A.A. and M.U., making the total 120, not sixty, as he states.

F. W. HASSARD-SHORT.

## Ten-mile Limits in Scotland.

Sir,—As many readers of your paper may have occasion to pass through Scotland, either on holiday or business, on motor cycles, I think it only right that they should be warned against the never-ending string of ten-mile limits that obtain in some parts of that country. I have lately seen an example of this on the coast road from Gourrock on the Clyde down to the town of Ayr.

No sooner are you out of one ten-mile limit than you are slap into another one, and it is only by watching out most carefully for the little posts that one can avoid getting into trouble. Unfortunately for myself, I failed to observe the one at the entrance to the village of Fairlie, and the over sight cost me a fine of £2. I was informed, however, that the ten-mile limit posts at the next village of Largs may be ignored altogether, as they have been put up by the local authorities without the necessary powers having been obtained. I trust this warning will be the means of preventing strangers to the district from being "rushed" in the way of fines, etc.

FOREWARNED-FOREARMED.



SCOTTISH SIX DAYS' RELIABILITY TRIALS.

Trials competitors chatting over their experiences. Note the headgear. In the foreground is J. S. Holroyd's Motosacoche.

Some riders experienced no trouble and had time to waste outside controls. W. Pratt is seen above amusing Bert Yates with a small harpise.



**Pillion Seats.**

Sir,—I notice in your leader on the cyclecar you put forward as the one great hope of the sidecar its easy detachability. Many people are content with something even more of a makeshift than the sidecar, viz., the luggage carrier. The danger of the latter is its great drawback. On the other hand, there cannot be the slightest doubt that it is simply impossible to resist its use on occasions. There is a fortune awaiting the inventor of some device that will render passenger carrying on the carrier safe. H.M.

**Outside Flywheels in the T.T. Races.**

Sir,—As a reader of *The Motor Cycle* of several years standing, and an enthusiastic motorist, I should like to point out that your correspondent "G.S." is, I believe, correct in stating that both the winners of the T.T. races had outside flywheels. The Scott, I think, has not.

STANLEY C. PARFAIT.

"G.S." is perfectly right; an outside flywheel is one which does not run in the crank case. The Scott flywheel is placed centrally between the two crank cases and the driving chains are on either side of it.—Ed.]

**The Necessity for Rear Red Lights or Reflectors.**

Sir,—Yet another motor cyclist has met with an appalling death owing to the absence of tail lights. He was travelling along the main road here (Bromley) at quite an ordinary pace, and the first he knew of the proximity of a large motor van, was when he dashed out his brains on the metal arch at the back of the cart.

May I suggest that every motorist—cycle or otherwise—who may read this, should write to his member of Parliament urging him to bring the matter before the Government. Surely in these days of fast motors on the road, every vehicle should carry a tail lamp and every cycle a reflector.

KENTISH MAN.

**Steel Pistons.**

Sir,—We notice a letter signed by Mr. S. W. Philpott in the issue of July 18th warning motor cyclists against the use of steel pistons, and we consider that such a letter is likely to mislead people and do considerable injury to an important industry.

Steel pistons are now generally admitted by motor manufacturers to be the correct thing, and, whatever your correspondent may have to say as regards his particular case, steel pistons have come to stay.

We happen to be the firm whom Mr. S. W. Philpott favoured with his order for two "tiny" pistons which were made to his sample, and because they were so small a sign, in which it was impossible to effect any saving of metal with safety, he is disappointed and begrudges the money he has spent.

We have supplied these pistons to practically all the leading motor cycle manufacturers throughout the country including the firm who made his engine, who speak most highly of them, and are constantly sending repeat orders. They are evidently easier to please than Mr. S. W. Philpott.

As regards the weight, we may say that a Triumph size piston, 85 mm. diameter, made by our method weighs about 10 ozs. as against the 1½ lbs. of a cast iron piston. Then as regards the risk of damage to cylinder, this is nil, as we have not yet heard of a single case of seizure.

We are quite aware that this kind of thing happened when steel pistons were made from hot stampings, but in the case of pistons made from drawn steel tube of uniform thickness there is no unequal expansion under the heat, and therefore no risk of seizure, provided the correct clearance is allowed.

In conclusion, we may mention for the benefit of S.W.P. and others that our pistons are being regularly used on the track in motor cycle and motor car engines running up to 3000 revolutions per minute, and we have in our possession letters from amateurs and professionals who have won races which they attribute to our light steel pistons. One motor cyclist admits that he gets ten miles per hour more out of his machine than he did with cast-iron pistons, and never finds that his engine shows any tendency to seizure.

THE OXYGEN WELDING WORKS, LTD.

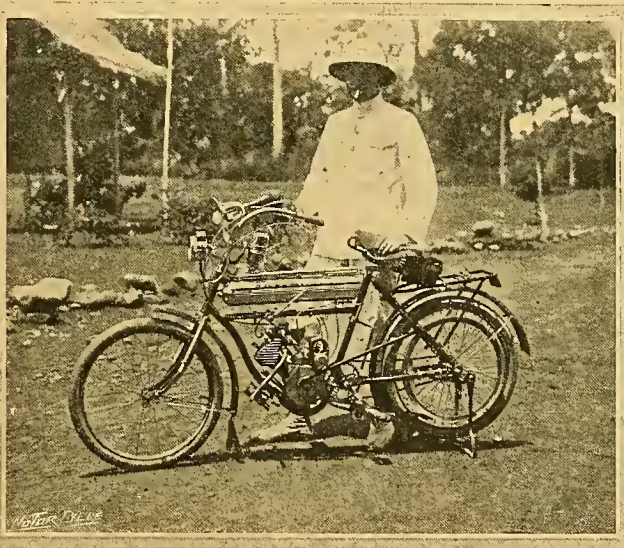
**Starting with a Kick-starter.**

Sir,—I have frequently found it difficult, when using the kick starter on my 2½ h.p. chain-driven single-cylinder, to get the engine to fire, though I have occasionally succeeded at the first attempt. To those who experience the same trouble my method of overcoming it may possibly be of interest.

I came to the conclusion that the valve should be dropped when the engine is about half-way through the compression stroke! It is only by chance that this happens unless the engine is first set in the correct position. By trial I found that with my machine this should be just at the end of the induction stroke. Having done this—a matter of a few seconds—on pressing down the kick starter the engine is about half-way through the compression stroke just before the end of the movement and, on dropping the valve at the same moment, the engine invariably fires straight away. It may be possible to apply the principle to other methods of starting, but having only recently taken up motor cycling I have not had sufficient experience to say whether it would be of any great advantage. S. J. EVANS.

**The Motor Cycle in Sumatra.**

Sir,—Having read with great interest various accounts of club runs in your paper, I thought a short description of motor cycling out here might be interesting to your readers.



The writer of the accompanying letter and his Moto-Réve.

Our roads are very smooth, but gritty. Agencies for the following are in Medan (our largest town): Triumph, Humber, Enfield, N.S.U., Moto-Réve and Torpedo.

On the 16th June an organised run from Bindjei to Brandan (fifty miles) took place. Fifteen of us presented ourselves at the starting post, and nine arrived at Brandan. It is intended to form a club and to have the club quarters in Bindjei.

Our great enemy here is the heat, which causes our engines to overheat very quickly. Petrol costs about 1s. 7d. a gallon, and is distilled in the country.

I might mention that nearly all the Europeans here are employed on either tobacco or rubber estates. We get two holidays a month, viz., the 1st and 16th, while we work all the other days (Sundays included). Tyres, etc., can be obtained in Medan, but the other accessories (speedometers, etc.) are quite unobtainable. There are about 5,000 Europeans in Sumatra, and about fifty or sixty motor cycles.

We have, unfortunately, comparatively few places to visit, there being only about 300 miles of good roads. I myself, whenever I leave the estate for a ride, have to have the machine carried across a broad shallow river, and this, as you can imagine, rather damps one's ardour for riding unless it is of importance. I enclose a photograph of myself and a 2 h.p. Moto-Réve, which I find ideal for this country.

Kuala, Sumatra.

H. G. GREINER.



**Acceptable Assistance.**

Sir,—Please allow me to thank you for a short paragraph you inserted in *The Motor Cycle* asking for help in the solution of a "difficult problem" with an old type engine. Glad to say response was very good. Several came to see the engine. Each and all, separately unknown to each other, pointed their finger of scorn at the exhaust cam. A new cam was made giving  $\frac{5}{16}$  in. lift instead of  $\frac{1}{16}$  in. as before, and the results are most "grateful and comforting." Engine does not now overheat, runs faster on the level, and climbs hills very much better. I was very glad of such spontaneous offers of help from unknown but very enthusiastic motor cyclists, who were ready to write letters, make appointments, call and examine and give advice with no hope of reward except to think they had helped someone out of a difficulty. Again thanking you for the paragraph.

S. WHITTAKER.

**Puncture-proof Bands.**

Sir,—As scarcely a reliability trial occurs without one or more competitors losing their place through puncture troubles, it is surprising that puncture-proof bands are not more widely used. Is it because these are inefficient or the wear on the tyres is increased in consequence of a little less "life" in them.

It would be interesting to know what per cent. of competitors use these bands, as I think they should go a long way towards eliminating the "puncture fiend."

W. D. LUMB.

**Power for Sidecar Work.**

Sir,—With regard to the correspondence in your paper as to the power required for sidecar work, my experience has been with both a  $3\frac{1}{2}$  h.p. single and the 6 h.p. twin Royal Enfield. I must say that the latter machine is more convenient to start, and is easier to control either at high or low speed, and one great advantage I find is that when coming to any hill one has no doubt in one's mind as to whether the top can be reached without the necessity of the passenger in the sidecar being asked to get out and walk. In conclusion, I would like to thank the Enfield firm for their courteous and prompt manner in business transactions with me, though I have not the slightest personal interest or knowledge of the firm.

J. T. OSBORNE.

Sir,—There is naturally a "happy medium" power both for sidecar and for solo work, and although one cannot ignore the recent wonderful performances of the Humbers and New Hudsons with sidecars, yet there is little doubt that they were being driven "all out." One has but to see the  $3\frac{1}{2}$  h.p. sidecar combination on the road to know that the reserve of power is little or nothing on top gear when a hill of any size is encountered. Moreover, I am fully convinced that the average  $3\frac{1}{2}$  h.p. single does not possess the

necessary durability for the severe strain of sidecar driving. The machine which I consider ideal for this work, and which I use myself, is the big cylinder Excelsior of 650 c.c. with three speeds. In this I find the embodiment of everything necessary for sidecar work. After various adjustments I find that the engine is at its best with a  $4\frac{1}{2}$  to 1 top gear and that it will take average hills with this at high speed with a splendid reserve, and no overheating. Who can say this of the  $3\frac{1}{2}$  h.p. single?

MYER B. LEE.

**The Low Engine.**

Sir,—A few months ago there appeared in the columns of *The Motor Cycle* mention of a Low cyclecar. The engine of this machine was said to develop an enormous amount of power, although the cubic capacity was only that of a light weight twin. Mr. Low announced his intention of entering a machine for the T.T. this year. This did not appear, and have heard two or three people say that they would like to know what has become of it.

SOMERVILLE G. TELFER.

A copy of the above letter was submitted to Mr. Low, who replies as follows:

Sir,—I thank you for your letter and note the remarks of your correspondent.

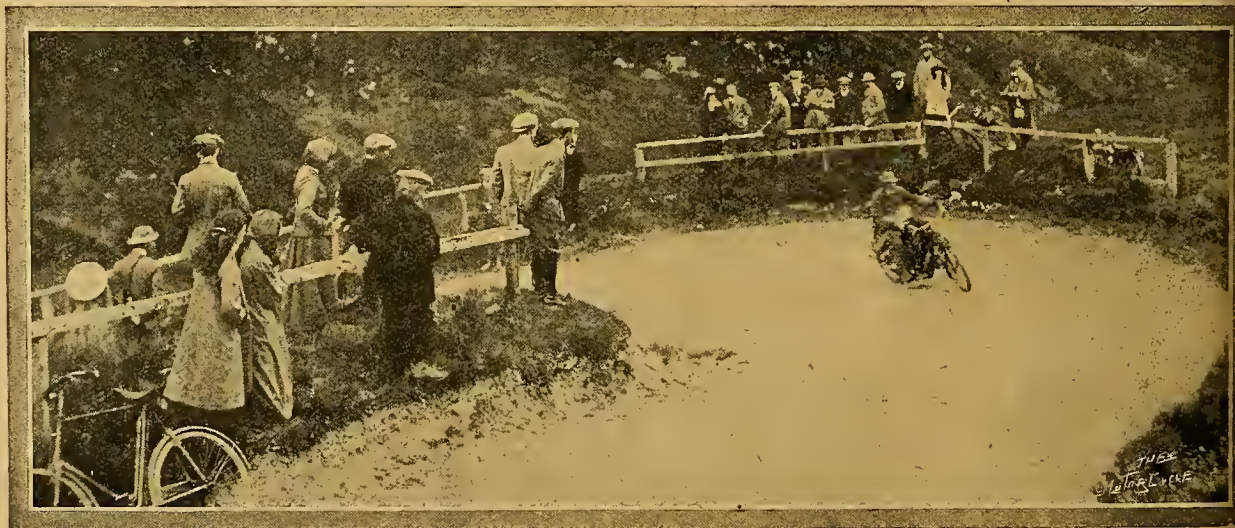
The original engine was built by myself about a year ago and was running six months after. It was very successful, giving nearly 18 h.p. on the brake at 3,400 r.p.m. with consumption of .46 pt. b.h.p. hour. The engine was a degree 2 in. x 4 in. twin, and it has run for as much as 40 hours on end at full load. Although these results were considered remarkable, the engine was very difficult to control, though giving promise of great flexibility by varying the petrol admission valve and its cut off. Being in a position to do so, I decided to perfect the engine before letting it be placed on the market, and I certainly was never so foolish as to attempt to get it out in time for the T.T., as no experimental engine can be reliable in its first stages. I have now an engine building on this principle, which I shall fit to a bicycle for testing, and while I do not want more power than in the original engine, I intend to give it reliability, flexibility, and silence before placing it on the market.

A. M. Low.

**SUMMARY OF CORRESPONDENCE.**

Mr. W. H. Edwards writes that he rode a  $3\frac{1}{2}$  h.p. Jam two-speed and sidecar in the Birmingham Club's two-day trial, not a New Hudson as officially reported.

Mr. F. Denham Tell, vice-captain of the Ceylon M.C.C. complains of inattention on the part of some makers of urgent orders for repairs, and points out that Ceylon riders are deterred from purchasing certain reliable machines solely on this account. Motor cycling, he says, is increasing in Ceylon by leaps and bounds.



SCOTTISH TRIALS. THE DEVIL'S ELBOW, WHICH IS PRECEDED BY A LONG ASCENT. J. R. Alexander (7 h.p. two-speed Indian) on the bad bend





The 1912

# REX-JAP

in the hands of private owners again proves itself  
**THE BEST SOLO MACHINE!**  
**THE BEST SIDECAR MACHINE!**

Sutton Coldfield and Mid-  
Warwickshire Automobile Club

## Hill Climb, Hints Hill, 20 July, 1912.

Class V.—(Unlimited Singles or Twins).

Mr. F. Shakespeare .. 8 h.p. REX-J.A.P., 34 secs., 1st on Time.  
 2nd on Formula.

## and FASTEST TIME OF THE DAY!

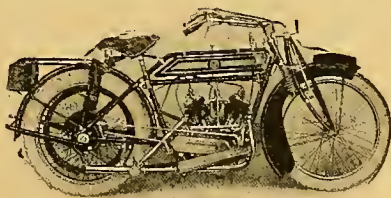
Class ix.—(Sidecars and Cyclecars).

Mr. F. Shakespeare .. 8 h.p. REX-J.A.P., 41 $\frac{3}{4}$  secs., 1st on Time.  
 3rd on Formula.

## FASTEST PASSENGER MACHINE!

Extract from *The Motor Cycle*,  
 July 25th, 1912.

"Class VI. was won by F. Shakespeare (8 Rex-Jap) in the fastest time of the day. He also made fastest time in the sidecar class. This rider had never before ridden in a motor cycle competition."



"If you have never driven one up a hill you have missed half the sport of motoring!"

## RELIABILITY!

Blackpool & Fylde M.C.C. Reliability Trial,  
 7th July, 1912.

WINNER, Mr. S. O. Taylor, 8 h.p. REX-J.A.P.  
 and Sidecar.

Blackburn M.C.C. Reliability Trial, 20 July '12.

WINNER Mr. Fletcher, 6 h.p. REX-J.A.P. & Sidecar

(The REX-J.A.P. was the only sidecar machine to complete the course and gained 199 $\frac{1}{2}$  marks out of a possible 200.)

May we post you Art Catalogue fully illustrating and describing the various models.

COLONIAL AGENTS. The Rex-Jap Colonial models are the most suitable machines for your requirements. Write for our terms. The enormous resources behind the machine ensure prompt delivery.

**The Premier Motor Co., Ltd., ASTON ROAD, Birmingham.**

Telegrams: "Primus, Birmingham."

Code A.B.C. 5th Edition (and Private).







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Commencing with advice on the choice and purchase of a machine, it tells how the motor works, and how its mechanism may be understood and mastered.

It then deals with every conceivable point in regard to the care, management, and running of machines of all types.

It is the only work of the kind published which gives details of the leading 1912 improvements.

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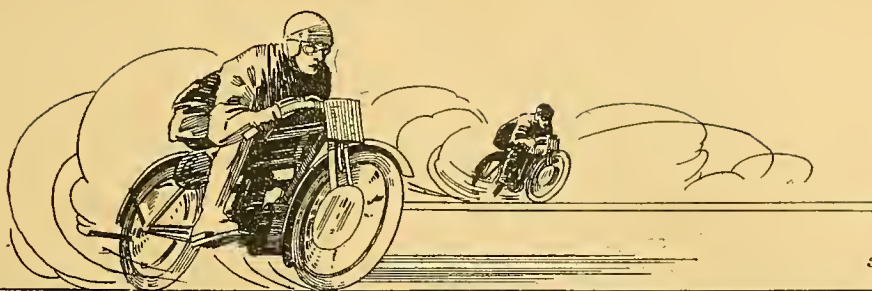
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# QUESTIONS & REPLIES



SRJ

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Camborne, Cornwall, to Ilfracombe, North Devon.

I purpose spending a week in Ilfracombe (North Devon), and should feel obliged if you will kindly inform me (1) the best route to take from here (Camborne, Cornwall), and (2) what is the total distance? I ride a  $2\frac{1}{2}$  h.p. 1911 Motosacoche. Also (3) will you kindly inform me of a change in route for returning from Ilfracombe to Camborne, and mention any bad hills on either route?—W.J.S.

Our best route would be as follows: Camborne, Redruth, Zelah, Mitchell, Bodmin, over Bodmin Moors to Launceston, and then via Holsworthy, Tarrington, and Barnstaple to Ilfracombe. The distance is approximately 128 miles. You could slightly vary the route by going back through Bideford, Hartland, Stratton, Camelford, Wadebridge, St. Columb, Padstow, Looe, Tresillian, Truro, and Redruth to Camborne. We do not know of any very terrible hills on these routes.

## Gear or Engine.

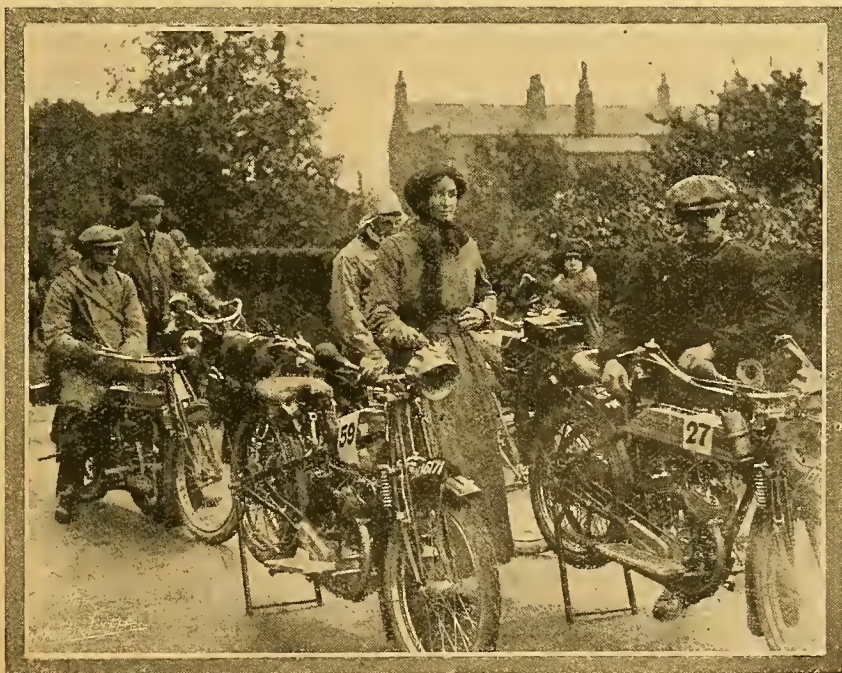
I have a forecar with White and Poppe engine, water-cooled head, m.o.i.v.; it is a 4 h.p. and has epicyclic gear. Now it will not face an ordinary hill with passenger up, and the low gear obtained by pressing pedal and tightening band is of no use, although the gear seems good enough. The engine runs well enough and the compression is good, but it does not seem to have enough power for its work. I have had a new B. and B. carburettor fitted. Can you let me know or give me any idea what is wrong? Do you think this engine is 4 h.p. from the description I have given you of it? Any advice you could give me would be greatly esteemed.—C.S.

Judging by your query, we suppose that the band brake which encircles the epicyclic gear does not hold the drum tightly enough, and in consequence the

low gear does not come into operation. Is this so, or is it that the engine refuses to take the weight up the hill and stops? If the latter takes place, the machine is either geared too highly or is not developing its proper power. If the former, the band brake requires either relining or adjusting so that it will hold the drum tightly. The engine should give about 4 h.p. at about 2,000 r.p.m. but as it may have been in use for some time, it probably requires overhauling. Examine the timing gear and see that the valve lifts at least a quarter of an inch, fit new exhaust and inlet springs. If machine is registered as a motor cycle, the lighting arrangements are exactly the same on a forecar as on a bicycle. In any case it is advisable to carry two front lights showing the full width of the vehicle for your own safety's sake. No rear light is required, but the front numbers must be illuminated, as in the case of a motor cycle.

## Exhaust Valve Timing.

My machine is a 1910 twin ( $77\frac{1}{2} \times 70$  mm.). (1.) I have just had a new crankshaft (timing side) fitted, and the machine overheats, whereas it formerly ran cool all day with sidecar attached. I had, of course, to re-time the engine, and timed the exhaust valves to close dead on top of stroke, and I find they open one inch (approx.) from the bottom of the firing stroke. Is this not very early for a stroke of only  $2\frac{1}{2}$  in.? The inlet valve cams are solid with exhaust valve cams, so have not been altered—relative to the exhaust valve timing. Magneto points break dead on top of stroke; all carburettor adjustments, etc., exactly as before new shaft was fitted.—K.M.S. The exhaust valve should commence to open when piston has completed six-eighths of the working stroke, i.e., approximately ten mm. from bottom stroke. Your valve is opening much too soon. If you set valve to open a little later and close a little later it may improve matters. Fitting the new crankshaft may have caused flywheels to be out of line or some part of the machine to be wrongly assembled, so that it throws undue strain on pistons or connecting rod bearings. What position is timing lever magneto in when magneto points break, or are just about to break? It should be fully retarded.



SCOTTISH SIX DAYS' TRIALS.

Miss Muriel Hind and R. Lord, with their 6 h.p. two-speed Rex twins; behind them P. Macdonald (4 h.p. three-speed Norton) and G. E. Cuffe (7 h.p. two-speed Indian.)



## London-Warwick-Chester.

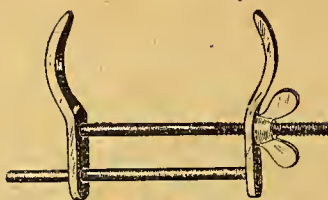
I shall be obliged if you will kindly tell me the best road from London to Chester, calling at Warwick, but avoiding all large towns such as Birmingham, Wolverhampton, etc. I should like to vary the return journey *via* Shrewsbury by some pretty route. Should there be any hill *en route* of single figure gradient, I should like to have particulars.—FB 601.

Your best route would be as follows: London, Barnet, St. Albans, Dunstable, Fenny Stratford, Stony Stratford, Towcester, Weedon, Daventry, Southam, Warwick, then continue through Stratford-on-Avon, Alcester, Headless Cross, Bromsgrove, Kidderminster, Bridgnorth, Wellington, Whitechurch, to Chester. You can return *via* Wrexham, Shrewsbury, and then along Watling Street, through Weston, Weeford, Atherstone, Daventry, and by the same route as on the outward journey. We do not know of a single figure average gradient on this route, but there is a long rise between Kidderminster and Bridgnorth.

## Engine gets Red Hot.

I should like to know if a 2 h.p. lightweight ought to carry ten stones along a level road at twenty miles per hour without the engine getting too hot for the hand to bear. The lightweight engine I possess gets almost red-hot very soon after starting, but this does not seem to affect its running.—J.C.W.

Very few, if any, air-cooled motor cycle engines will run cool enough to allow the hand to be placed on the radiating fins of the cylinder. This is only possible in the case of a water-cooled engine. In the old days it was no uncommon sight to see the combustion head of a motor cycle engine glowing at night, but improvements in cooling have been made since then. Your engine should not get red hot. If it does there is something wrong with it. Either the exhaust gas does not get away quickly enough, or you drive with the throttle too far open, taking into consideration the amount of work the engine is called upon to do, or the ignition is not sufficiently advanced.



A simple chain adjuster introduced by Brown Bros., Ltd. The ends of the chain are drawn together with a uniform tension by screwing the fly nut.

## Valve Timing.

My 1911 engine, 85x85 mm., has not yet run 200 miles. Although oiled copiously, it stops through overheating after only about twelve miles of practically level running. It knocks badly on the least provocation, and will take very little air. Suspecting the timing of the engine, I tested it according to "Motor Cycles and How to Manage Them" with the following astonishing results. Inlet begins to open  $\frac{3}{16}$  in. before the top of the exhaust stroke and closes  $\frac{3}{16}$  in. up the compression stroke. Exhaust valve opens  $\frac{3}{16}$  in. before bottom of firing stroke and closes  $\frac{3}{16}$  in. down induction stroke. Will this account for the overheating, and can it be altered? If so, how?—T.G.

The engine seems to be timed with an overlap in the valves which is supposed to be the best practice for getting high speed out of an engine. We do not think this would account for the overheating trouble. Probably you are using a jet which is too large, or you are not using suitable lubricating oil. Buy only the very best brands of motor cycle oil for lubricating, and be sure that it is in a sealed tin, otherwise you may purchase oil which is ruining the engine. As the engine will take very little air, this points to the fact that there is an obstruction somewhere in the petrol pipe or carburettor which would cause symptoms similar to those of over-heating. We should advise you to take down the carburettor and clean it thoroughly, examine the petrol pipe, and change the lubricating oil.

## Cracked Piston.

(1.) Would you mind informing me if there is any danger using a cracked piston? Is it possible to have it welded to give satisfaction, it being  $3\frac{1}{2}$  h.p. with the rings one at each end of the piston, and the crack, very large, about  $\frac{3}{16}$  in. long, across the bottom slot? (3.) Would it cause loss of compression?—E.G.

(1.) Yes, considerable danger. If the piston broke it would probably cause a lot of damage, which would be very much more costly than replacing at once with a new piston. (2.) Electrical welding is satisfactory in some cases, but it is quite impossible to say whether it would be satisfactory in the case of the piston question. What we should advise you to do would be to communicate with a firm undertaking electrical welding, send them the piston, and ask them if they can make a satisfactory job of it. In any case the piston would have to be machined after the welding if the crack crossed the ring slot, and probably a new piston would be cheaper in the long run. (3.) It depends entirely on the size of the crack whether it would cause loss of compression, but we should be inclined to think it would, as in all probability the crack opens when the engine is started.

## EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"F.J." (Reading).— $2\frac{1}{2}$  h.p. Doug two-speed with light sidecar.

"F.D.O." (Tottenham).—Kempsha with 4 h.p. sidecar combination.

"L.F.C." (Simonsdown).—6 h.p. Sing tricar converted to sociable.

"G.W.L." (Derby).—Two-speed gear and free engine clutch for fitting to 5 h.p. 1910 Indian.

"T.W.L.C."— $2\frac{1}{2}$  h.p. Levis. Coolant of running and lubrication.

"Humber" (Salisbury).— $3\frac{1}{2}$  h.p. 19 two-speed Humber, with sidecar.

"R.A." (Bombay).—Glover cyclecar.



A TEST HILL IN THE SCOTTISH SIX DAYS' TRIALS.

The hairpin bend on Rest and be Thankful, which unseated many riders. Bert Yates ( $3\frac{1}{2}$  h.p. Humber) is seen successfully round, after having passed his stable companion F. G. Edmond, who ran on to the loose stones on the inside of the bend.



# Stanley at Brooklands

Another Dash for the Records  
by the SPEEDY

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**Who won the Five Lap Senior  
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Races in fine Style on Saturday,  
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Writing of the Senior event "THE MOTOR CYCLE" said:—

"Stanley was never challenged and steadily increased his lead,  
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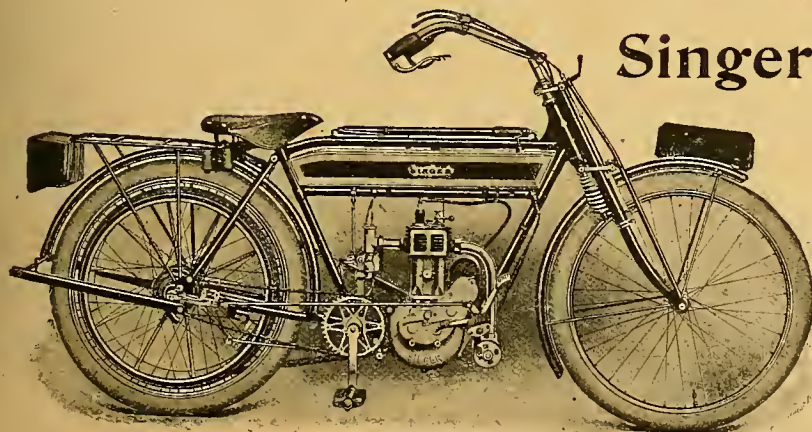
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"At the end of the first lap Stanley was leading at a terrific  
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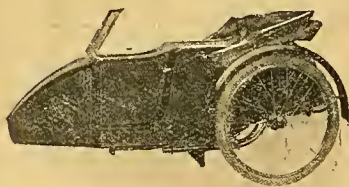
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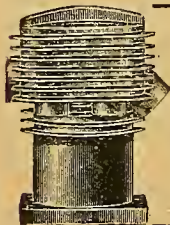
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Note that in the recent South Australia Speed Trials, Mr. F. R. Limb, mounted on a 3 $\frac{1}{2}$  h.p. Calthorpe, won the 3 $\frac{1}{2}$  h.p. class from 15 other competitors and, in so doing, set up a speed of 56 $\frac{1}{2}$  m.p.h.

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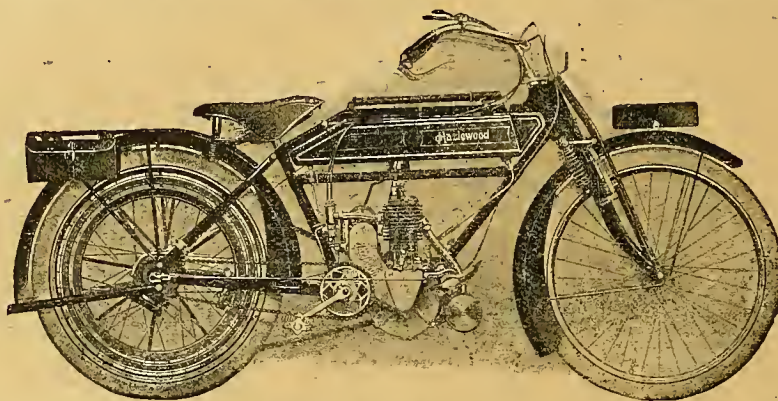
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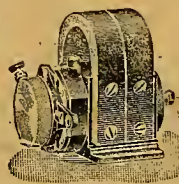


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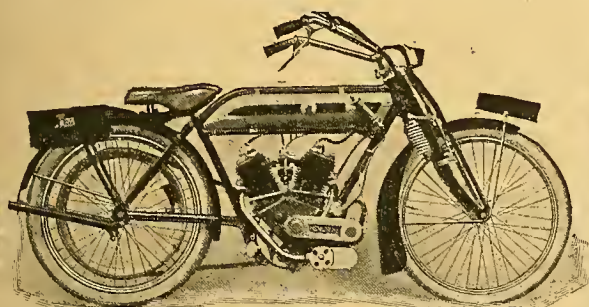


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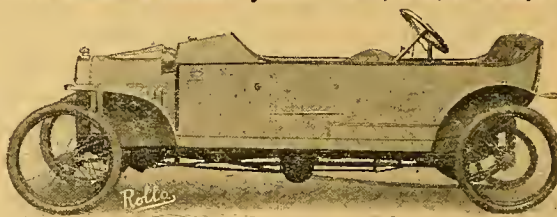
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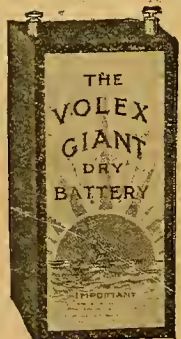
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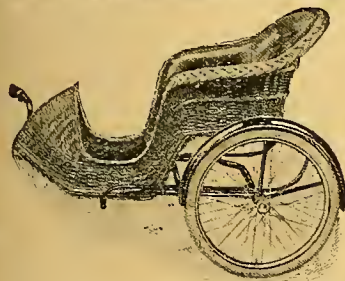


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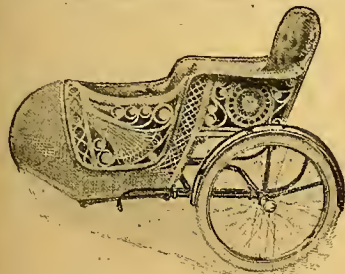
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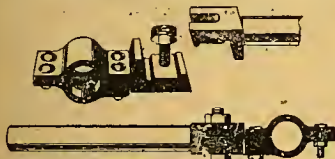


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Dear Sirs,—Some time since I purchased from you a sloop-sided sidecar, and after running same for about 3,000 miles felt I should like to let you know how very satisfactorily it has been running. The chassis is now as true all over as on the day it was delivered to me, and that in spite of being run on many occasions with two passengers and under the worst of conditions.

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You are at liberty to use this letter as you please, and to give my name and address to any enquirer. Personally I have, and shall, always recommend a "Portland" to anyone who wants a practical and thoroughly efficient sidecar.

Yours faithfully,  
(Signed) W. E. BAKER.

A New Hudson rider says:

I think this is good evidence of the strength and reliability of your machines.

The way we go up hills is simply marvellous. The machine simply advertises itself wherever it goes, and causes a lot of attention with one of Maude's "Dutch Clog" sidecars attached.

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HUMBERS, 1912, 3 1/2 h.p., 2-speed; immediate delivery; list price on deferred.—Hitchens, Morecambe. [3189]

INDIAN, 1912, 7 h.p., 2-speed; immediate delivery; cash or deferred. Why wait?—Hitchens, Morecambe. [3190]

DOUGLASES, 1912, all models in stock; no waiting; special terms on the deferred.—Hitchens, Morecambe. [3191]

PREMIER, 1912, 2-speed; list price deferred; discount for cash.—Hitchens, Morecambe. [3192]

BAT, 1912, chain drive, immediate delivery; deferred terms arranged. Why wait?—Hitchens, Morecambe. [3193]

BRADBURY, 1912, free engine model, not ridden 50 miles; sacrifice £10.—F. Anders, 38, Platt Lane, Hindley, Lancs. [X7477]

1912 6 h.p. Enfield Turnout, new Juna, latest improvements; £70.—W.F. and Co., 5, Cheltenham Parade, Harrogate. [X8787]

RUDGE, T.T., 2-gallon tank, perfect condition, only done 350 miles.—Jones, 159, St. Anne's Rd. East, St. Anne's-on-Sea. [X8696]

LIVERPOOL.—1911 Royal Enfield, 2 1/2 h.p., guaranteed faultless; trial; everything on; £35.—McAdam, 276, Scotland Rd. [3164]

1912 New 3 1/2 h.p. B.S.A., 2-speed, free engine, done 50 miles, new 10gn. sidecar; £62/10.—Crown Garage, Scarborough. [3165]

1912 2 1/2 h.p. Humber, Armstrong 3-speed, spara tyre, belt, and lamp, done 300; £40, cost £58; owner bought Clyno.—Above. [X8525]

MINERVA, 3 1/2 h.p., h.b.c., adjustable pulley, splendid running order; £8/10.—Parr, 279, Warrington Rd. Lower Ince, Wigan. [X8551]

MERRICK for Bradbury, Chater-Lea, Rudge, A.J.S., Matchless, etc.—Merrick's Stores, Listerhills, Bradford. Phone: 2439. [0038]

TRIUMPH 1911, free engine, complete with lamp, horn, tools, etc., perfect condition; £38.—Sutcliffe, 34, George St., Oldham. [X8558]

HUMBER Lightweight, 1911, 2 h.p., lamp, generator, horn, etc.; £23; getting combination.—Lees, Hamilton St., Bury, Lancs. [X8661]

ROYAL Enfield, 1911 1/2, 2-speed, free engine, new condition, climb anything; £35.—Race, Harcourt Place, Scarborough. [3266]

NEW Unused 6 h.p. Twin Zenith; cost £70; as cannot meet account, will sell £62/10 cash.—Johnson, 18, Castle Park, Lancaster. [3125]

1911 B.S.A., standard model, only done 4,000 miles, all in new condition; £37.—Wilson, Crossfield House, Farsley, near Leeds. [X8694]

3 1/2 h.p. T.T. Triumph, 1912, exceptionally fast, just completed 100 miles, complete; what offers?—26, Carter Knowle Rd., Sheffield. [X7999]

REX, 3 1/2 h.p., 1908, new in 1909, Bosch, B. and B. excellent condition; £18, or close offer.—Hudson, 89, Albert Rd., Colne, Lancs. [X8601]

RUDGE, 1912 1/2, free engine, done 120 miles, guaranteed perfect throughout; £45.—Walmsey, 12, School St., Accrington, Lancs. [3321]

BAT-J.A.P., 6 h.p., late 1910, clutch, spring frame, Bosch, carefully used, very fast, reliable; £36.—Arnott, Fife Rd., Darlington. [3122]

MOTOR Cycle for sale; 4 h.p. Trump-Jap, as new, not ridden 200 miles; list price £48, accept £34.—Sanderson, Station Garage, Fifeley. [3327]

TRIUMPH, 1912, free engine, not done 1,000 miles, perfect, lamp, horn, usual spares; £50, no offers.—J.H.G., 37, Sankey St., Warrington. [X8003]

1911 3 1/2 h.p. Rex Tourist, free engine, spares; £30; condition as new, runs 110 miles to gallon; private owner.—Larrad, Horbury, Wakefield. [X8560]

1912 Motor Cycles, must be cleared; 3 1/2 h.p. Zenith £50, Model G. Douglas £41, P. and M. £60. Scott £65.—Greenland, agent, Carnforth. [3124]

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REX DE LUXE, 1912 model, perfect... £46 10  
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PREMIER, 3 1/2 h.p., 1910 model .... £32  
RUDGE, 3 1/2 h.p., 1911 T.T. model .... £34  
ARIEL, 2 1/2 h.p., ideal lightweight ..... £10  
F.N., 5-6 h.p., 2-speeds, free engine ..... £31  
P. & M., 3 1/2 h.p., 1909, 2-speeds, lovely £32  
DOUGLAS, 2 1/2 h.p., 1911 model ..... £31  
T.A.C., 7-8 h.p., 1910 model ..... £44  
INDIAN, 7-9 h.p., 1911, 2-speed ..... £54  
CLYNO, 6 h.p., 1911, 2-speed ..... £60  
RUDGE, 3 1/2 h.p., 1912, multi ..... £54  
P. & M., 3 1/2 h.p., 1911 model ..... £56  
SCOTT, 3 1/2 h.p., 1910 model ..... £46  
F.N., 5-6 h.p., shaft drive, 2-speeds ..... £33  
SCOTT, twin, 2-stroke, 2-speeds ..... £25  
F.N., 4 1/2 h.p., 4-cylinder ..... £23  
A.J.S., 3 h.p., twin, just overhauled ... £27  
V.S., 5 h.p., free engine, magneto..... £28  
F.N., 2 1/2 h.p., 1910, tricycle, 2-speeds .... £30  
PEUGEOT, 7-9 h.p., magneto, low built ..... £24  
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MINERVA, 4 1/2 h.p., spring forks .... £19  
A.J.S., 1911, 2-speed ..... £33  
ANTOINE, 5-6 h.p., twin, low built .. £19  
PHOENIX, 8 h.p., car, 2-seater ..... £26  
ANGLIAN, 2 h.p., lightweight ..... £8  
ANTOINE, 4 h.p., clutch model ..... £12  
IMPERIA, 2 h.p., handle-bar control .. £8  
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NOTE.—Above subject to being unsold. Exchanges can in some cases be arranged. Deferred payment charge, 10% extra on reduced prices.

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# THE MOTOR CYCLE

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York.  
 PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.;  
 Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.),  
 and Lancaster (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd.; Wellington, Auckland,  
 Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 132, Bay Street, Toronto. SOUTH  
 AFRICA: Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

### The Silencer Tests.

THE Auto Cycle Union silencer tests, reported last week, have shown that the best quietening effect is obtained by passing the gas first into an expansion chamber twelve inches long and five inches diameter, the final exit being through a pipe five-eighths of an inch diameter. The tests are most interesting, and confirm the statements repeatedly made in these pages that silence without back pressure can only be obtained by adopting a fairly large chamber into which the gases can expand. Theoretically, this chamber should hold about six times the volume of the cylinder capacity. The capacities of the cylinders on the motor cycles used for the test were approximately thirty cubic inches. The cubical contents of a silencer or expansion box twelve inches by five are two hundred and thirty-six cubic inches, or nearly eight times the volume; therefore, theory and practice once more agree when the practice is sound. Manufacturers have now to produce a small exhaust box which will give the same quietness. In our opinion they will never secure the same result with a small box, either by means of baffle-plates, small holes, and other similar devices, without a certain amount of back pressure. The correct principle of exhaust gas silencing is to expand the gas and allow it to cool.

Articles published in *The Motor Cycle* as far back as 1903 and 1904 showed that exhaustive experiments were made in Great Britain and on the Continent with motor cycle silencers, and that the best results were obtained by using a moderate sized expansion chamber and a pipe from it, the latter being sometimes subdivided into two or three branches.

Very few makers will agree to disfigure their machines by the addition of large silencers and ugly pipes, with the result that motor cycles have a reputation for noise.

All the noise of the exhaust does not come from inadequate silencers, as we have already explained; a good deal of it is due to valve cam design and valve timing. Generally speaking, efficiency means noise at least from the exhaust, although it is possible to have great noise and very little efficiency.

### Motor Cycle Taxation.

A FEW weeks ago we drew our readers' attention to the case of a North-country motor cyclist who uses his machine for business. This rider for two or three years had made use of a motor cycle for purposes of business. He claimed exemption in the first instance, and the Inland Revenue officers did not press him for payment; in fact, he has documentary evidence in his possession that they considered he was exempt. On the introduction of the new motor cycle taxation of £1 and the taking over of the collection of the tax by the local authorities, this motor cyclist received a demand for payment of the tax, and naturally referred the authorities to the previous ruling.

They pressed the case, and when our advice was asked we recommended the rider in question to lay his case before the Auto Cycle Union, who decided to take action, and it is probable that the hearing will take place at Barnsley on the 9th inst.

This test case will settle once and for all a vexed question in motor cycle taxation.



# Nearly 80 m.p.h. on the Open Road.

An Early Morning Attempt to Win a Wager.



A privately arranged attempt to cover 80 m.p.h. on the road on an 8 h.p. Zenith-Gradua. (1) Breaking the tape of the electrical timing apparatus at the start, and (2) at the finish.

**B**ED pulls very much at 4 a.m., especially after returning at midnight; but still the occasion was worth it and we all tumbled out, ducked our heads into cold water, and stood in the hall of the hotel clamouring for hot coffee, which the alert landlady was endeavouring to produce.

The reason of this rising in the wee sma' hours was because we hoped to see one of the finest riders in the North of England win a wager of — well, never mind how much, by doing eighty miles per hour over a measured quarter of a mile. After the hot coffee, we proceeded at well over the legal limit to the rendezvous, a dead level and straight piece of road about six miles away from the hotel. Here, in contrast to the quiet and peaceful country side at that early hour, everything was bustle and argument. Some were busy measuring the course to a fraction of an inch, others driving in the stakes and laying the wires of the electrical timing apparatus, and last, but not least, the stripped machine, with its open exhausts, was being finally looked over.

## The First Attempt.

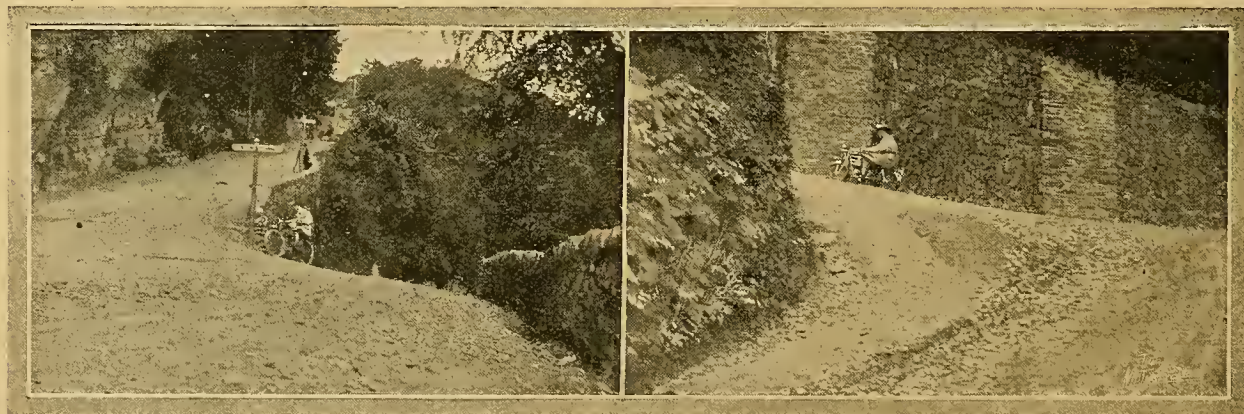
At last everything is ready, the rider cannons down the road a mile away to get a flying start, and after what seems an age, we hear a sound like the hum of an aeroplane engine, and hardly before we have time to realise what has happened the machine with its rider has thundered down the course, the very ground trembling as he passed. "What was his time?" everybody anxiously enquires. "Has he done it?"

11 $\frac{1}{2}$ s. only 76.27 m.p.h. However, he has two more chances to win the wager, and after one or two minor adjustments he goes down for his second attempt. Again he thunders past, and although he is hurled along at such a terrific pace, his course is as straight as an arrow. We could all tell he had improved upon his previous time, and there was a yell of delight when we found that he had knocked two-fifths of a second off and so accomplished 78.95 m.p.h. There was still another chance. Could it be done? The excitement grew intense, for we all knew that the rider had only to improve his last time by a bare one-fifth of a second and the task was accomplished.

Once again, and for the last time, the thread of the timing apparatus is broken, and one can imagine our feelings and our opponents' joy, when we hear that he again only equalled his second performance by doing the quarter in 11 $\frac{1}{2}$ s. or

## 78.95 Miles an Hour.

It was almost exasperating to be so near and yet so far. Few people realise what a fifth of a second means at such terrific speeds, but they cannot help seeing it when it is shown thus: Over a quarter mile course 11 $\frac{1}{2}$ s. = 80.36 m.p.h., whereas over the same distance 11 $\frac{1}{2}$ s. = 78.95 m.p.h. Therefore one-fifth of a second makes a difference of 1.41 m.p.h., and to further show how near the rider came to winning his wager, if the course had been seven yards shorter he would have accomplished 80 m.p.h. S.



LYNTON HILL, LYNMOUTH, ONE OF THE TEST HILLS IN THE A.C.U. SIX DAYS' TRIALS. Riding a 2 $\frac{1}{2}$  h.p. Premier lightweight, H. Bunce recently succeeded in climbing the notorious Lynton Hill. He is seen above negotiating the two hairpin bends.



# Round the Scottish Trials as a Free Lance.

BY "THE MOTOR CYCLE" REPRESENTATIVE.



ASCENDING GLENDOE, A SCOTTISH TRIALS TEST HILL.

The competitor is W. Pratt (3½ h.p. P. and M.) who won the Trade Rider's Frize.

As a camera man feelingly observed to me, in every trial the pressmen have about twice as much work as anybody else, and they get no medals when all is over. This particularly applies to the Scottish Trials. However, like the rest, I had a thoroughly enjoyable week, and came home bronzed and carrying extra weight.

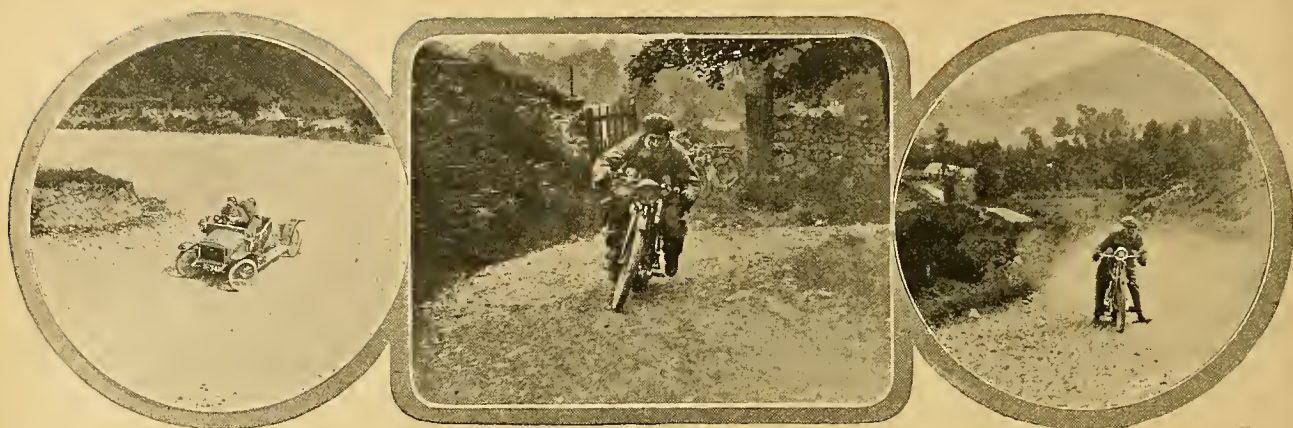
Reviewing the Trial as a whole, I noticed one vast contrast between this and all previous six-day events, for nobody except the sidocar drivers ever felt any anxiety about the hills. In previous trials, both English and Scottish, there has always been a certain atmosphere of anxiety about the worst test hills. We had, as usual, the handful of weaklings who cannot climb Dashwoods with certainty, but the vast majority of the entry never worried about the hills; they knew that their variable gears would take them up any gradient, and if they should mull an acute hairpin a clutch restart would be easy. Such small machines as Douglas, A.J.S., and Motosacoche went up some of the worst precipices in Scotland. By the way, I did not encounter a single case of trouble with gears—and this although they were roughly used, with very frequent changes, and often employed as brakes, bottom gear being jerked in against the compression when a machine was travelling too fast near a bad corner.

The second point that struck me was the extraordinary number of accidents. Quite a formidable proportion of the entry fell out through smashes of one sort or another; I am afraid these were principally due to criminally bad driving. In Scotland a by-road is continually trying to suck its own tail, and the resultant corners are as blind and prolonged as they are often unexpected. The chancy type of driver is bound to come to grief on such roads, though the Trials were well advanced before all the clumsy sort were eliminated.

These dangers were enhanced by deep pot-holes and loose surface, which often threw a machine right across the road and caused expert cornerists some breathless moments.

The third feature was the grand show put up by the passenger machines, over roads which are only fit for careful soloists. The two G.W.K. cyclecars electrified us all, especially on the hills, though one of them enjoyed the poorest of luck. The Bat and the 5 h.p. A.J.S. must have left home on a Friday. Smith's Clyno put up another perfect score; Smith says he always alters some points of design after a trial, and I suppose he will now strengthen the chainstay lug. Hugh Gibson had a very gruelling time, and proved what a magnificent driver he is. But personally I thought Bischoff's easily the finest per-





TEST HILLS IN THE SCOTTISH TRIALS.

A G.W.K. cyclecar climbing Rest and be Thankful.

Vernon Taylor (3½ Rudge) on the S bend of Glendoe.

H. G. Bell (New Hudson) on Reinloan.

formance in this class, even though putting a 3½ h.p. sidecar round this route is a freakish job, like going out to shoot lions with an air-gun. He enjoyed splendid luck, escaping without a puncture for instance; but I do not think there are many men in England who could duplicate the performance.

Hugh Gibson, I thought, attempted too much. He was obviously anxious to take his passenger up all the hills, and put his outfit to frightful strains in the attempt, with the result that his tyres gave trouble. Bischoff nursed his machine and tyres, and made it his single aim to finish up to time.

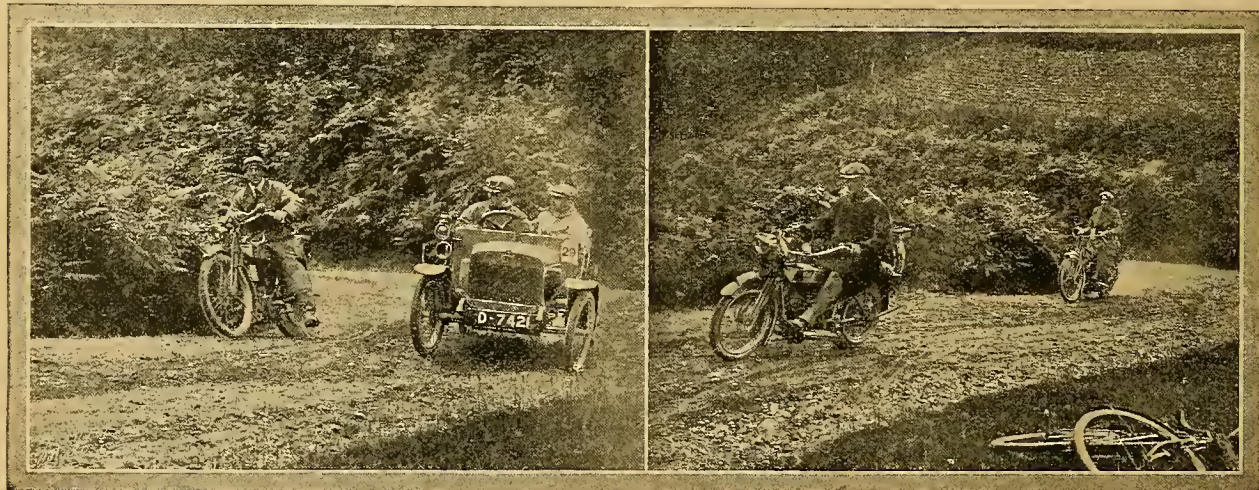
The fourth point was the excellent lightweight display. The special prize awarded to the 2½ h.p. A.J.S. was quite deserved. It was a single entry, not the pick of a large team; the engine pulled like a team of elephants, and it was beautifully handled.

In the 500 c.c. class many well-known machines gave the display we should expect. Amongst comparative newcomers the Rover finally earned its spurs. W. Pratt's win on the P. and M. is well merited.

#### A Modern Three-speeder.

I accompanied the men on a Triumph with Armstrong hub, and enjoyed the mastery over hills which a modern 500 c.c. engine with a three-speed hub

always ensures. The machine made clean ascents of every hill except the S bend on Glendoe, and that failure ranks against its rider, for carburetter reasons. I had to use an improvised jet to replace a broken one—naturally the adjustment was not quite correct. My hub control was adjusted once, and the gears were oiled whenever I found time—say thrice during the week. Adjustments and condition were perfect on the Saturday night. I escaped with one heavy spill, due to running on to new metal when rain had converted the dust on my goggles into an opaque paste. For the first three days I enjoyed a picnic, save for a few punctures. But it is plain that the roads were severe on tyres, or I was particularly unlucky if I say that by Saturday night I had practically exhausted my third repair outfit, that both covers were heavily reinforced with canvas, and that each had a large gaiter inside it. Kind friends hint that my plethora of punctures is due partly to the extra speed required from a press representative, and partly to my being too shortsighted to see nails lying on the road! Here I think they must be pulling my leg. I can understand a man spotting a broken bottle on Brooklands, but how anybody can spy a shepherd's boot nail on the lochside tracks puzzles me.



F. C. North (Ariel) and C. M. Keiller (G.W.K.) negotiating the S bend on Glendoe.

The two twin Rexes, Miss Hind and R. Lord up, on Glendoe. "The Motor Cycle" photographs were the only ones taken at this point.



## Round the Scottish Trials as a Freelance.—

My worst moments of the week were as follows:

(1.) Arriving lunchless at the foot of Cockbridge Ladder about 4 p.m. after ten hours' work; I knew I was ahead of the men, and dashed up to the hotel door with my purse out to read the following notice, "Closed till 6 p.m." Luckily I coaxed the landlord down from the worst corner.

(2.) Getting a huge staple through the back tyre after twelve hours' work, when I was still sixty miles from our destination for the night.

### More Troubles.

(3.) The carburetter got full of water, and after taking the usual methods to empty it I found it necessary to dismantle. I was using an experimental carburetter of peculiar design, and in my hurry I broke the jet in half. I was miles from anywhere, it was pouring with rain, and I had no jet of any sort or kind. Luckily a Triumph passed, and the rider had a spare. Then my trouble was to make the large hole in his jet as small as the original, which is essential when your



J. S. Holroyd (Motosacoche) successfully round the S bend on Kenz ore. Holroyd, as usual, gained top marks in this severe trial.



Scottish Trials competitors crossing Bonar Bridge in the pouring rain on Thursday.

brush's stump left to get a spark by a little faking. Subsequently I found water had got into the magneto despite my improvised tent, and I had to seek the shelter of a neighbouring farm, where I soon put things to rights. The farmer put me in a shed with about thirty young turkeys—execrable farmer! When the engine started up there was a tremendous fluttering and clucking of young turkeys. However, who cares when the engine is going? Further on I borrowed from a local rider of a Triumph a full length carbon, and my magneto troubles were at an end. I shall carry a spare carbon brush in future. In conclusion I should like to mention the organisation and management of the Trials, which reflect the greatest credit on the Edinburgh and District M.C.C.

air supply is invariable. I soldered it, and borrowed a drill from a watchmaker; the drill dated back to the Stone Age, being of the bow and pulley order, and I shudder to remember how often we had to grind a new point on that drill.

(4.) Breaking the carbon brush of my magneto in pouring rain. When the engine stopped I tested the spark and found it good. I wasted twenty minutes (like a fool) searching in every other direction. Then I came back to the ignition, and this time there was no spark, to my joy, for at least I had narrowed the field. Traced the cause to a broken high tension brush, and tried to remove it by external means; fished with a bent wire tipped with solution; no catch. At last hung my waterproof over the back wheel, so making a little tent, sat beneath in the sopping road (my mackintosh unmentionables are seatless!) and took the magneto all to bits; recovered the fragments of the brush, which had caused a lot of sparks where I did not want them, and joy! found enough of the



Geo. E. Cuffe (Indian) falls among the bracken in attempting the S bend on Glendoe.



# A New Variable Jet Carburetter.

A Compact Instrument, completely Controllable from the Saddle.

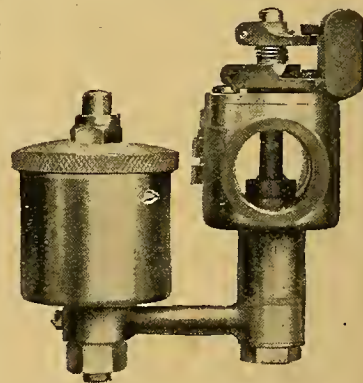
**E**VEN the merest novice knows that a single jet carburetter cannot supply all requirements on a motor cycle. It is obvious that in level districts a small jet is required if petrol is to be economised, but in hilly country a big jet is a *sine qua non*. Consequently the manufacturer who uses a single jet carburetter is obliged to strike the happy medium, with the result that at times petrol is being

in that case it would be necessary to keep the jet lever closed tightly when the engine is not running. As the throttle is opened, the cone forming the jet is raised in unison with the throttle opening by means of a specially constructed screw which gives a correct sized jet at all speeds.

The amount of "lift" to this jet for a  $3\frac{1}{2}$  h.p. motor cycle is approximately .009 from closed to full open. This, of course, can be varied to suit any machine. It follows, therefore, that the area of the jet is automatically increased with the throttle opening in the correct proportion.

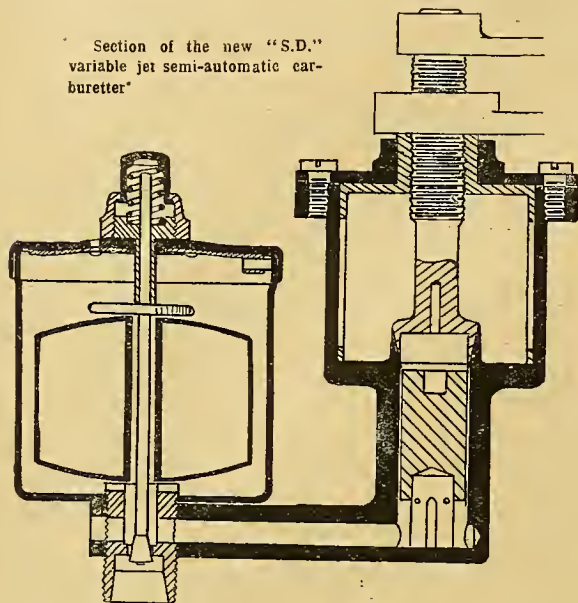
## Effect of the Variable Jet.

The 4 h.p. sidecar machine on which we used the S.D. carburetter was vastly improved by the conversion, and hills on which it previously toiled were now rushed on top gear by the simple expedient of opening the jet slightly. In the ordinary case the air lever is partially closed on hills to enrich the mixture, thus reducing the charge when actually you want more, but with the S.D. the barrel, which controls the throttle and air openings in the manner of a "straight through" plug tap, is opened to the full, and if a stronger mixture be desired the jet is raised by means of the top lever. By reason of the fact that the right jet opening is used for all positions of the throttle, the consumption is considerably reduced. We covered just over eighty miles (Coventry to the Peak District) on the first gallon of petrol under favourable conditions, passengers' combined weights 19½ stones, about seventy miles on the second gallon over wet roads and sixty miles on the third gallon on sticky roads and against a strong head wind. The varying conditions exactly suited our test. In the case of the last run (Newark, Notts, to Coventry) slow progress would perforce have been made as there was a gale of wind, but increasing the jet opening enabled over 20 m.p.h. to be averaged and every hill—including Bunny Hill, near Nottingham—ascended on top gear. The S.D. is the first carburetter we have sampled which enables an engine to turn over so slowly that the explosions can be counted with ease, and by doing no more than manipulating two levers cause it to develop a continued roar of explosions. A choked jet is a thing of the past with this carburetter. Should an obstruction be suspected, the lever is opened slightly and the foreign matter thus freed. We predict a big future for the S.D. It should appeal to the speed man as well as the every-day tourist.



Showing the compact appearance of the S.D. carburetter. It is of the straight through type.

Section of the new "S.D." variable jet semi-automatic carburetter.



needlessly wasted, and yet frequently a hill proves too much for the machine simply because the jet is not large enough. The question is almost on a par with the change-speed gear problem. In the case of variable gear or variable jet, the selection is governed solely by the prevailing conditions, but with a fixed gear (or jet) a machine has its limitations in either direction.

## Complete Controllability.

A variable jet opening and a variable main air supply has been the writer's pet fad for years past, and consequently a proffered trial of a new design automatic carburetter known as the "S.D." was accepted with alacrity. The carburetter is made by the Sydenham Mfg. Co., Sydenham Road, Birmingham, and it is shown in section in the accompanying illustration. As will be seen, the carburetter has an annular jet, the orifice of which is only .005 wide, but, being spread around a circle of 9-16in. diameter, the petrol issuing therefrom must of necessity be almost perfectly atomised. With a large single jet, petrol issues in blobs and is imperfectly broken up.

The S.D. is controlled by two handle-bar levers of the ordinary kind, the upper controlling the opening of the jet independently of the throttle, the lower one the throttle, jet, and air openings.

The action is as follows. The conical jet is closed tight when the throttle is closed, and consequently, if desired, a float chamber can be dispensed with, but



# DUNLOP



It is not only in speed,  
it is in all-round use that  
**DUNLOP TYRES and BELTS**

have demonstrated their superiority season after season, and they are doing it more convincingly than ever this year—not in one event alone, nor in the hands of a few riders, but in all kinds of competitions open to private riders throughout the country.

Typical examples of Dunlop successes.

**SUTTON COLDFIELD A.C. MEMBERS' HILL-CLIMB.**—Eight places on Dunlop tyres; nine places with Dunlop belts.

**SOUTH WALES A.C. and CARDIFF M.C.C.**—Eleven places on Dunlop tyres in the hill-climb at Caerphilly; ten places with Dunlop belts.

Four places (three firsts) on Dunlop tyres in the speed trials at Porthcawl; three places and fastest time with Dunlop belts.

Competitors anywhere can reap the same rewards provided their machines have the same equipment.

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## Nine Months' Experience with a New Hudson.

**A** WEEK'S experience last year in the Isle of Man with a 1911  $2\frac{3}{4}$  h.p. three-speed New Hudson was the inducement which caused us to place an order with the New Hudson Cycle Co., Birmingham, for a 1912 model of the same power.

This machine was delivered last November, and has been ridden regularly ever since, so we are in a position to speak of its capabilities. When we say that its reliability is second to no machine the writer has ever ridden it is saying a good deal, for he has owned many of the best machines on the market. Its speed capabilities are remarkable when the c.c. of the J.A.P. engine is taken into account;  $70 \times 76$  mm. is only 292 c.c., yet with this comparatively small engine the machine is capable of an average touring speed of about twenty five miles an hour, and for a short distance on top gear a speed of 45 m.p.h. can be attained. Owing to the Armstrong three-speed gear hill-climbing is its strong point, and it is very fascinating to know that there is no hill too steep for it. The extreme comfort of this knowledge adds considerably to the pleasures of a ride in strange country, where one never knows when the next corkscrew ascent may loom up in front. Riding this little machine with its change-speed gear giving ratios of  $4\frac{1}{2}$ ,  $6\frac{1}{2}$ , and 9 to 1 was quite a new experience for the writer, who had previously owned mostly heavyweight single geared mounts although trying change-speed gear machines from time to time.

### Renewals, Belts, and Tyres.

Coming to the question of the machine's behaviour during the past nine months, when we say that it is one of those which can be ridden week end after week end without attention beyond filling up with petrol and oil and cleaning, we have said enough to convince the reader of its absolute reliability. The only renewal has been an exhaust valve and spring, and they were merely fitted to obviate the necessity of regrounding the old valve. The com-

pression is almost as good to-day as when the engine was new, and no trouble whatever has been caused by the added complication of a change-speed gear. We always make it a practice to lift the exhaust valve

before changing, not because it is necessary, but the loss of way so caused is slight, and wear on the dog teeth of the gear must be thereby lessened. Every two hundred miles the gear and clutch are well lubricated with thin bicycle oil in accordance with the makers' instructions, which are printed in gilt letters on the tank, and the adjustment of the gear change rod is checked every few weeks; if it be found incorrect it is a moment's work to reset it. Tyre and belt wear are extremely small, as the original Dunlop rear cover is still on the wheel, and the  $\frac{3}{4}$  in. Lyso belt on the pulleys; both appear good for a considerable distance.

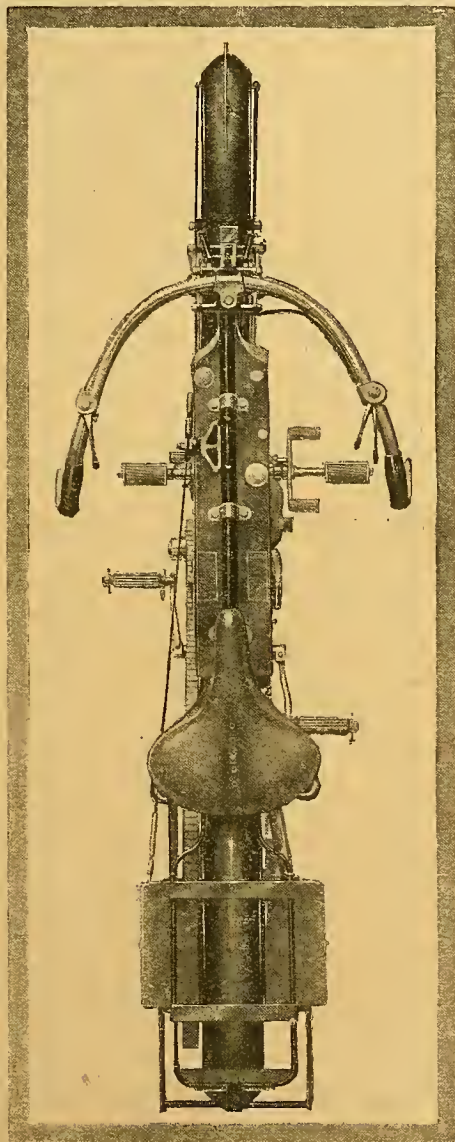
### Useful Refinements.

It will be noticed on reference to the illustrations which accompany this article that the change-speed lever is in a convenient forward position on the top tube, that the tank is provided with gauze filters to petrol and oil compartment to prevent the spirit washing about. The magneto control is on the handle-bar, a great convenience, particularly in the case of small engines where the magneto contact breaker can be advantageously retarded and advanced more often than is usual with larger motors. The carrier and rear guard are readily detachable; one of the illustrations shows this. Slots are provided at the stay ends, so the pins attaching them to the frame merely require to be loosened.

Many imagine that a lightweight is only capable of carrying medium weight riders, but the writer finds his 13 stones not the least bit too heavy for the

$2\frac{3}{4}$  h.p. New Hudson, and on the first speed ratio of about 9 to 1 hills of 1 in 6 are easily negotiated with a hot engine.

One week-end ride with this machine which will always be remembered was a run to North Wales,

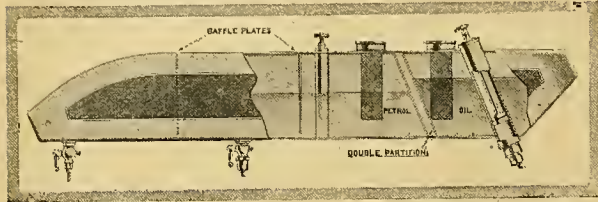


Plan view of the  $2\frac{3}{4}$  New Hudson showing gear and clutch controls, etc.



### Nine Months' Experience with a New Hudson.—

when the route taken was Coventry to Shrewsbury, Lake Vyrnwy, over the mountain road to Bala, up the easy side of Bwlch-y-Groes down to Dinas Mawddwy, and home through Llanfair and Welshpool. The whole of this run was accomplished without a falter—wait, there was one small adjustment, a pin which connects the clutch operating rod to the bell crank jolted out and had to be replaced with the

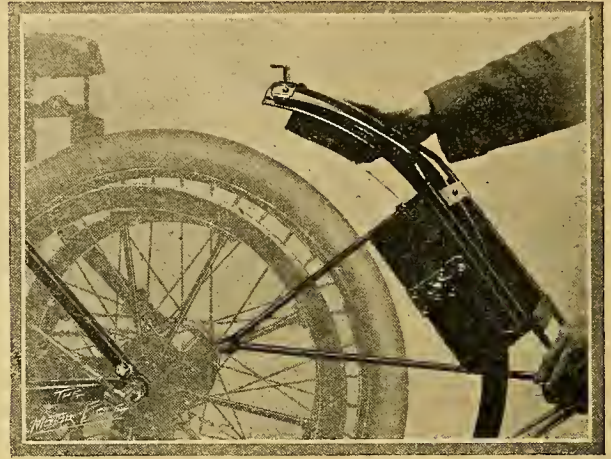


New Hudson petrol and oil tank. Note the double partition, gauze filters, and baffle plates.

nearest substitute provided by a small Welsh cycle shop in the shape of a large split-pin.

This calls to mind one little improvement that might be worth the makers' attention, viz., to make all the pins for clutch and gear controls a little longer and split-pin them. Change-speed gear machines are particularly likely to shed bolts and nuts which are not securely pinned or lock-nutted. We attribute this partly to engine vibration set up when the machine is

climbing long rough hills on a low gear ratio, as from our experience any bolt or nut which works loose can usually be traced to a previous single figure climb on low gear with the engine turning over at its highest speed.



Detaching half the rear mudguard and carrier to facilitate tyre repairs.

The above remarks will confirm the good opinions previously expressed regarding the New Hudson lightweight, a motor cycle which we have every confidence in recommending as a staunch and reliable mount.

## RIMS AND TYRES.

THE Rom Tyre and Rubber Co., Ltd., call attention to a matter of considerable importance to motor cyclists, and one that may be the cause of a good deal of dissatisfaction. With the advance of sidecar requirements, a good many makers are fitting motor cycles with rims to take



Fig. 1.

A 650 by 65 mm. voiturette tyre on a voiturette rim; beads filling the clinch perfectly, and, consequently, chafing does not take place.

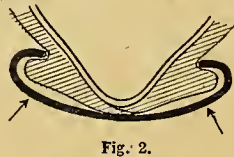


Fig. 2.

A motor cycle tyre 26 by 3 or 26 by 2 1/2 in. on a voiturette rim. Beads fill the clinch insufficiently, hence movement takes place, and the walls of tyre are chafed through.

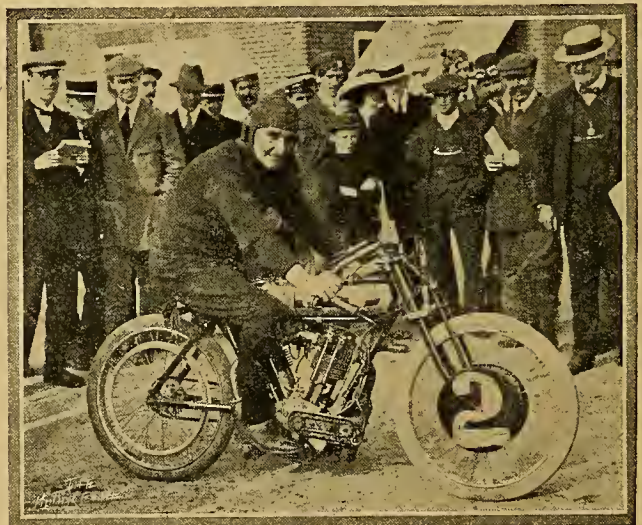
voiturette tyres, and obviously such rims are totally unsuited for motor cycle sizes of covers, as a comparison of the accompanying sketches will show. The bead of a motor cycle cover, if fitted into a voiturette rim, will obviously be worn away in a very little time, owing to its not filling the clinch of the rim and having space in which to work about. A 26 in. by 3 in. tyre that the Rom Co. recently brought out, for riders who require heavy work from their tyres but were already tied down to the motor cycle size of rims, is, owing to its size, still more likely to be subjected to the same unfair usage, and it should be made quite clear that these tyres,



Fig. 3.

A motor cycle tyre 26 by 3 or 26 by 2 1/2 in. on a motor cycle rim. Beads fill the clinch perfectly.

which, though large, were made specially to fit motor cycle rims, should on no account be used on voiturette rims. If riders have wheels with voiturette rims they should fit them with 650 x 65 mm. or 700 x 80 mm. voiturette covers, otherwise they are certain to have trouble. Similarly it will be readily understood that on no account must riders attempt to fit voiturette tyres to motor cycle rims. To fit either pattern of tyre to unsuitable rims is simply asking for trouble, and the rider is sure to get it.



H. Reed (D-t-Jap), winner of *The Motor Cycle Cup* in the handicap at the R.A.C. Gala Day at Brooklands.



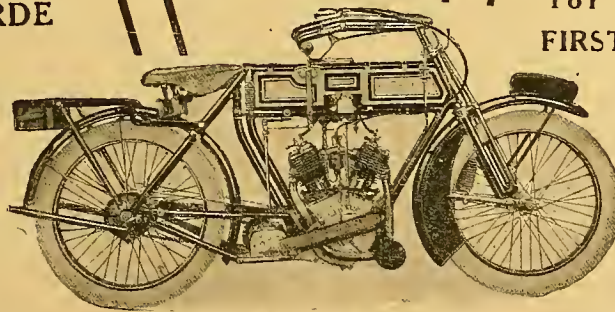
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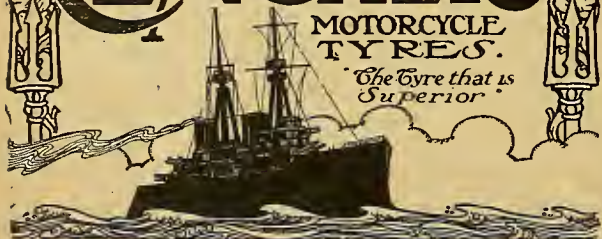
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IT MUST COUNT.

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Climb, won on Formula and  
Fastest Time.

Mr. K. C. Clark, on 3½ h.p. Corah,  
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Fastest Time with 8 h.p. Overhead-  
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Far beyond anything in pre-Binks  
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Gold Medal, and also won the SILVER  
CUP in the N.W. London Club's Run to  
Coventry and back on Binks."

I could fill pages with similar testimonials.

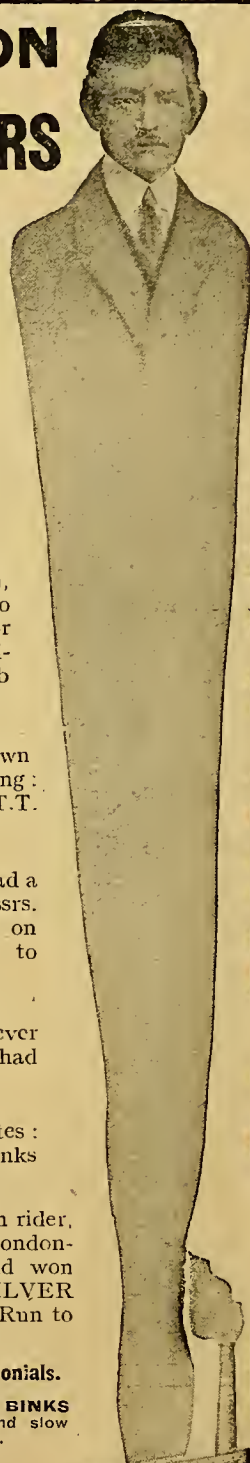
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EXPERIENCE







The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### Presentation to Mr. F. Straight.

Sir.—Please accept my sincere thanks for the handsome illuminated address which you have kindly forwarded to me. I can assure you that I greatly appreciate the kind sentiments expressed thereon, but feel that any assistance I may have been able to render to the motor cycle pastime and industry during my term of office as secretary of the Auto Cycle Union has been amply repaid me by the number of friendships that I have made during that time.

I am glad to say that I shall still be connected with the industry, and consequently able to remain in touch with those friends. The address will, however, always remind me of my ten years of office and of my very pleasant connection with the motor cycle pastime and industry.

F. STRAIGHT.

#### A Flag of Distress.

Sir.—It is very pleasing in these days of supposed extreme selfishness to see on the road the spirit of *camaraderie* which motor cyclists so often exhibit. If a motor cyclist be held up on the roadside, it is a most unusual experience to find another motor cyclist who does not slow down or actually stop to offer assistance. It may be that the "held-up" one is merely shortening the belt (motor cycles in these days have attained such a state of perfection that rarely do they require mechanical adjustment on the road); anyhow the rider rarely has occasion to ask for assistance. Now, if a motor cyclist is held up for ten minutes on the road, particularly a busy road, it is more than likely that a large number of motor cyclists will slow down or stop, and, as often happens, unnecessarily.

Could not some badge be arranged to prevent this unnecessary delay to others? A small flag might be exhibited which would indicate "assistance required." HELP.

#### Cyclecars.

Sir.—As an old reader of your esteemed journal, will you allow me to make a few remarks on the question of the cyclecar? "Ubique's" article in last week's number gives all points clearly that are difficult to overcome, but are they really so hard to surmount? A few days ago I had a chat with M. Médinger, whose cycle racer you depict in a recent issue. M. Médinger does not seem to think that the chief point, *i.e.*, the price, ought to be a difficulty at all. He has a good ten years' work behind him on small cars, and especially what you call here in England the cyclecar. This type he has been developing for the Austrian race track for a good while, and when M. Médinger came this year to England he was surprised to find that the cyclecar is so far behindhand considering the splendid roads we have got here. M. Médinger, who is coming out with the Médinger cyclecar shortly, does affirm that for the light type of car destined to replace the sidecar combination a differential and reverse can easily be dispensed with. M. Médinger has done touring and racing in Austria, Italy, France, and Germany, and here in England, and speaks from practical experience. But again, M. Médinger admits that we have further to overcome vibration trouble, and as a *sub rosa* remark I may say that the Médinger cyclecar is to have a new departure of valveless engine with a to be patented design of carburation to eliminate this trouble of vibration.

It is hoped the first tests of the new type "M.C.C." will be made in September if *force majeure* is not stepping in, and to make matters still more interesting for the English motor cyclist it is hoped that M. Robert Médinger, the Austrian

motor cycle record breaker and holder of Alpine track (Semmering) record, will establish the new cyclecar records on track and road with the Médinger cyclecar.

Not to intrude further on your valuable space, I will only add that I am at present no further interested in M. Médinger but as a countryman and an anxious worker for the proper cyclecar.

AN AUSTRIAN.

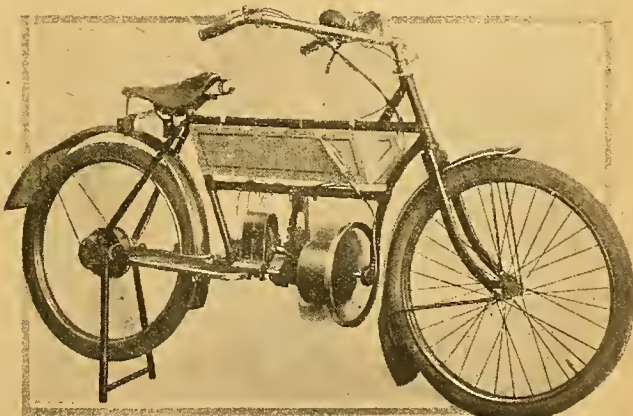
#### Punctures.

Sir.—May I be allowed a few lines wherein to record my personal experience *re* above, in reply to "Verator's" enquiry?

About a year ago I took delivery of a new mount and had the misfortune in one of the first rides thereon to suffer from twenty-three punctures! This was certainly over some exceptionally bad secondary roads, but, nevertheless, most annoying. Just about the same period the "Firmax" people were offering sets of their well-known compound at reduced prices as (I presume) an advertisement, and out of sheer desperation I was tempted to invest in one! Although a keen motorist of many years standing, I had never believed in these puncture preventive measures, but after a thoroughly extensive trial of "Firmax," am now quite convinced that it actually does what the makers claim, provided always that their instructions are carefully carried out in first instance. As a latest example of its use, I may mention that on my return journey from a recent short tour round the Lake District I picked up a hob-nail in sidecar tyre, piercing the tread and inner tube to the head. This was discovered firmly embedded in the rubber when some thirty miles from home, and although it was then pulled out, the tyre did not appreciably become deflated for several hours (despite a twelve stone passenger and heavy luggage in sidecar), and I was able to reach my destination without stopping at all.

This is only one of many somewhat similar experiences during the year, and it is a real comfort always to get "there and back" without tyre troubles nowadays! I must, in conclusion, add the usual disclaimer; I am not in any way directly or indirectly acquainted with or financially interested in the firm.

F. J. KELSHAW CONWAY.



A rotary engine motor cycle built by the Gyroscopic Motor Synd., Ltd. The photograph shows the engine revolving at a speed of 4,000 r.p.m., but it will be noted that, although the photograph has been taken by timed exposure, the outline of the machine is very clearly defined, which is a good demonstration that the engine is practically vibrationless.



### Automatic Carburetters and Twin Engines.

Sir,—I have recently fitted a Binks two-jet carburetter to my 6 h.p. twin Rex, and noticing a letter in last week's issue on this subject, I should like to give you my experience. The carburetter fulfils all the conditions mentioned by "Socrates." The flexibility of the engine is increased in a marked degree, and I now run through all traffic on a  $3\frac{1}{2}$  to 1 gear; previously I had to use the low.

The engine picks up quickly and without jerk after slowing down. The velocity of the air past the small jet is high at slow speeds, and a small charge of good gas is taken into the cylinder, consequently there is no misfiring. The machine runs from 25 to 30 m.p.h. on the flat on small jet alone, and the large jet is only used on stiff hills.

My consumption at ordinary touring speeds on average roads is about 70 m.p.g. I carefully checked my last run of sixty-five miles, and the consumption worked out at 73 m.p.g.

FRANK HALL.

### Combined Chain and Belt Drives.

Sir,—"Ixon" in an issue of *The Motor Cycle* recently claims to have done much to popularise the combined drive. Be this as it may, it has taken him six or seven years to come to the conclusion that the speed gear is a necessity on a touring machine. Even to-day he has got the "hang" of the full chain drive.

Personally, I favour the combined drive from the simple fact that it is a decided step towards the chain drive and its adoption, and its winning the Junior T.T. will do a very great good in exploding some of the "popular" fallacies regarding the chain drive.

Looking into the advantages of the combined drive over the direct drive, we get with the former a short high speed chain drive to a counter-shaft, thus being enabled to use a larger "small" pulley for the belt drive. This belt drive in consequence becomes more durable, and less likely to belt slip—two very desirable points of advantage. We are assured by riders of this drive that it is perfectly satisfactory. For years motor cyclists have been taught by the press that the belt drive is best; now the press is going out to teach the motor cyclist that the combined drive is better than the belt—that by introducing the weakest half of the much abused chain drive we are getting a better drive. This I thoroughly uphold from my own experience of various forms of drive. In use the combined drive adds one hundred per cent. to the life of the belt; we have this on good authority from many riders of this drive. It also reduces the worry from belt slip. This result is gained by the adoption of the weakest half of the chain drive—the high speed front chain. This is a point I want motor cyclists to understand; hence its repetition. In fact, the chain is given the first and hardest part of the driving stresses to transmit, whilst the belt is left off with a comparatively light part to do. Even then the much abused chain wears longer than the belt, and gives less trouble on the way. This being a fact, I fail to see the object of retaining the belt at all; why not have the back chain of the chain drive as well? The back chain gives less trouble than the front chain, and generally lasts for about 12,000 to 15,000 miles.

Designers are aiming at a belt drive that does not slip and has long life. There have been great improvements in belts and pulleys, and now by the introduction of the chain to help them out these aims have nearly been accomplished, but we still do get belt slip and belt adjustments to do on the road. Directly the makers do attain these perfections in their belt drives, they will only have attained the points of superiority that the correctly designed chain drive, as brought out nine or ten years ago by Messrs. Phelon and Moore, has held out to them for all this time. What is there in the belt itself that makes it so beloved of the average motor cyclist? Want of experience with chain drive, I think.

For those who do not know what a correctly designed chain drive should be, I may say that the important points in such a drive are that it should have an independently adjustable slip clutch in addition to the clutch or clutches necessary for a speed gear if fitted; that the chains should not be long enough between centres to allow excessive side swing; and that easy adjustment should be provided. The P. and M., Enfield, and A.J.S. are chain drives which satisfy these conditions. There are many other chain drives on the market besides these at present, but which

do not have slip clutches fitted, and these latter are only too likely to make the chain drive harsh. It is not an absolute necessity to have the chains covered, but only an advantage, and if they are covered the covers should be absolutely oil and dust-tight, otherwise the chains are better left uncovered altogether.

The first cost has more to do with the popularity of belt drive than whether it is the best drive. T. F. MAW.

### Running on Paraffin.

Sir,—I should like to give your readers the benefit of my experience of running on paraffin. The following experiments were conducted on a 3 h.p. Triumph, with a 1911 B. and B. carburetter and 32 jet. The first fuel tried was White Rose oil, flash point 105° F. The tank was emptied of petrol and filled with this oil, the top of the float chamber was unscrewed and filled with petrol, and the paraffin tap turned on. The engine started up easily, and, after running about half a mile, I thought it would stop, but no, it kept going merrily on the paraffin, so I tried a few hills. I found that I obtained slightly less power and that the engine would not run so fast as on petrol, and the exhaust was slightly smoky. However, I ran for two months on White Rose, cleaning the cylinder and piston every hundred miles. I also found that the engine would not restart on this paraffin unless the engine was very hot. During a short run the engine got very hot indeed and special air-cooled oil had to be used, and advantage had to be taken of cooling the engine on every down grade, but with all these precautions the engine played the blacksmith's tune on steep hills, which could not be rushed. To start from cold by filling the carburetter with petrol was a troublesome and dirty task, so I rigged up a petrol tank underneath the seat, communicating with the carburetter by means of a cock and a one-eighth inch copper tube. A one-eighth inch hole was drilled in the spraying chamber just above the choke tube, and the copper pipe was pushed through the hole until its end was vertically above the hole in the jet. To start the machine from cold, the petrol cock was turned on and adjusted until petrol dropped slowly from the bottom air funnel; the engine then started at a walking pace, and after running three-quarters of a mile the paraffin could be turned on and the petrol off. If the paraffin was turned on before the engine was really hot thick clouds of smoke came from the exhaust.

My last experiment was conducted with Royal Daylight paraffin, flash point 81° F., specific gravity .797, and heating value 20,100 B.T.U. per lb., price 8d. per gallon. With this I found that I could switch over from cold after covering 300 yards on petrol. The machine climbed hills better, the exhaust was smokeless at all times, and there was no sign of knock on hills, while the engine ran about 96 miles per gallon, and it was as fast as on petrol.

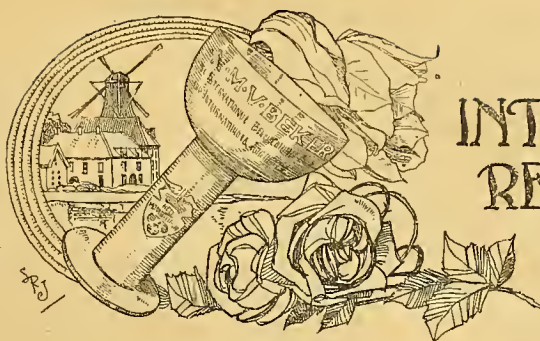
VULCAN.



G. S. Hull (3 1/2 h.p. Scale-Jap) ready to start in the Sheffield and Hallamshire M.C.C. hill-climb.



# ENGLISH =DUTCH



# INTERNATIONAL RELIABILITY TRIAL

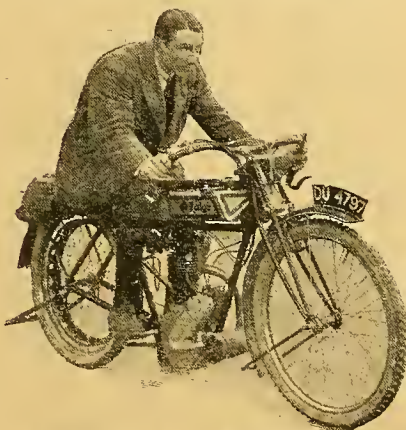
## VICTORY OF THE DUTCH TEAM BY 35 POINTS.

**M**AINLY by reason of the fact that in England the motor cycle is much more popular than in any other country, international contests have not appeared as leading events on our yearly fixture lists. Though England was always willing to fall in with any suggestion of international competition, no international reliability trial had hitherto been arranged. The English-Dutch trial was the outcome of a visit to the Isle of Man last year for the T.T. Races of a party of members of the Dutch Motor Cycle Club.

Immediately the idea of an international contest was broached by the sporting secretary of that body, Mr. A. Citroen, of Amsterdam, it was taken up with enthusiasm on this side, and last November matters began to take definite shape. The rules were formulated by the Dutch Motor Cycle Club, and *The Motor Cycle* was invited by the officials of that body to receive entries from British riders, which we agreed to do—though taking no part in the organisation of the trial—and soon so many entries were received that a process of elimination became necessary.

Eventually it was resolved to appeal to committees of leading motor cycle clubs to aid in the selection, and representative teams were chosen by this means. In brief, the chief rules of the contest were as follows: Genuine touring machines to be used by all, completely equipped for the road. Eighteen riders to represent each country, composed of nine private owners and nine trade men. Each team to be divided into three lightweights, three mediumweights, and three heavyweights, with or without sidecar attachments. Conditions, a non-stop run at 19 m.p.h. Entry fees: Trade riders, £1; private owners, 5s. As it was neces-

sary for each team to appoint reserve men in case of any untoward incident preventing a team man from starting, medals were offered to all reserve riders who covered the 158½ miles course without a stop and within schedule time.



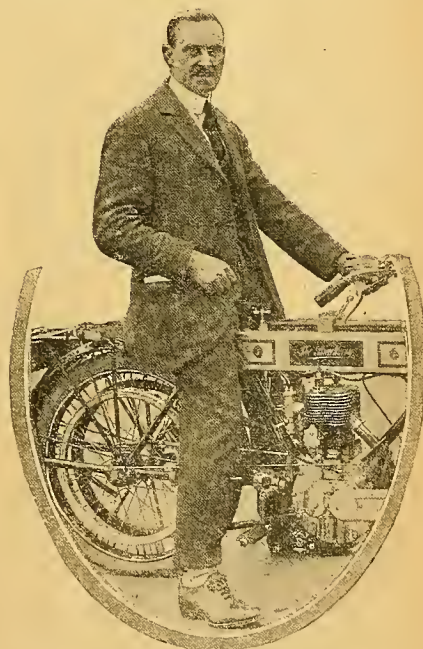
Vernon Taylor (3½ h.p. Rudge), private owner.

### A Strong Trade Team.

The trial has been eagerly looked forward to for weeks past. The English trade section were very confident of success, and a glance at the list will show that practically all the leading reliability

trials riders had been voted to a place in the team. The amateur section was not quite so strong, for various reasons.

Unfortunately, Holland being so flat the trial could not be made a strenuous one, and our Dutch friends were evidently anxious to ensure that the trip be made enjoyable to their English guests, for, instead of split seconds timing at controls, fifteen minutes' latitude was allowed.

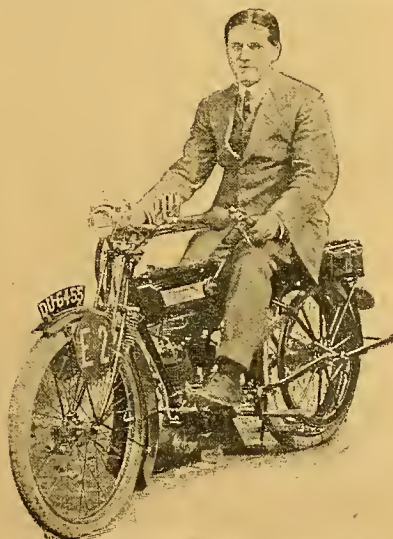


W. Cooper (3½ h.p. Bradbury), captain of the private owners' team.

### Programme of the Trip.

In connection with the visit, the Dutch Club officials thoughtfully arranged an attractive programme for the English team, and the official handbook, illustrated with photographs of the officials, and printed in Dutch and English, will be preserved by the British participants in commemoration of the occasion.

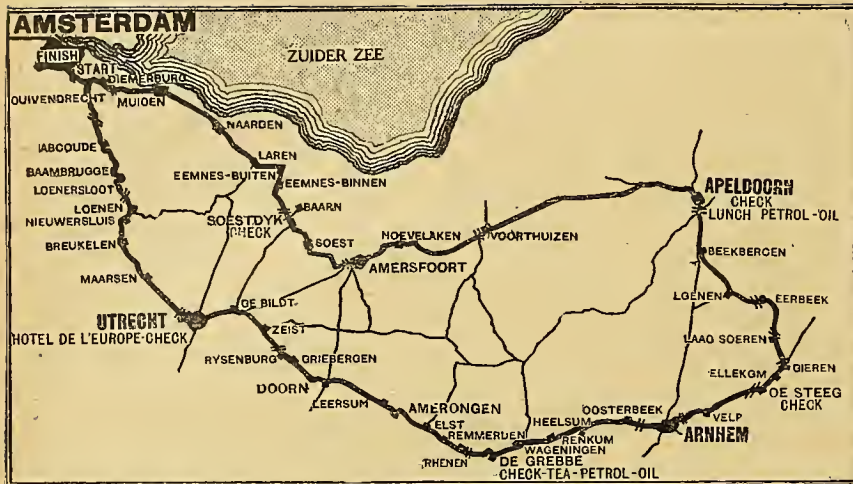
The English teams and reserves assembled at Harwich last Saturday evening, where they had been requested to report themselves to the respective captains, Messrs. Cooper and Pratt, before six o'clock. Most had travelled down



Geoffrey Smith (2½ h.p. Humber), private owner.

W. F. Newsome (3½ h.p. Triumph), trade.



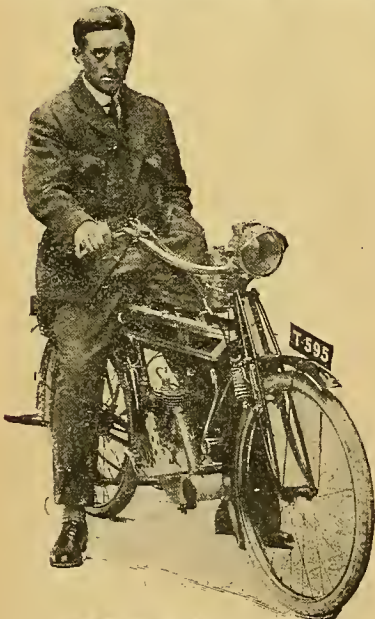


from town, the whole of the arrangements having been made by Mr. H. Moroney, of the Royal Automobile Club Touring Department. A goodly number of non-competitors journeyed with the party.

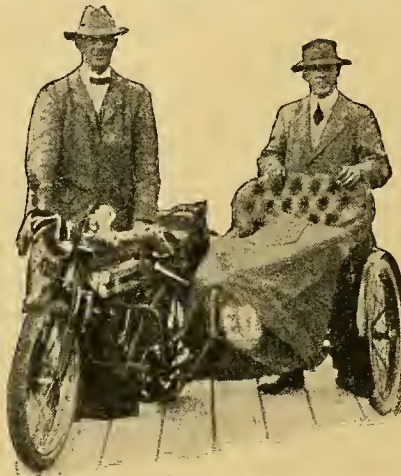
In the early hours of Sunday, the boat reached the Hook, and here we found Messrs. Citroen (hon. sec.), Robt. R. toe Laer (president), and J. Ferwerda (committee) to welcome the party. After breakfast in the Hotel America, a visit was made by motor cycle to the Hague and Scheveningen, the noted bathing place, the "Keep to the right" rule troubling the riders not a little. An official dinner had been arranged for the evening in Amsterdam, the machines having previously been examined and locked up for the morrow.

#### The Course.

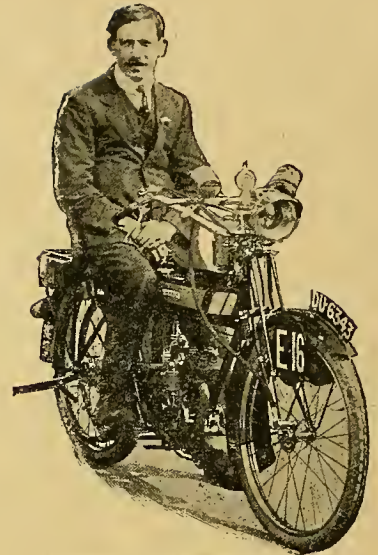
The 158 1/2 miles course is shown on the accompanying map, checks being arranged at Soestdyk, Apeldoorn (luncheon stop), De Steeg, De Grebbe, Utrecht, and Amsterdam. The penalty for an involuntary stop was three marks,



Reg Holloway (2 1/2 Premier) trade team.



F. W. Barnes and passenger (6 h.p. Zenith), trade.



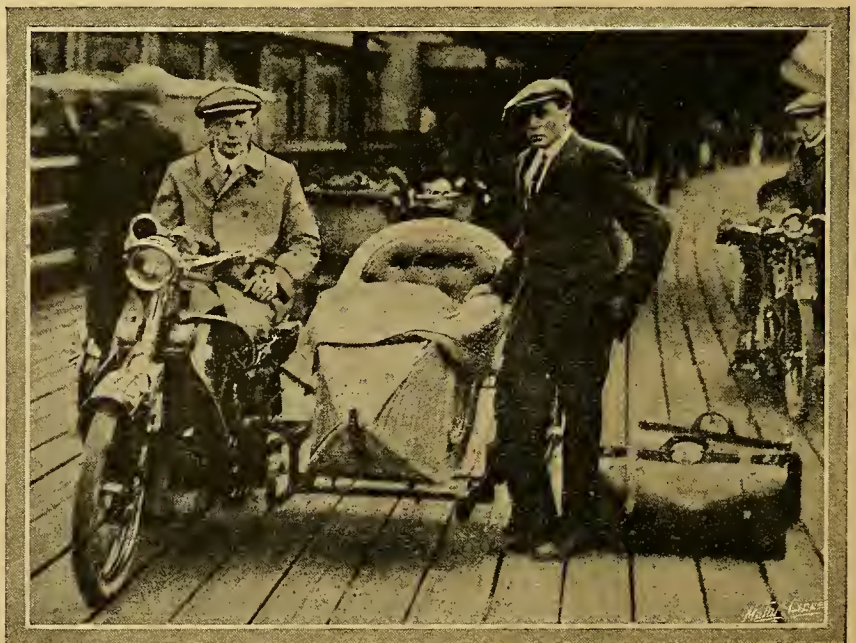
S. Wright (2 1/2 h.p. Humber) trade.

and one mark was deducted for every minute early or late at controls. In case of any competitor not finishing within schedule time, fifty marks were to be deducted.

#### The International Trial.

Competitors met at 7.0 a.m. at the Darracq Palace, Stadhonderskade, where armlets were issued and tanks replenished. The British machines had green circular number plates with the letter E before the number, and the Dutch machines H.

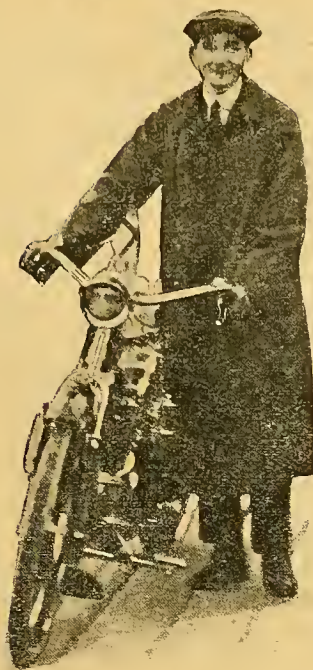
At eight o'clock, in the presence of a big crowd, the first trio was despatched by Mr. Citroen, followed by the remainder at minute intervals as follows:



F. A. Applebee and O. C. Godfrey (3 1/2 h.p. Scott Sidecar), trade.



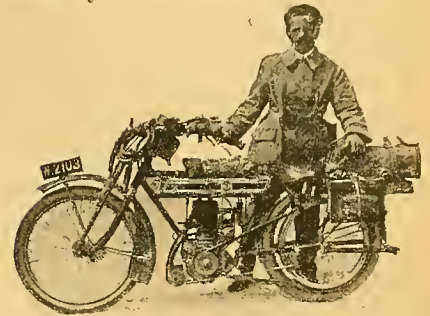
- H. 1 N. Ruyter (1-cyl.  $3\frac{1}{2}$  N.S.U.)  
 E. 2 Geoffrey Smith (2-cyl.  $2\frac{3}{4}$  Humber)  
 H. 3 H. Dieters (2-cyl. 6 Phaunomobil)  
 E. 4 W. W. Douglas (2-cyl.  $2\frac{3}{4}$  Douglas)  
 H. 5 Hugo Smit (1-cyl.  $3\frac{1}{2}$  N.S.U.)  
 E. 6 Frank Smith (2-cyl. 5-6 Clyno)  
 H. 7 E. J. E. Maas (4-cyl. 5-6 F.N.)  
 E. 8. C. M. Down (2-cyl.  $2\frac{3}{4}$  Royal Enfield)  
 H. 9 D. Croll, jun. (2-cyl. 7 Indian)  
 E. 10 R. Holloway (1-cyl.  $2\frac{1}{2}$  Premier)  
 H. 11 P. J. Adrian (1-cyl.  $3\frac{1}{2}$  Eysink)  
 E. 12 F. W. Barnes (2-cyl. 6 Zenith)  
 H. 13 P. N. Jelsma (1-cyl.  $2\frac{3}{4}$  Eysink)  
 E. 14 A. E. Uffleman (2-cyl. 6 Rex-Jap)  
 H. 15 D. de Roon (4-cyl. 5-6 F.N.)  
 E. 16 Sam Wright (2-cyl.  $2\frac{3}{4}$  Humber)  
 H. 17 R. S. Stokvis (1-cyl.  $3\frac{1}{2}$  Rover)  
 E. 18 F. A. Applebee (2-cyl.  $3\frac{1}{2}$  Scott)  
 H. 19 Jacq Fonck (1-cyl. 2 Vulkaan)  
 E. 20 W. P. Newsome (1-cyl.  $3\frac{1}{2}$  Triumph)  
 H. 21 J. L. Geidt (2-cyl. 6 Cyclonette)  
 E. 22 Vernon Taylor (1-cyl.  $3\frac{1}{2}$  Rudge)  
 H. 23 G. Th. Arends (1-cyl. 2 Vulkaan)  
 E. 24 W. Cooper (1-cyl.  $3\frac{1}{2}$  Bradbury)  
 H. 25 Dirk v. d. Mark (1-cyl.  $2\frac{3}{4}$  F.N.)  
 E. 26 W. Pratt (1-cyl.  $3\frac{1}{2}$  Phelon and Moore)  
 H. 27 J. W. Boots (2-cyl. 6 Coronamobil)  
 E. 28 Fred Dover (1-cyl.  $3\frac{1}{2}$  Premier)  
 H. 29 J. H. Nieuwenhuis (2-cyl.  $2\frac{3}{4}$  Douglas)  
 E. 30 C. W. Wilson (2-cyl. 8 Morgan Runabout)  
 H. 31 Firma Eysink (1-cyl.  $2\frac{1}{4}$  Eysink)  
 E. 32 J. H. Slaughter (1-cyl.  $3\frac{1}{2}$  New Hudson)  
 H. 33 C. Witteveen (1-cyl.  $3\frac{1}{2}$  James)  
 E. 34 F. C. Wasley (2-cyl.  $2\frac{3}{4}$  Douglas)  
 H. 35 H. Daalmeyer (2-cyl. 6 Cyclonette)  
 E. 36 E. Lester (1-cyl.  $3\frac{1}{2}$  Phelon and Moore)  
 H = Holland, E = England.

W. Pratt ( $3\frac{1}{2}$  h.p. P. & M.) trade.**A Dutch Victory.**

The contest resulted in a handsome victory for the Dutch team, who lost 28 marks as compared with the English team's loss of 63 marks. F. C. Wasley, who early experienced trouble with his magneto and missed one check in consequence, lost 43 marks of the total English loss. The trial was rendered difficult by atrocious roads, but the organisation was excellent. The Dutchmen rode consistently, and caused some surprise among the English competitors, who hardly expected to find their opponents so diffi-

cult to wrestle with. The weather was fortunately, fine, and big crowds in the towns passed through witnessed the contest and cheered the riders on.

Of the British team non-stop runs were made by the undermentioned:

Fred Dover ( $3\frac{1}{2}$  Premier) private owner.**PRIVATE OWNERS.**

Geoffrey Smith ( $2\frac{3}{4}$  Humber)  
 W. Cooper ( $3\frac{1}{2}$  Bradbury)  
 Fred Dover ( $3\frac{1}{2}$  Premier)  
 C. W. Wilson (8 Morgan Runabout)  
 E. Lester ( $3\frac{1}{2}$  P. and M.)

**TRADE RIDERS.**

W. W. Douglas ( $2\frac{3}{4}$  Douglas)  
 Frank Smith (5-6 Clyno sc.)  
 Sam Wright ( $2\frac{3}{4}$  Humber)  
 W. F. Newsome ( $3\frac{1}{2}$  Triumph)  
 W. Pratt ( $3\frac{1}{2}$  P. and M.)  
 F. W. Barnes (6 Zenith sc.)  
 J. Slaughter ( $3\frac{1}{2}$  New Hudson)  
 F. A. Applebee ( $3\frac{1}{2}$  Scott sc., C. G. Godfrey passenger)

Further details will appear in our next issue. It was arranged that Tuesday be spent at Volendam and Marken, Wednesday at the Hague, the return journey being commenced at eleven o'clock that evening.

W. W. Douglas ( $2\frac{3}{4}$  Douglas) trade.J. Slaughter ( $3\frac{1}{2}$  h.p. New Hudson) trade.F. C. Wasley ( $2\frac{3}{4}$  Douglas) trade.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Aug. 8th	...	8.35 p.m.
" 10th	...	8.31 "
" 12th	...	8.28 "
" 14th	...	8.24 "

## The Institution of Automobile Engineers

Some very interesting papers will be read at the meetings to be held during the autumn. The paper on "Motor Cycles" by Mr. W. Chater-Lea, and that on "Two-cycle Engines" by Mr. Dugald Clerk, F.R.S., should be particularly interesting to motor cyclists.

## A Favourable Report.

Frank Smith reports very favourably upon the 1913 model Clyno three-speed gear box he used in the Scottish six days' trial. Dismantling it for inspection after trial, it was found to be in perfect condition, and consequently it was put together again for the Dutch trial and the A.C.U. six days' trial.

## A New Light Norton

The 2½ h.p. Norton ridden by F. A. Hardy, a reserve rider in the Dutch trial, is an advanced model of the machine the Norton Manufacturing Co. will market next year. The engine measures 67 x 85 mm. The first machine was hastily assembled for the English-Dutch trial, but the standard model will be lighter, shorter in wheelbase, and in other ways improved.

## Military Motor Cyclists.

A new cyclist battalion is in process of formation for the County of Warwickshire of which, we understand, Colonel W. R. Ludlow will be the honorary colonel. The battalion will be commanded by Colonel Arthur Du Cros, M.P., whose idea is to have a battalion entirely composed of motor cyclists. This has the warm approval of the Secretary of State for War.

Letters should be addressed to Colonel Arthur DuCros, M.P., 4, Regent Street, London W.

## The Triumph Counter-shaft Gear.

The new Triumph three-speed counter-shaft gear is expected to make its first official appearance in the Six Days' Trials, though there was a doubt last week-end whether it would be completed in time. J. R. Haswell (who has had the confidence to enter a 3½ h.p. passenger machine in such a severe trial) and W. F. Newsome are expected to use it. Both are to use Sturmey Archer gears if the new Triumph is not completed in time. The new Triumph automatic carburettor will appear on several machines of that make. H. Lister Cooper will, it is said, ride a fixed gear Triumph.

## FUTURE EVENTS

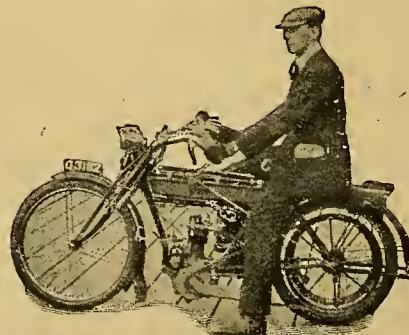
- Aug. 12-17.—A.C.U. SIX DAYS' TRIALS. Taunton as a centre.
- " 31.—Coventry and Warwickshire M.C. Open Hill-climb.
- " 31.—Dublin M.C.C. Open Sidecar Reliability Trial.
- Sept. 7.—Steeatham and District Open Hill-climb.
- " 7.—Liverpool M.C.C. Open Reliability Trial.
- " 14.—B.M.C.C.C. Race Meeting.
- " 16.—Edinburgh and District M.C.C. Open Hill-climb on Amulree.
- " 21.—Herts. County M.C.C. Open Hill-climb.
- " 21.—Birmingham M.C.C. 24 Hours' Run to Edinburgh (Open)

## A Guide to the Six Days' Trials.

This issue contains reproductions from the official maps, also a timetable showing the time the competitors are due at different points on the course, and a complete list of entrants with their armlet numbers. Readers in the West country will consequently find this issue a particularly useful guide in identifying the riders and following the trials next week.

## Scottish Six Days' Trials.

In the results of the above trials published last week, it was stated that G. Taylor (Rudge) lost 91 marks, and gained a bronze medal. The officials have since discovered that this was an error, and have awarded Taylor a silver medal, he having lost 60 marks only. Hugh Gibson was disqualified; it will be remembered that this rider's award remained undecided last week. No reasons are given for the disqualification. Frank Smith (Clyno sc.) claims a clean ascent of Kenmore Hill, and points out that his sidecar was the only one to climb the hill without a stop. C. M. Keiller's G.W.K. also made a non-stop climb.



F. A. Hardy (2½ h.p. Norton Lightweight) who went to Holland as a reserve in the English-Dutch Trial.

## SPECIAL FEATURES.

### ENGLISH-DUTCH INTERNATIONAL TRIAL

#### A.C.U. SIX DAYS' TRIALS.

Official Maps, Contours, Daily Routes, and Entries.

### A Record Entry for the Six Days' Trials.

There is a record entry for the Six Days' Trial, which commences next Monday. The A.C.U. officials will have an extremely difficult task to handle more than 120 competitors. Great interest in the trial is being taken in Devonshire and Somerset, and it is expected that large crowds will line the route. Motor cycle trials are few and far between in the West country.

### A Triumph Desaxe Engine.

For some weeks past the Triumph Cycle Co., Ltd., have been experimenting with a 3½ h.p. engine with offset cylinder. In other respects the engine is standard. F. Hulbert is now using the new engine in his own machine, but he told us last week that he could detect little or no improvement from the change, and there was no likelihood at present of it being adopted for 1913.

### The A.C.F. and the Motor Cycle.

The Automobile Club of France, like the R.A.C. in Great Britain, is the governing body of all phases of motoring in that country, and it has at last decided to take an interest in the motor cycle. Its Competitions Committee will hold a 1,500 kilometres trial (approximately 930 miles) from October 7th to 12th. The course will radiate from Paris, and for the first five days will be 270 kilometres per diem, and for the sixth day 150 kilometres. The motor cycles will probably be stored at Neuilly. Every machine will have to be in touring trim, fully equipped for the road. The classes will be as follow:

CLASS 1 (motor bicycles).—A. Single-cylinders up to 250 c.c., minimum weight 40 kgs. without oil and petrol, tyre section limit 45 mm. B. Single or multi-cylinders up to 350 c.c., minimum weight 50 kgs., minimum tyre section 45 mm. C. Singles or multis up to 500 c.c., minimum weight 60 kgs., minimum tyre section 50 mm.

CLASS 2 (passenger machines).—A. Single or multi-cylinders up to 350 c.c. B. Single or multi-cylinders up to 500 c.c. C. Single or multi-cylinders up to 1,000 c.c. A clutch and change-speed gear must be fitted to all passenger machines.

A valuable cup will be presented to the competitor losing the least number of marks, and medals to others performing satisfactorily.



**Registration Letters.**

The new registration letters for Birmingham are O.A.

**Stolen Machine.**

A 1911 2 h.p. Singer was stolen on the 2nd inst. from Reading. The machine number is 254250. The front wheel has an old Dunlop studded tyre and back wheel new Palmer studded. Watawata belt, special footrests with ordinary cycle pedals. A reward is offered by T. Baker and Sons, Friar Street, Reading.

**Lady Motor Cyclists.**

One does not often meet De Dion type tricycles on the road nowadays, and still less seldom are ladies seen on this old pattern machine, but we saw a smart lady motor cyclist last week at Leominster riding a motor tricycle, behind which was a trailer containing one or more children.

**Imitating the Aeroplane.**

The latest use for the motor cycle is to provide the noise made by an aeroplane at a theatrical performance. The aeroplane is heard "off" and the motor cycles, two Douglas twins, with open exhausts, are started upon the stand to imitate the exhaust of a whirling Gnome engine. The result is quite realistic.

**Grand Prix de France.**

The route for the Grand Prix de France, August 25th, is as follows: Fontainebleau, Arbonne, Achères, Ury, Fontainebleau. This circuit measures thirty kilometres and will have to be covered fifteen times by motor bicycles, and twelve times by sidecars in the maximum time of twelve hours, or at an average speed of 23.3 miles per hour for motor bicycles and 18.7 miles per hour for sidecars.

**Racing in the Antipodes.**

Some exciting racing was witnessed at the flying mile championship of the New South Wales M.C.C. on the Ascot race-course at Botany Bay. There was so large an entry that the championship had to be run off in heats. J. E. Yee (3½ h.p. Triumph) made the fastest heat time in 4 mins. 32½ secs., but he could only finish second in the final, first place going to A. Robinson, in 4 mins. 26½ secs. Robinson also won the handicap held in conjunction with the championship from scratch, Yee, also at scratch, being third.

**A Strange Advertisement.**

The following advertisement was published in a recent issue of *The Irish Times* in the "Motors for Sale and Wanted" column:

FRANCOIS 2½ h.p. 1912, San Salvador's contribution to the Motor Cycle Trade; "Turnover" rims, magneto governor, Protean gear, live axle, gasoline cap four gals., wind cooled, interruption on handle-bar; wonderful climber; quite unique.

Our knowledge of the industry does not enable us to state definitely where the machine hails from, but we should be very interested to know what San Salvador's contribution to the motor cycle trade is. The Protean gear is also unknown to us in connection with motor cycles.

**Petrol Consumption.**

The results of the petrol consumption test which recently took place at Southland, New Zealand, were: 1, J. Davies (3½ B.S.A.); 2, A. Prentice (3½ B.S.A.); 3, E. Gray (3½ B.S.A.). A large number of competitors took part mounted on various other makes.

**Speed Limit Applications.**

Two speed limit applications are now under consideration by the L.G.B. They are relating to certain lengths of road in Wanstead (Essex) and Sutton Coldfield (Warwickshire). Both applications are opposed by the R.A.C. and the A.A. and M.U. and local organisations.

**Italian Road Race.**

An Italian motor cycle race was held on the 28th ult., at Milan, over a 314 kilometres out and home course. The following are the winners of the respective classes: Class I., 250 c.c., Cremaschi (Moto Réve), 7h. 44m. 48s.; Class II., 333 c.c., Gnesa (Buchet), 5h. 46m. 22½s.; Class III., 500 c.c., Vailati (Rudge), 5h. 8m. 7½s.; Class IV., multis, 500 c.c., Ghirlanda (N.S.U.), 5h. 22m. 14½s. Fastest time, Vailati (Rudge) = 61 kilometres per hour.

**French International Cup Race.**

For the international race to be held on the Le Mans Circuit on September 8th and 9th, the motor cycle course will be considerably shorter than the car course. Starting from Le Mans, motor cyclists will travel along the *route nationale* until just before the junction of roads at Mulsanne. Here is a sharp left-hand turn, and then the road passes through Ruandin and back to Le Mans. An alteration has been made in the regulations which enables cyclecars with a cylinder volume not exceeding 1,000 c.c. to take part in Class III.

**Additional Entries Six Days' Trials.**

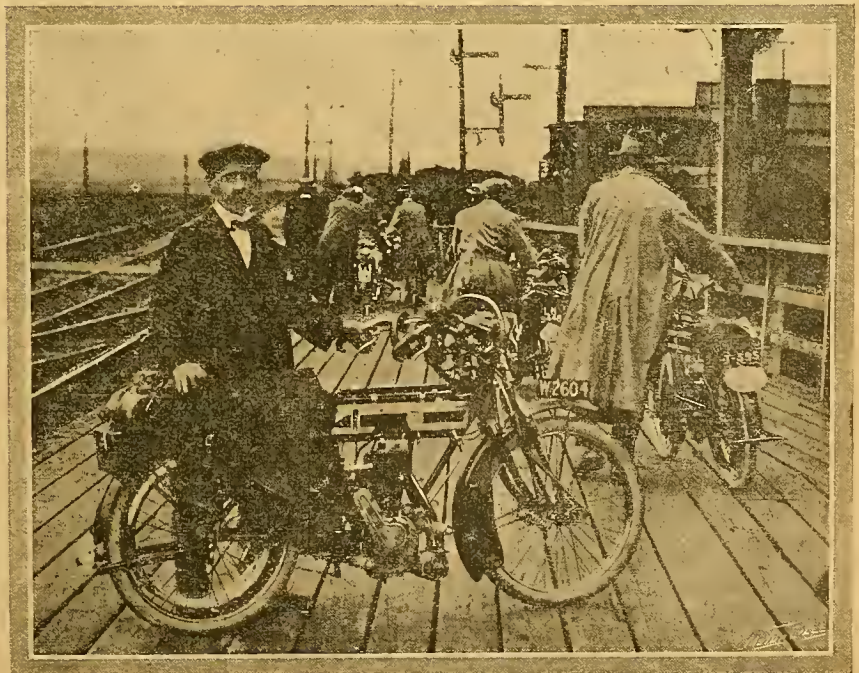
P. J. Evans (2½ Humber), A. J. Dixon (3½ Singer), Miss Hammett (2½ Douglas).

**Belgian Motor Cycle Race.**

On the 25th inst. a race will be organised by the Motor Club of the Littoral and of West Flanders, under the patronage of the A.C. of Ostend. The competition will be over a course 200 kilometres in extent. Further information may be obtained from the secretary, 29, Avenue Leopold, Middelkerke, Belgium.

**Road Making in the North American Continent.**

Mr. W. Rees Jeffreys, secretary to the Road Board, has just returned from a visit to the United States and Canada to secure the attendance of the principal American and Canadian road engineers at the International Road Congress to be held next year in London, and to enquire as to the state of the roads in the two countries. During a talk we had with Mr. Jeffreys, he told us that things were really moving in the States as far as roads were concerned, and that a few years hence there would be concrete evidence of the result of the "good roads movement." Good roads did exist in Massachusetts, and in certain big towns, and especially in the city parks, but roads as connecting links between the great cities were practically non-existent. People, however, were keenly alive as to the necessity of good roads. Owing to the political system good roads were made, and then, owing to frequent changes of officials, were often allowed to be worn out to a quagmire. Canada was far behind the States as regards roads, but showed signs of waking up. Mr. Jeffreys, who was a motor cyclist in the early days, told us that he saw very few motor bicycles over there, but numberless cars.



English-Dutch Trial. Competitors wheeling their machines off the harbour station platform, Harwich.



## MERSEY M.C. OPEN CLIMB AT PEN-Y-BALL.



A busy scene in the enclosure before the start.

THE Mersey M.C. held a successful competition at Pen-y-Ball, Holywell, on the 3rd inst., which took the form of an open flexibility hill-climb. The formula used was F—S (where F = fast speed in m.p.h., and S = slow speed, largest figure wins).

## CLASS 1 (up to 350 c.c.)

	Formula.	Time.
F. Whitworth (2½ Douglas) ...	1	2
E. J. Jenkins (2½ Douglas) ...	2	5
E. J. Moon (2½ Douglas) ...	3	4

Fastest time was made by S. W. Philippott (2½ h.p. Humber). F. A. McNab (2½ h.p. Douglas) broke his belt, and A. J. Jenkins (2½ h.p. Douglas) blew out a plug.

## CLASS 5 (Sidecars and Cyclecars).

	Formula.	Time.
A. J. Brewin (8 Zenith-Gradua sc.) ...	1	1
N. Brown (7 Indian sc.) ...	2	4
H. W. Coopland (8 Williamson sc.) ...	3	5

E. Longden (8 h.p. Dot sc.) carried a dog as well as passenger, but the only adult passenger was Mrs. Baxter, who went up in the Williamson; the other competitors carried local children.

## CLASS 2 (351 to 600 c.c.).

	Formula.	Time.
P. Prond (3½ Rudge multi.) ...	1	5
H. Bottoms (3½ Triumph) ...	2	3
H. D. Ashworth (3½ Triumph) ...	3	2

The fastest time was made by T. Pollock (3½ h.p. James), who failed in the slow climb. S. W. Philippott (3½ h.p. Humber) had chosen a low gear, and though he lost ground in the fast climb, he came up so slowly afterwards that he had difficulty in steering.

## CLASS 3 (601 to 1,000 c.c.).

	Formula.	Time.
A. J. Brewin (8 Zenith-Gradua) ...	1	5
N. Brown (7 Indian) ...	2	3
J. J. Cookson (7 Matchless) ...	3	2

H. Reed (8 h.p. Dot) made fastest time, but did not attempt the slow climb.



N. Brown (Indian and sidecar) nearing the top of the hill.



## Mersey M.C. Open Hill-climb at Pen-y-Ball.—

CLASS 4 (unlimited).

	Formula.	Time.
N. Brown (7 Indian) ... ..	... 1 ...	5
J. H. Roscoe (5 Victoria-Peugeot) ... ..	... 2 ...	6
E. F. Baxter (6 Rex) ... ..	... 3 ...	4

As in Class 3, H. Reed rode only in the fast climb, and made the fastest ascent.

The weather was fine until Class 3 was being run, when a drizzle began, which continued till the end. There was a large number of spectators. The thanks of the club are due to the police authorities and the Urban District Council. In spite of the silencer rule, many machines had the ends of the silencers removed and were very noisy.

The object of this competition was to prove that the petrol engine is a flexible prime mover when properly driven.

## M.C.C. HILL-CLIMB AND BRAKE TEST.

THE above annual event was run off on Saturday and Monday last. The conditions were quite simple, and were really a test of the machine rather than of the rider. The course started from the Bear at Hungerford, on the Bath Road, to Devizes, Radstock, Wells, Bridgewater, Minehead (lunch), Porlock (hill-climb), Countisbury (brake test), Lynmouth (tea), Lynton Hill (hill-climb), Parracombe, and Barnstaple. The return journey was over the same route, with a timed hill-climb on Countisbury to

reported having burst his back tyre at Devizes and changed it. Dixon suffered a crop of troubles, punctures, silencer end dropped off, and ran out of petrol, etc. Just outside Minehead Guest broke his exhaust lifter wire.

The last ten miles into Minehead rain fell in torrents, and this made Porlock Hill practically unrideable. Kickham was reported as having seized his engine and retired near Nether Stowey. Howe skidded and fell and had a puncture near the same place. Beal was also in trouble with one cylinder missing.

## Porlock Hill-climb.

After lunch came Porlock hill-climb, and, as was anticipated, the hill was an inch or more deep in slime, with much loose stone. Times were taken from about 200 yards below the first corner to 1,360 yards up. This included both bends, and finished where the gradient eased to 1 in 12. Considering the state of the surface, it is remarkable that anyone reached the second corner in the saddle, especially considering that touching the ground with the feet put the rider out of the running for the cups. Observations on the hill were that B. J. Mariani went to the second corner in the saddle, as did Karslake, Sproston, Meredith, and Guest, who shed his passenger and then finished. Those who stopped on the first corner for various reasons were L. A. Baddeley, Gray, Popplewell (who descended and made a 'clean' ascent), R. M. Mariani, Walker, Bentley, D. S. Baddeley, and Rootes. C. T. Newsome got round the second corner, but had to stop because the front mudguard was choked up with the mud. Morgan got to the second corner, was assisted round, and finished with his passenger—a very fine performance. Dixon was the only solo rider to stop in the saddle all the way, but steadied and assisted with his feet practically all the way up.

Tippett and Charlesworth were very late and we did not observe them, but they were reported to have stopped. Kerr, da Silveira, Percival, Davis, and Howe decided to take the toll road after failing on the hill.

## Lynton Hill-climb.

Everyone then proceeded to Lynmouth for tea, and after inspecting the surface of Lynton it was decided to make the climb optional. Strange to say, nearly all made clean ascents, and these were in the order of climbing it: Kars-

Mersey M.C. Open Climb, competitors returning down hill for slow ascent.

decide winners of the cups, and a brake test on Porlock. To qualify for a cup award, a competitor had to climb all the test hills without pedalling, dismounting, or touching the ground with his feet, and make a standard performance over the rest of the course of 276 miles. A splendid entry of thirty-one was obtained, and the following started:

Rider.	machine.	and gear.	Rider.	machine.	and gear.
A. Baddeley (3½ P. & M., P. & M.)			J. H. Kerr (3½ N.S.U., N.S.U.)		
M. Mariani (3½ P. & M., P. & M.)			H. J. Beal (3 N.S.U. twin, N.S.U.)		
J. Mariani (3½ P. & M., P. & M.)			W. P. Tippett (3½ Humber, Humber)		
Karslake (3½ Rover, Armstrong)			A. da Silveira (7 Indian twin, Indian)		
Walker (3½ Rudge, Multi)			D. Popplewell (3½ Rover, S. Archer)		
T. Gray (3½ Rudge, Multi)			C. T. Newsome (3½ Rover, S. Archer)		
S. Baddeley (6 Baddeley twin, single gear)			E. Charlesworth (6 Zenith, Gradua)		
W. Meredith (3½ Bradbury, S. Archer)			C. Percival (6 Zenith, Gradua)		
E. Rootes (3½ Singer, S. Archer)			E. C. Davis (8 Chater-Lea so., Chater-Lea)		
H. Bentley (3½ W.D., Armstrong)			R. E. Guest (8 Matchless, Matchless)		
J. Sproston (3½ Rover, S. Archer)			H. F. S. Morgan (8 Morgan cycle-car, Morgan)		
J. Dixon (3½ Singer, S. Archer)			G. P. Howe (3½ Rudge, N.S.U.)		
			E. Kickham (2½ Douglas, Douglas)		

It is interesting to note that, whereas last year nine out of seventeen entrants used single-gear machines, only one out of thirty-one entrants used a single gear this year, and that there were five passenger machines entered this year as against one last year.

Messrs. F. T. Bidlake and F. Straight started the competitors promptly on Saturday from 8 a.m. onwards at one minute intervals. Incidents were few until near Radstock, when quite a number lost their way, and proceeding we stopped outside Nether Stowey to have a chat with Olsson, who was down to see his fellow members. Gray was adjusting the back wheel part of his gear and cleaning a sooted plug. Bentley had punctured, and Meredith



Mersey M.C. H. W. Coopland (water-cooled Williamson) with Mrs. Baxter in the sidecar.



**M.C.C. Hill-climb and Brake Test.—**

lake, Rootes, Morgan, Meredith, B. J. Marians, L. A. Baddeley, R. M. Marians, Popplewell, Charlesworth, Newsome, Dixon, Guest, Sproston, Davis, and Percival. Percival arrived late and was not observed. Bentley failed at his first try but made a clean ascent afterwards. Kerr and D. S. Baddeley also failed, and the latter was towed up by a waggorette. Tippet arrived late in consequence of a fall and a puncture. From Lynton to Barnstaple the going was fairly easy, but very unpleasant in consequence of torrential rain from Parracombe onwards. Of the starters from Hungerford all arrived at Barnstaple excepting Kickham and Beal, the latter having slashed a tyre and retired. On entering the garage the Morgan caught fire, and things looked lively for a few minutes. No serious damage was done. We also noticed that Howe's exhaust pipe was off and his belt rim bent. He seemed to have quite a lot of small troubles all the way.

**A Day of Rest.**

Dixon had half a dozen punctures in the last ten miles and was considerably delayed thereby. The Imperial Hotel was as comfortable as usual, and, the weather being rough and stormy, Sunday was spent mostly indoors resting.

As there was only one hill-climb on the return journey on Monday, the competitors did not start till 9.30. This was much appreciated. Everyone, excepting Bentley, who lost his way, got well on time to Lynmouth in preparation

for the timed climb on Countisbury Hill. The competitors were divided into three classes and speeds were to be judged at 12, 16 and 20 m.p.h. respectively.

**Countisbury Hill-climb.**

The running was exceedingly close, four competitors taking practically the correct time. After leaving the top of the hill B. Marians skidded in a rut and fell. This set his forks over and rendered the springs inoperative. The lamp also was badly damaged. Then on Porlock Hill, where a brake test was to be held, we met Haswell with his sidecar climbing gamely near the top. The brake test could not be run, as the surface was too greasy to be safe. We also met "F.N." Bell and several Six Days' Trial competitors out to have a look at the course of next week. The run after this was without incident, excepting that Rootes lost his way and was knocked off his machine by a horse. The machine suffered considerably, and he was rendered unconscious for some minutes. After getting his head dressed he pluckily continued and finished to time. Those to finish were: L. A. Baddeley (P. and M.), B. J. Marians (P. and M.), R. M. Marians (P. and M.), Karslake (Rover), Walker (Rudge), Gray (Rudge), D. S. Baddeley (Baddeley), Meredith (Bradbury), Rootes (Singer), Bentley (W. and D.), Sproston (Rover), Dixon (Singer), Kerr (N.S.U.), Tippet (Humber), La Silveira (Indian), Popplewell (Rover), C. T. Newsome (Rover), Charlesworth (Zenith), Percival (Zenith), Davis, (Chater-Lea sc.), Guest (Matchless sc.), Morgan (Morgan), and Howe (Rudge).

## THE EAGLE CYCLECAR.

**T**HE new Eagle cyclecar, manufactured by the Eagle Motor Manufacturing Co., Shepherd's Bush Road, W., is quite an interesting vehicle, designed on sound practical lines. The company does not intend to place the machine on the market, but to manufacture its component parts and to sell them to the trade or any private owner who cares to construct his own runabout. The motive power is an 8-10 h.p. engine, twin cylinders, 85 x 88 mm. The cylinders are set at 50°, and overhead inlet valves are fitted. An interesting feature is the double exhaust. Between the cylinders are two auxiliary exhaust ports, which exhaust into a Y tube; consequently there are three exhaust pipes running from the engine to the silencer—one from each ordinary exhaust port and another which carries the exhaust from the two auxiliary exits. The silencer is placed transversely at the end of the chassis, and the gases issue therefrom through a short fan-shaped pipe.

There is a large sump at the bottom of the crank case, so that a good quantity of oil can be retained. The cotters to the inlet valves are cone-shaped, and fit into a cone-shaped collar, so that the wearing surfaces are larger, and consequently will last much longer. The inlet valve tappets are adjustable top and bottom. The timing gear cover can be removed, leaving the timing wheels *in situ*, and to set the magneto it is only necessary to make an adjustment either on the cone of the driving sprocket, or to remove the small case which abuts on the timing gear cover, and effect the adjustment by moving the pinion enclosed therein forward or backward.

**Details of Construction.**

The first of these vehicles to be turned out has a tubular frame, but in future models the chassis will be of channel steel 1in. wide, 2in. deep, and tapered to 1in. It is narrowed in front, so as to provide an ample steering lock.

The carburettor employed is a Lukin, and the magneto a chain-driven Bosch. The clutch is of the leather to metal type, 9in. in diameter, and is provided with two ball thrust bearings, the external member having a heavy periphery, which acts as an additional flywheel.

The gear box contains three speeds forward and reverse, with direct drive on top, giving a ratio of  $4\frac{1}{2}$  to 1. The after end of the gear box takes out and the shaft may be removed bodily without dismounting the box.

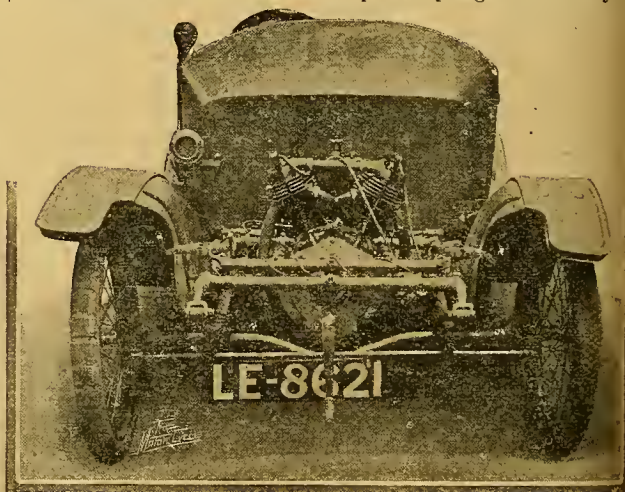
The propeller-shaft has a universal joint fore and aft, the final drive being by worm. The worm drive and differential are of particularly sound design. The two brakes on the rear wheels are of the internal expanding type, and

a similar type of brake is fitted at the after end of the propeller-shaft.

The steering is by worm and sector, and all the steering rods are provided with ball joints. The control levers are carried on the steering column on a separate bracket and do not move with the wheel. These levers control the carburettor and the spark.

**A Sidecar Frame.**

Another interesting item which we inspected at the Eagle Company's Works was a new sidecar frame, the axle of which is carried on semi-elliptical springs. The body is



Front view of Eagle cyclecar showing engine and tubular frame construction:

supported on the usual C-springs and has the footboard also sprung. It is provided with a telescopic luggage carrier at the rear which can be shut away when out of use. The bracket attached to the down tube of the sidecar is of somewhat novel design, and is fitted with a ball joint which can be locked in any position, thus ensuring perfect alignment and allowing the motor bicycle to pull directly on the sidecar. Usually these brackets take the pull through a right angle tube.



## SPEED TRIALS AT PENRITH.

The Cumberland County Motor Cycling Club held its open speed trials on Bank Holiday at Lowther Park, Penrith, by the kind permission of Lord Lonsdale. The programme, which was excellently managed, consisted of six classes, six of which were open events, the remaining being limited to members of the club.

The course, which was one of half a mile, presented a somewhat difficult turn and steep descent, but, in spite of this and the condition of the road owing to the heavy rains, some excellent times were made. The fastest time of the day, irrespective of weight, was made by H. Mason, Newcastle-on-Tyne, on a 5-6 h.p. Matchless, in 27 $\frac{1}{2}$ s., with a flying start. The medal for this was given by Mr. W. B. Cole, the captain of the club. Mason, riding a 2 $\frac{3}{4}$  h.p. J.T., also secured for the fastest time (33 $\frac{1}{2}$ s.) in the lightweight class the medal given by Mr. W. Harrison, of the Graphic Garage, Penrith.

**Lightweights, singles and twin:** 1, H. Mason (2 $\frac{3}{4}$  N.U.T.); 2, W. Phillpott (2 Humber); 3, R. N. Corah (2 $\frac{3}{4}$  Corah). **Fouring singles on formula:** 1, E. Cooke (3 $\frac{1}{2}$  A.S.L.); 2, Burras (3 $\frac{1}{2}$  Zenith); 3, J. S. Whitelock (3 $\frac{1}{2}$  Rudge).

**Racing singles:** 1, R. Bowness (3 $\frac{1}{2}$  Matchless, 29 $\frac{1}{2}$ s.); 2, — (3 $\frac{1}{2}$  Corah), 31 $\frac{1}{2}$ s.; 3, S. Crawley (3 $\frac{1}{2}$  Triumph), 32 $\frac{1}{2}$ s. **Twin-cylinders on formula:** 1, H. Mason (5 Matchless); 2, A. J. Moffat (6 Zenith); 3, B. Jeffreys (6 Bat).

**Amateurs on time (any machine):** 1, R. Bowness (3 $\frac{1}{2}$  Matchless), 30s.; 2, B. Jeffreys (6 Bat), 30 $\frac{1}{2}$ s.; 3, A. J. Moffat (6 Zenith), 30 $\frac{3}{4}$ s.

**Sidecar:** 1, S. W. Braithwaite (3 $\frac{1}{2}$  Rudge); 2, E. Burras (6 Zenith).

**Members' lightweight:** 1, H. Mason (2 $\frac{3}{4}$  N.U.T.); 2, H. W. (2 $\frac{3}{4}$  N.U.T.); 3, J. W. Whitelock (2 $\frac{3}{4}$  N.S.U.).

Members, any capacity, single or twin: 1, S. Crawley (3 $\frac{1}{2}$  Triumph); 2, H. Mason (6 Matchless); 3, R. Bowness (3 $\frac{1}{2}$  Matchless).



The first ascent of Bwlch-y-Groes by a cyclecar. The machine is an 8 h.p. Morgan, and the climb was made by Mr. Rey T. Aston, hon. joint sec. of the North Stafford M.C.C., on the 20th ult. The same machine went up Mow Cop (Staffs.) on the 28th ult.

## Judges' Report of the Scottish Six Days' Trial.

THE judges are particularly pleased with the manner in which the competing machines have fulfilled the conditions of the Trial, and the large number who have gained full marks in what is admittedly the severest test ever yet organised.

The number of retirements is phenomenal, no less than thirty-one having retired for various reasons. Many were due solely to the lack of reasonable care on the part of the competitors.

### Excellent Hill Climbing.

The judges are of opinion that had the sections been shorter fewer competitors would have gained full marks, as a great majority of riders had trouble of a more or less serious nature during at least one section.

The hill-climbing performances of the majority of machines were excellent, and the greatest improvement is perhaps noticeable in the manner in which many machines were able to climb for two miles at a stretch on a low gear without showing symptoms of overheating.

Although a few of the single-gear machines did remarkably well in their performances, the excellence of the respective performances was more on the part of the individual than on the part of the machine, and they cannot recommend anybody to contemplate touring in Scotland in any portion over which the route extended to attempt motor cycling on a single-geared machine.

### Variable Gears Do Well.

The variable gears performed well, and few cases of trouble were reported, and such as came to their knowledge were caused chiefly by falls.

The judges were particularly disappointed at the poor results given by the supposed waterproof magnetos, scarcely one of which was really rainproof in the correct sense of the word, and during the wet weather caused a great deal of difficulty to the competitors, especially in starting. They are of opinion that this could be improved without difficulty. Belts showed up comparatively well in the wet weather, and the majority of competitors did not experience much difficulty in this respect. Chains also stood the test well.

The judges were particularly pleased with the performances made by the cyclecars—two in number—which performed most excellently on all the hills and generally giving good performances. The friction drive fitted to the

two cyclecars seemed very satisfactory, and gave no trouble throughout the whole test. As regards the sidecars, the judges cannot give quite such a favourable report, as the majority of the sidecars were in a broken-down condition at the completion of the test. All the sidecars which got through did good performances, in so far as many of the roads were very much more severe for sidecars than they were for solo machines.

### Too many Broken Fittings.

The judges were disappointed at the manner in which sundry fittings failed to withstand the test, broken mudguards, carriers, and the like being too numerous, while the same applies to the more minor fittings. Several cases of broken frames are reported, and the judges do not think this satisfactory, nor do they think that the forks fitted to many of the machines were of a sufficiently sturdy nature to be fit for the work required of them, and the twisted forks, admittedly caused by the careless riding of many of the competitors, were too frequent.

The judges were pleased to notice the good condition of the wheel rims, which stood the test of the rough roads particularly well.

### Lack of Power at End of 1,000 Miles.

The judges have to notice that the hill-climbing powers of the competing machines were not so good at the conclusion of the test as they had been during earlier periods of the trial, and they are of opinion that there should be no material loss of power after a journey of 1,000 miles, which constitutes about a quarter of an average year's run. This loss of power is mainly attributable to an excess of lubrication, which is, or ought to be, unnecessary.

The judges are quite satisfied with the manner in which tyres stood the test, several of the competitors going through the whole journey without a puncture. They, however, would point out that the users of one particular make found great difficulty in negotiating corners even where the roads were dry, there being too great a tendency towards dry skidding.

In conclusion, the judges are fairly pleased with the condition of the machines at the finish, and much of the damage noticeable was due solely to the lack of care on the part of the riders, and not to fault on the part of the machine, and it speaks well for the general improvement that so many of the machines finished in good condition.





### Army Manœuvres.

THE details of the conditions under which members of the Legion of Cyclists will be employed during the culminating week of the Army manœuvres have just come to hand, and the terms offered by the military authorities are sufficiently liberal to cover more than any reasonable expense to which motor cyclists might be subjected. Any motor cyclist who wishes to take part, therefore, in Army manœuvres should at once register himself as a member of the Legion of Cyclists and send in his application to the honorary secretary to attend manœuvres. The conditions laid down by the War Office are as follows:

1. Free railway pass for man and machine from home to Cambridge (and return).
2. Eight shillings a day petrol allowance to cover wear and tear of motor cycle, oil consumption, and insurance. (This allowance will not be payable for days spent in train journeys when the man and machine are not available for military duty.)
3. Free messing and lodging in camp, or when this is impracticable (as is usually the case) eight shillings a day to cover hotel expenses.

The forty motor cyclists supplied by the Legion of Cyclists will be utilised with defending force together with twenty men supplied by the A.C.U., and those who are desirous of taking part should apply at once, as there are very few vacancies left. The period during which the men's services will be required is from September 14th to 20th, both days inclusive.

### A Unique Opportunity.

Never before in the history of British peace manœuvres have so many troops been called out as will be the case next September, for in addition to the 70,000 regulars there will be 10,000 cyclists, of whom 3,000 will be drawn from the various cyclist battalions and will include a considerable number of motor cyclists. It is probable, therefore, that the number of motor cyclists employed will be greatly in excess of those called out on any previous occasion, and a rough estimate places their number as follows:

Furnished by the A.C.U. ... ..	20
Furnished by the A.A. and M.U. ... ..	60
Furnished by the Legion of Cyclists ... ..	40
Furnished by Territorial Cyclist Battalions ... ..	70
Furnished by Regular Army ... ..	20
Furnished by Officers' Training Corps ... ..	15
Furnished by Special Reserve, etc., and R.E. ... ..	30
<b>Total ... ..</b>	<b>255</b>

In addition to those who will be allotted to specific duties there are sure to be a goodly number of attached officers and men who will turn out on motor cycles, and thus bring the number up to close upon the three hundred mark.

### A Few Hints.

I would like to impress a few suggestions upon those who are selected to take part in manœuvres, and who have not had any previous experience. First of all, as to expenses, which is usually a most important consideration. The allowances provided by Government amount to sixteen shillings a day, and the average distance that men will be called upon to travel will hardly exceed fifty miles a day, so that it will be seen there is a fair margin left for living-expenses. On the other hand, it must be remembered that when 80,000 men are suddenly imported into a country district supplies are apt to run short and accommodation is liable to be well-nigh unobtainable. The umpires, the directors, the foreign attachés, and the press invade the hotels and fill them to overflowing. Generals and regimental commanders fill up farmhouses and country inns, whilst staff clerks and other orderlies eagerly grab any emergency accommodation that happens to be left. Personally, I should advise every motor cyclist to render himself independent of hospitality by providing himself with a blanket and a waterproof sheet or cape, then if the worst comes to the worst he can doss down in the first tent or shed that is handy.

Secondly, the motorist should disabuse his mind of any previous notions he may possess as to the necessity of four meals a day at given hours, because he will probably have to content himself with snacks at one meal a day (and lucky if he finds place, time, or opportunity to get that!). Instead of going to an overcrowded hotel and paying three shillings for an inferior breakfast he will do far better to throw himself on the indulgence of a farmstead.

Then as regards the machine, make it as weather-proof as you possibly can. It may, of course, be fine and dry, but it is wiser to be prepared for the worst. A good lamp is essential, as many journeys have to be run at night when troops and unlit waggons may be encountered on the road. Good non-skid tyres should also be fitted, since in wet weather the traffic of an army cuts up roads to an appalling condition of slush, especially on the steeper portions of gradients.

### Addenda.

Since writing the above I have heard that the full complement of men required for the period September 14th-20th has been filled up, but that there are no vacancies for twenty-two men for the period September 8th to 20th. A P.O. for 1s. should be sent with each application to defray postages and probable telegram

### LOST AND FOUND.

We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.



# BANK HOLIDAY RACING AT BROOKLANDS.

THE changeable weather doubtless had some effect on the attendance at Brooklands on Monday, but despite the blustering wind and an occasional shower, there was a very fair number of people. The meeting began at noon instead of 2 p.m., and there was a good number of events, which were well supported, with several exciting incidents to keep up the general interest. The first motor cycle event was the Eleventh Short Motor Cycle Handicap. Prizes, £10 or cup at option, £5 or cup, £3 or cup. Distance, 5½ miles. Fork start, long finishing line.

The machines passed the fork once and then entered the straight. Of the competing machines several were worthy of comment. Pickin's Rudge had an air inlet in the induction pipe. T. W. Wartnaby put the mechanism lubricated W.D. on the track for the first time, and F. H. Arnott, "Humming Bird" fame, rode a machine which showed no signs of special attention outwardly, but in the interior doubtless concealed secrets which its owner would not give away to the world. Unfortunately, Arnott lost his belt, and did not finish. Townsend, the rider of a Zenith, had a smash near the tunnel. He was riding on a badly-worn front fork. This burst, and he fell on his head and slid down the banking. Paul, the hon. medical officer, was quickly on the scene, and eventually the poor victim was conveyed to the hospital on the aviation ground. His head was badly cut, he was suffering from concussion, and his hands were severely damaged, but fortunately no bones were broken. At the start Elce (Rudge) was slow at getting away, and Mills had considerable difficulty in getting his machine to fire. Elcebold in starting made a bad move, and nearly collided with the rider next to him. The first lap order was: Square, Smith, Croucher, Bailey, S. R. Cooke, Elce, Timson, Newbold, "Pontin," Remington, Fowler, Stanley, Townend, Garrett, Spencer, Wartnaby, Huckle, Elce, Whitehead, and Pickin. It was a good race, thanks to the skilful handicapping of Mr. Ebbelwhite, Elce winning by a few lengths, and Newbold and Stanley (scratch) second and third, finishing almost neck and neck. Result:

	Bore and stroke.	c.c.	m. s.
W. H. Elce (1 Rudge) ...	85x88	499	0 46
P. Newbold (2 Zenith) ...	76x85	771	0 32
G. E. Stanley (1 Singer) ...	85x88	499	0 28*
R. Croucher (1 Kerry-Abingdon) ...	85x88	499	1 10
S. L. Bailey (2 Douglas) ...	61x60	351	0 58
J. A. Manners-Smith (1 Triumph) ...	85x88	499	1 10
S. D. Timson (1 Rudge) ...	85x88	499	0 58
S. R. Cooke (1 Rudge) ...	85x88	499	1 18
S. F. Garrett (1 Green-Precision) ...	85x88	499	0 46
B. C. Remington (1 Rudge) ...	85x88	499	0 58
W. G. Fowler (1 Rudge) ...	85x88	499	1 10
H. H. Huckle (2 Zenith) ...	76x54.5	494	0 46
"A. E. Pontin" (1 Rudge) ...	85x88	499	1 18
W. T. W. Wartnaby (1 W.D.) ...	85x88	499	0 46
H. H. Square (1 Robin-Minerva) ...	69x69	258	3 0
J. Gibbs (2 Humber) ...	60x60	340	1 34
C. Whitehead (1 Triumph) ...	85x88	499	0 58

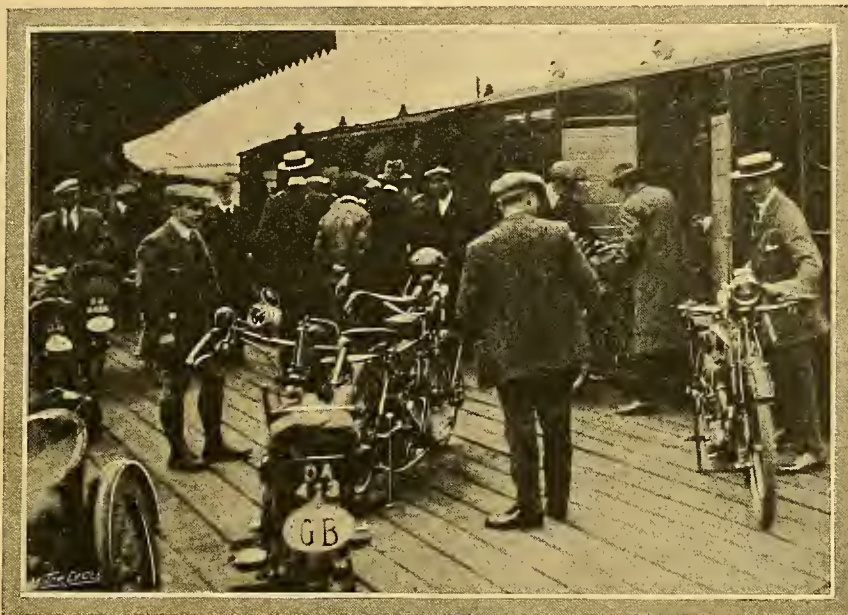
\*Scratch.

The winner's speed was 62½ miles per hour.

## Ninth Long Distance Handicap.

The next motor cycle event was the Ninth Long Distance Handicap. Prizes as in the previous race. Fork start. Long finishing line. In the event before the motor cycle races the well-known Triumph rider at Brooklands, M. Campbell, while racing his Darracq, burst a tyre, hit the edge of the track, and smashed both off side fenders. At the start Garrett, as facetiously garrulous as ever, made the wait before the word to "go" pass quickly.

As Slatter, on the baby Alcyon, 3m. 27s. start, got away in good form, and Garrett asked Mr. Ebbelwhite if he might have a small machine and secure a big start, Remington left the line on one cylinder, and Croucher retired during the first lap. The first lap order was: Slatter, Cooke, "Pontin," Arnott, Croucher, Gibbs, Stanley, Dewar, Garrett, Hannis Mills, Huckle, Elce, Yano, Wartnaby, and Remington. On the second lap the order was as follows: Slatter, Arnott, Garrett, Stanley, Dewar, Cooke, Mills, Elce, Huckle, Yano, and Wartnaby.



The English-Dutch Trial. Unloading machines at Harwich Station.

## A Double Victory.

At the finish Arnott showed what his machine was worth, and much to the surprise of the handicapper he romped in an easy winner, and brought home the second Rudge that day to victory at a speed of 60½ m.p.h. Result:

	Bore and stroke.	c.c.	m. s.
(1.) F. H. Arnott (1 Rudge) ...	85x88	499	1 27
(2.) S. F. Garrett (1 Green-Precision) ...	85x88	499	1 9
(3.) G. E. Stanley (1 Singer) ...	69x80	294	1 27
H. C. Mills (1 Green-Precision) ...	85x88	499	1 9
W. Dewar (1 Triumph) ...	85x88	499	1 27
N. D. Slatter (1 Alcyon) ...	62x82	247	3 27
H. H. Huckle (2 Zenith) ...	76x54.5	494	1 9
W. H. Elce (1 Rudge) ...	85x88	499	1 9
S. R. Cooke (1 Rudge) ...	85x88	499	1 57
J. Gibbs (2 Humber) ...	60x60	340	2 21
W. T. W. Wartnaby (1 W.D.) ...	85x88	499	1 9
S. L. Bailey (2 Douglas) ...	61x60	351	1 27

Bailey's Douglas came in on one cylinder as he broke an exhaust valve. Arnott's win qualified him to run in the Winners' Handicap with 53s. start in company with the following competitors: K. Yano (25.8 Bedford), 49s.; C. H. Bird (15.9 Sunbeam), 10s.; McL. N. Staigh (15.9 S.C.A.R.), 36s.; L. Coatalen (30.1 Sunbeam), scr.; Turner-Smith (13.9 Stoewer); and G. W. Hands (12 Calthorne). Arnott led easily and would have won but, instead of coming down the straight as he should have done, he completed a lap and thus lost the cup value £12 10s.

Jake de Rosier, who writes from the Crocker Street Hospital, Los Angeles (Cal.), wishes to thank Messrs. W. Macneill and T. A. Carter for their donations recently forwarded through *The Motor Cycle*. De Rosier says that the broken bones only began to knit about three weeks ago, but it certainly braces a man up to know he is not forgotten by his English friends. He is still on his back, and is likely to remain so for some considerable time.





### Sheffield and Hallamshire M.C.C.

The officials of the Sheffield and Hallamshire M.C.C. report an error in the results of the open hill-climb held on July 27th. The error was in Class IV., T.T. singles up to 560 c.c., and the results should have read as follows: 1, Dan Bradbury (3½ Norton), figure of merit 87.4; 2, K. Clarke (3½ Corah), 98.4; 3, E. L. Moxey (3½ B.S.A.), 99.0.

### Exeter and District M.C.C.

Sixteen riders started on the second twenty-four hours' reliability trial held by the club on the evening of the 26th ult. for the Gould Cup. Results (subject to confirmation):

1, S. J. Sanders (3½ Rudge Multi), 21m. 29s. error; 2, J. Milner (3½ Rudge Multi), 47m. 28s. error; 3, A. C. Arden (3½ T.T. Premier), 56m, 3s. error.

### Westmorland M.C.C.

The hill-climb held last week at High Cross Moor, Lancaster, resulted as follows:

Lightweights.—1, S. H. Phillpott (Humber).

Single-cylinders.—1, G. H. Braithwaite (Zenith); 2, L. Pierce (Corah); 3, J. Dean (Singer).

Twin-cylinders.—1, A. I. Moffat (Zenith); 2, B. Jefferys (Bat); 3, I. H. Nelson (Scott).

Sidecars: 1, B. A. Jervis (6 Zenith); 2, H. H. Satterthwaite (8 Matchless).

Fastest time of day.—B. A. Jervis (6 Zenith).

### Dewsbury M.C.

The club held their second hill-climb of the season on Tuesday, the 30th ult., on the knock-out principle. Results: Class I. (open to all members): 1, S. Dawson (T.T. B.S.A.); 2, F. Ward (Zenith-Gradua); 3, C. Sydney (Bradbury).

Class II. (open to members not having previously won a prize in similar event): 1, S. Dawson (T.T. B.S.A.); 2, H. Hainsworth (Triumph); 3, G. H. Hirst (James).

The members' reliability trial for the Fenton Cup will take place on the 13th inst. There will be two classes, solo and passenger.

### Durham and District M.C.C.

A speed trial was held on the 24th ult. over a quarter-mile stretch of good road, and some good times were made. In the single-cylinder class the result was as follows:

Rider and machine.	Time in secs.	Speed m.p.h.
1. C. W. Smith (3½ Smith-Precision)	12½	73.77
2. E. Turvey, jun. (3½ B.S.A.)	12¾	71.42
3. R. B. Smith (3½ Ariel)	13¾	66.17

F. C. Wake (6 h.p. twin Zenith) covered the course in 11½s., this being equivalent to a speed of 76.27 m.p.h., but, as there were only two entries in the twin class, this class was cancelled.

An all-night reliability trial was held on the 27th-28th ult., commencing at 8.30 p.m. The route was Durham, York, Scarborough, Whitby, Saltburn, Stockton, to Durham, a total distance of 185 miles. Seven competitors started, in fair weather, but soon encountered much rain and thunder, therefore the stop of two hours and a half near York for refreshments proved very acceptable. Only three competitors succeeded in completing the course, and the result was as follows: 1, C. F. Christon (3½ Triumph); 2, R. B. Smith (3½ Ariel); 3, G. Philburn (3 Fafnir).

A hill-climb was held on the 31st ult. at 6.30 p.m. The hill chosen was perfectly straight and the surface very good, some fast times being the result. Results:

Single-cylinders.—1, E. Turvey (3½ B.S.A.), 30s., gold medal; 2, C. Smith (3½ Smith-Precision), 31s., silver medal; 3, J. P. Forster (3½ Rudge), 34s., bronze medal.

Twin Class.—1, F. Wake (6 Zenith), 26½s., gold medal.

Sidecar Class.—R. Maughan (8 Matchless), 48½s., silver medal.

### Herts County A. and Ae.C.

The members' hill-climb will take place on the 10th inst. There will be classes for machines up to 350 c.c., 500 c.c., 750 c.c., unlimited capacity, and passenger machines up to 1,100 c.c. The Motor Cycle formula  $\frac{C \times T^2}{W}$  will be used in the handicap classes; which will be open only to amateurs riding their own machines.

### Mid-Staffordshire A.C.

An inter-club hill-climbing competition was held at St. Cop, Rugeley, on the 27th ult. Some excellent sport witnessed, the hill being a fast one. Results:

1, G. W. Huntbach (3½ h.p. Premier), winner of medal Harley Jones challenge cup; 2, S. C. Witcomb (8 h.p. Matchless); 3, — Russell (3½ h.p. Russell). Fastest time, J. Prendergast (3½ h.p. Ivy-Precision).

The members of the following clubs were competing: Derby and North Staffs., Leicester, North Staffs. M.C.C., Mid-Staffs. A.C.

Both cup and fastest time were obtained by the North Staffs. M.C.C.

### Dublin and District M.C.C.

This trial to Glengariffe and back took place on the 27th and 6th inst. The following arrived at Glengariffe on the 27th: H. T. Carroll (3½ Rex), G. Roche (3½ Rover), T. E. Gre (3½ Rudge), McAreyve (3½ Rex), R. Walshe (3½ Calthor), F. J. Walker (3½ Rudge), V. J. Farrell (3½ Triumph), Doleman (3½ Rudge), J. Browne (3½ Rudge), F. Jules (Premier), J. Webster (3½ Hobart), T. Woods (3½ Ariel), T. D. Rollins (3½ Rover), B. J. Gogarty (3½ Triumph), W. G. Greene (2½ A.J.S.) arrived late. Dunphy retired Cahir with magneto trouble. P. H. Hurse (3½ Rudge) lided with a cow at Maryboro' and damaged his machine. Woods had a collision with a dog near Cahir and sustained injuries, but reached here. Browne (3½ Rudge) shed the spokes from his back wheel. J. D. Weirs (6 Ent sc.) was last seen stopped after coming through the flood near Maryboro'. Several riders had trouble here for same cause. J. Healy (3½ Rudge sc.) had belt trouble was late at Mallow; later he burst his back tyre at R. more and transferred his passenger to McAreyve's car and drove on the rim to Killarney. H. A. Conneff last seen with a puncture.

### Crossgates and District M.C.C.

Speed trials were held in Templenewsam Park on the 27th ult., by the kind permission of the Hon. E. L. Wood. The course was about three furlongs, and some excellent sport witnessed. The best times registered were:

#### SOLO CLASS.

Rider and machine.	Time.
*H. E. Haswell (3½ h.p. Bradbury)	25s.
*A. Kirk (3½ h.p. Premier)	25s.
F. Crosthwaite (8 h.p. Matchless)	25½s.
H. Whitfield (3½ h.p. Triumph)	25½s.
T. Wilkinson (6 h.p. Matchless)	25½s.
G. Botterill (3½ h.p. Triumph)	25½s.

#### SIDECAR CLASS.

Vernon Crosthwaite (8 h.p. Dot)	29s.
F. Crosthwaite (8 h.p. Matchless)	32s.
H. E. Haswell (3½ h.p. Bradbury)	32s.
H. Whitfield (3½ h.p. Triumph)	34½s.
J. Stuart-White (3½ h.p. Bradbury)	37½s.
A. Longbottom (4 h.p. Singer)	39s.

\*Tied for fastest time of the day.

The handicap was formulated on a trial run. Results Solo Class.—1, W. Bramley (3½ Triumph); 2, J. Stuart-White (3½ Bradbury).

Sidecar Class.—1, A. Longbottom; 2, V. Crosthwaite H. Whitfield.





Competitors in the Wolverhampton M.C.C. contest for the Corke cup.

### Wolverhampton M.C.C.

The reliability trial for the Corke Cup was run off on the 28th ult. The route was *via* Bewdley, Ludlow, Knighton, Church Stretton, Shrewsbury, and Wellington, 140 miles in all.

### North Birmingham A.C.

The first hill-climb held by this club took place at Throak on the 27th ult. Results: Solo class: 1, F. W. Southern (Premier); 2, O. Curpley (Ith); 3, N. Fairley (Ivy-Precision). Decars: 1, J. D. Watson (B.S.A.); 2, G. Maxfield (pedo); 3, G. Blood (Kynoch). Hon. sec., Mr. W. Russell, 1, Oakfield Road, Erdington.

### North Staffordshire M.C.C.

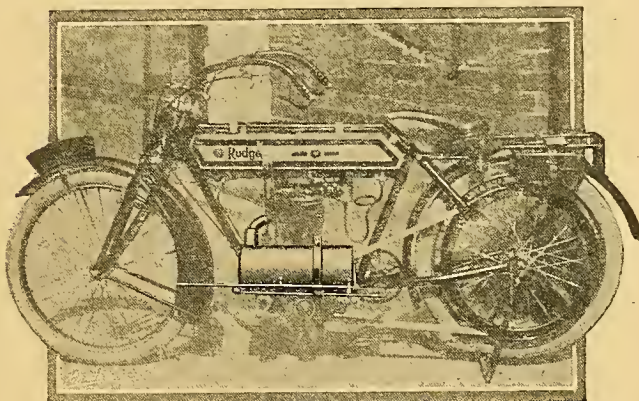
The annual reliability trial for the president's trophy took place on the 23th ult. The start was from Whitmore, and the course, which was secret till the morning of the trial, took the competitors through North Wales, and was about 100 miles, *via* Shrewsbury, Knighton, Newtown, Llanfair, Penin, Dolgelly, Llangollen, and back to Whitmore. Results: 1, G. Tagg (Regal-Precision), error 35m., trophy and gold medal; 2, J. Attwood (Bradbury), 40m., gold medal; 3, G. Zenith, 50m., silver medal.

### Cumberland County M.C.C.

The result of the Bessentbwaite to Harrogate and back (100 miles) reliability trial for the Piel Wyke Challenge Cup and club medals is as under: 1 (cup and gold medal), H. Robinson (3½ T.T. B.S.A.), no marks lost; 2, E. A. Hale (3½ Scott) and Beck (3½ T.T. Triumph), five marks (equal). This is the second year in succession H. Robinson has won the cup, which now becomes his own property. The other could not have been worse, fully half the distance was run in a perfect downpour. The result of the speed judging, which took place from the Merdale Boat House was: Whitelock (Rudge) and Little (Rudge) tied for first place, both arriving dead on time, Hilton Robinson (B.S.A.) being third, 1m. fast.

### Fleet and District M.C.C.

A reliability trial was held on the 27th ult. for the Kinder Cup. Results: 1, J. Haszard; 2, C. Q. Roberts; 3, G. Meredith. Six competitors made non-stop runs.



### A.C.U. SILENCER TESTS.

The Experimental Silencer Contracted. (See page 871).

### Bristol M.C.C.

The long-distance trial (400 miles) to Llandudno and back took place on the 26th and 27th ult. Out of an entry of fourteen, only seven faced the starter. The results were gold medals to the following six: H. Hutchinson and F. P. Davis on Ridges, and Eli Clark, F. C. Wasley, P. Phillips, and E. Kickham on Douglasses. J. B. Kellar (B.S.A.) had the misfortune to blow out inlet valve cap, and was forced to retire twenty-seven miles from the finish.

Five members of the B.M.C.C. are riding in the Six Days' Trials, Messrs. Fry, Grout, and Wasley forming the private owners' club team, all on Douglas machines.



Exeter and District M.C.C. 24 Hours Reliability Trial. A group of competitors at Staines in the early morning before the start of the return journey.



# A.C.U. SIX DAYS' TRIALS.

## Official Maps, Contours, and Itinerary of Daily Routes

### FIRST DAY (Monday, August 12th), 171½ miles.

	Place.	Inter.	Total.
8.0 a.m.	Taunton ... ..	—	—
	Honiton ... ..	17	17
	Clyst Honiton ... ..	12½	29½
	Alphington ... ..	7¾	37
10.31 a.m.	Teignmouth ... ..	13	50
	(2 miles at 15 m.p.h.)		
	Torquay ... ..	7¾	57¾
	(5 m. at 15 m.p.h.)		
	Paignton ... ..	2¾	60¾
11.26½ a.m.	Totnes ... ..	6	66½
12.39 p.m.	Plymouth ... ..	23½	90
	(2 m. at 15 m.p.h.)		
	Lunch at Royal Hotel.		
2.9 p.m.	Plymouth (depart)	—	—
2.54 p.m.	Tavistock ... ..	15	105
	Two Bridges ... ..	8½	113½
	(5 m. at 15 m.p.h.)		
4.1½ p.m.	Moreton Hampstead ... ..	12½	125½
4.41¾ p.m.	Exeter ... ..	13½	139½
	Cullompton ... ..	13	152½
	Wellington ... ..	12½	164½
6.18½ p.m.	Taunton ... ..	7	171½



### SECOND DAY (Tuesday, August 13th), 160¼ miles.

8.0 a.m.	Taunton ... ..	8	8
	Milverton ... ..	3	11
	Wiveliscombe ... ..	9¾	20¾
9.2¼ a.m.	Bampton ... ..	17¼	38¼
9.55½ a.m.	South Molton ... ..	12	50½
10.31½ a.m.	Barnstaple ... ..	6¼	56¾
	Bittadon ... ..	5¼	62
11.6 a.m.	Ilfracombe ... ..	15½	77½
11.54 a.m.	Barbrook Mill ... ..	4¼	81¾
12.19½ p.m.	Lynmouth ... ..	—	—
	Lunch at Lyn Valley Hotel.		
	(Slow hill-climb)		
2.0 p.m.	Countisbury (top) ... ..	2	83¾
	(3 m. at 15 m.p.h.)		
2.33 p.m.	Porlock ... ..	10	93¾
	Williton ... ..	13½	107½
4.6 p.m.	Bridgwater ... ..	17½	124¾
	Street ... ..	12¾	137½
5.0¾ p.m.	Somerton ... ..	5½	143
	Langport ... ..	4¼	147½
5.52½ p.m.	Taunton ... ..	13	160¼

### THIRD DAY (Wednesday, August 14th), 196½ miles.

8.0 a.m.	Taunton ... ..	5	5
	Bishops Lydeard ... ..	11	16
8.48 a.m.	Bridgwater ... ..	17½	33½
9.40½ a.m.	Axbridge ... ..	2½	36
	Cheddar ... ..	7½	43½
10.10½ a.m.	Wellsway Inn ... ..	43½ m. non-stop.	—



10.48 a.m.	Dundry ... ..	7½
	Bristol ... ..	4½
	(3 m. at 15 m.p.h.)	
11.55½ a.m.	Falfield ... ..	15½
	Wotton-under-Edge ... ..	6½
	Edge ... ..	14
12.55½ p.m.	Gloucester ... ..	6
	Lunch at Bell Hotel.	



**U. Six Days' Trials.—**

**Third Day (continued).**

5½ p.m.	Gloucester (depart)	—	—
	(2 m. at 15 m.p.h.)		
	Birdlip Hill (top) ...	7	104½
7¾ p.m.	Cirencester ...	9¾	114½
1¼ p.m.	Malmesbury ...	11¼	125½
9¾ p.m.	Chippenham ...	9¼	134½
8½ p.m.	Bath ...	12¾	147½
	Wells ...	21	168½
1 p.m.	Glastonbury ...	6	174½
5½ p.m.	Taunton ...	22	196½

**FOURTH DAY (Thursday, August 15th), secret route.**

**FIFTH DAY (Thursday, August 16th), 150½ miles.**

		Mileage.	
Time	Place	Inter.	Total.
6 a.m.	Taunton ...	—	—
	Coombe St. Nicholas ...	10½	10½
9 a.m.	Chard ...	2½	13
	Crewkerne ...	8	21
	(Slow hill-climb)		
5 a.m.	Winyards Gap (top) ...	5	26
5 a.m.	Dorchester ...	16	42
5½ a.m.	Weymouth ...	7½	49½
3½ a.m.	Wareham ...	18	67½
½ p.m.	Bournemouth ...	14	81½
	(5 m. at 15 m.p.h.)		

Lunch at Central Hotel.

½ p.m.	Bournemouth (depart)	—	—
	(4 m. at 15 m.p.h.)		
½ p.m.	Blandford ...	17¾	99¼
½ p.m.	Sherborne ...	20½	119½
	Yeovil ...	5½	125
½ p.m.	Ilminster ...	13½	138½
½ p.m.	Taunton ...	12	150½

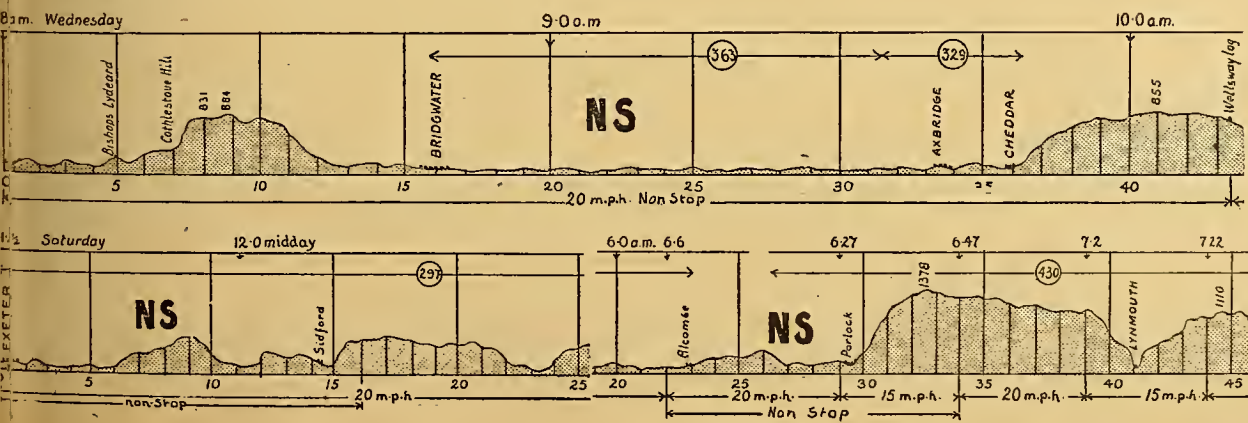
**SIXTH DAY (Saturday, August 17th), 167 miles.**

½ a.m.	Taunton ...	—	—
½ a.m.	Dunster ... non-stop	22	22
	Porlock ...	7	29
	(5 m. at 15 m.p.h.)		
½ a.m.	Lynmouth ...	12	41
	(5 m. at 15 m.p.h.)		
½ a.m.	Blackmoor Gate ...	7	48
½ a.m.	South Molton ...	13¾	61¾
½ a.m.	Tiverton ...	18¾	80¾
½ a.m.	Exeter ...	15	95½

Lunch at New London Hotel.

½ a.m.	Exeter (depart)	17 m.	—
½ p.m.	Sidford Hill (top) ...	non-stop	17
½ p.m.	Lyme Regis ...	12	124½
	(2 m. at 15 m.p.h.)		
½ p.m.	Bridgport ...	8	132½
	Beaminster ...	6	138½

1.58½ p.m.	Crewkerne ...	7	145½
2.22½ p.m.	Chard ...	8	153½
	Castle Neroche ...	6¼	159¾
3.3 p.m.	Taunton ...	7¼	167





**LIST OF ENTRIES FOR THE SIX DAYS' TRIALS.**

**MOTOR BICYCLES.**

No.	Rider, machine, and gear.	Bore and stroke.
1.	C. T. Newsome (3½ Rover, S. Archer gear)	85 x 85
2.	D. H. Noble (3½ Rover, Armstrong)	85 x 88
3.	A. J. Sproston (3½ Rover, S. Archer)	85 x 88
*4.	W. Cooper (3½ Bradbury, S. Archer)	89 x 89
*5.	Philip Grout (4¼ Quadrant, Armstrong)	87 x 95
*6.	F. C. Wasley (2¾ Douglas, Douglas (2))	60 x 60
7.	G. B. Fry (3½ Bradbury, Bradbury)	89 x 89
8.	C. L. Scott (3½ Rudge, Rudge Multi)	85 x 88
9.	G. T. Gray (3½ Rudge, Rudge Multi)	85 x 88
10.	W. D. South (3½ Rudge, Rudge Multi)	85 x 88
*11.	A. Raymond Penny (2½ A.J.S., A.J.S.)	70 x 82
12.	W. Pratt (3½ P. and M., P. and M.)	82 x 88
13.	P. Shaw (3½ P. and M., P. and M.)	82 x 88
14.	W. C. Drake (3½ P. and M., P. and M.)	82 x 88
*15.	W. J. M. Sproule (3½ P. and M., P. and M.)	82.5 x 88.9
16.	J. F. Sirett (7 Indian, Indian) (2)	82.5 x 93
17.	B. Alan Hill (7 Indian, Indian) (2)	82.5 x 93
18.	A. H. Alexander (7 Indian, Indian) (2)	82.5 x 93
19.	H. Greaves (2¾ Enfield, Enfield) (2)	54 x 75
20.	J. S. Holroyd (2¾ Motosacoche, Motosacoche) (2)	54 x 75
*21.	Mrs. M. Hardee (3½ P. and M., P. and M.)	82 x 88
*22.	G. D. Hardee (3½ Triumph, S. Archer)	85 x 88
*23.	R. C. Owen Wells (3½ Bradbury, S. Archer)	89 x 89
24.	W. F. Newsome (3½ Triumph, Triumph)	85 x 88
25.	S. Crawley (3½ Triumph, S. Archer)	85 x 88
26.	H. Lister Cooper (3½ Triumph, S. Archer)	85 x 88
27.	P. Moffatt (2¾ Douglas, Douglas) (2)	60 x 60
28.	G. L. Fletcher (2¾ Douglas, Douglas) (2)	60 x 60
29.	W. B. Gibb (2¾ Douglas, Douglas) (2)	60 x 60
*30.	W. Houghton (3½ Bradbury, S. Archer)	89 x 89
31.	L. Newey (3½ Ariel, Armstrong)	86.4 x 85
32.	F. C. North (3½ Ariel, Armstrong)	86.4 x 85
33.	F. C. Sangster (3½ Ariel, Armstrong)	86.4 x 85
34.	T. Pollock (3½ James, James)	86 x 96
35.	A. D. Arter (3½ James, James)	86 x 96
*36.	S. Brown (3½ James, James)	86 x 96
37.	Frank Philipp (3¾ Scott, Scott) (2)	73 x 63.5
*38.	Jesse Baker (3¾ Scott, Scott) (2)	73 x 63.5
*39.	J. Norman Longfield (3¾ Scott, Scott) (2)	73 x 63.5
*40.	F. Dover (3½ Premier, Armstrong)	85 x 88
*41.	S. Sawyer (3½ Premier, S. Archer)	35 x 88
*42.	E. D. Dickson (7 Indian, Indian) (2)	82.5 x 93
*43.	E. P. Dickson (6 Zenith, Gradua) (2)	76 x 85
44.	W. E. Cook (3½ A.S.L., N.S.U.)	85 x 88
45.	A. T. Stanton (3½ Bradbury, Bradbury)	89 x 89
46.	P. Platt (3½ Bradbury, S. Archer)	89 x 89
47.	L. A. Bees (3½ L.M.C., S. Archer)	85 x 88
48.	S. K. Jones (3½ L.M.C., S. Archer)	85 x 88
49.	L. M. Soresby (3½ L.M.C., L.M.C.)	85 x 88
50.	J. Clarke (3½ Rolfe, Rolfe)	65 x 85
51.	B. Haddock (2½ A.J.S., A.J.S.)	70 x 82
52.	W. W. Heaton (2½ A.J.S., A.J.S.)	70 x 82
*53.	J. D. Corke (5 A.J.S., A.J.S.) (2)	85 x 85
54.	J. Johnson (4 Kynoch, S. Archer)	89 x 89
*55.	H. E. Haswell (3½ Bradbury, S. Archer)	86.5 x 85
*56.	F. J. Watson (3½ Swift, S. Archer)	86.5 x 85
*57.	J. Peachey (3½ Swift, S. Archer)	86.5 x 85
*58.	P. D. Walker (3½ Rudge, Rudge)	85 x 88
59.	R. Holloway (3½ Premier)	85 x 88
60.	J. Oliphant (3½ Premier, S. Archer)	85 x 88
61.	J. Haslam (6 Zenith, Gradua) (2)	76 x 85
62.	P. Weatherill (3½ Zenith, Gradua)	85.5 x 85
63.	G. Griffith (6 Zenith, Gradua) (2)	85.5 x 85
*64.	J. H. Kerr (3½ N.S.U., N.S.U.)	85 x 88
*65.	A. R. Abbott (3½ Bradbury, N.S.U.)	89 x 89
*66.	A. E. Catt (3½ Triumph, S. Archer)	85 x 88
*67.	D. Hardman (3½ Rudge, Rudge)	85 x 88
*68.	W. Land Dibb (6 Rex, Rex) (2)	77.5 x 95
*69.	Dr. Moss-Blundell (6 Corah, P. and M.) (2)	76 x 85
*70.	J. Farnsworth (3½ Campion, G.H.)	85 x 85
71.	W. Creyton (2¾ Humber) (2)	60 x 60
72.	A. G. Fenn (3½ Humber)	84 x 90
73.	F. C. Edmond (3½ Humber)	84 x 90
*74.	A. P. Morris (6 Zenith, Gradua) (2)	85 x 75
*75.	H. J. Beal (3 N.S.U., N.S.U.) (2)	58 x 75
76.	V. Wilberforce (2¾ Douglas, Douglas) (2)	60 x 60
*77.	G. W. Ruscoe (2¾ Forward, Armstrong) (2)	56 x 70
*78.	J. M. Oakey (6 Matchless, V.S.) (2)	76 x 85

79.	G. Castagnoli (3½ L.M.C., S. Archer)	85
*80.	H. A. Cooper (3½ Bradbury, Bradbury)	89
81.	E. T. Babbington (5-6 Bat, Armstrong) (2)	76
82.	S. T. Tessier (7-8 Bat, Bat) (2)	85.1
*83.	W. B. Little (3½ Premier, S. Archer)	85.1
84.	George Brough (Brough)	...
85.	L. Cass (3½ Quadrant, Armstrong)	87
86.	Rex Mundy (3½ Quadrant, Armstrong)	85
87.	H. Berwick (3½ New Hudson, Armstrong)	85
88.	H. Dixon (3½ New Hudson, Armstrong)	85
89.	J. Slaughter (3½ New Hudson, Armstrong)	85
90.	J. Cocker (2½ Singer, Singer)	69
*91.	W. E. Phillips (3½ Triumph, single-gear)	85
92.	R. Poole (3½ O.K., O.K.)	85
*93.	E. V. Pratt (3½ O.K., S. Archer)	85
*94.	S. C. Hubbard (3½ Bradbury)	89
*95.	Colin Macbeth (3½ Rudge)	85
*96.	F. G. Boddington (3½ P. and M.)	82
*97.	W. G. McMinnies (3½ Triumph)	85
98.	F. Begley (3 Hazlewood, Armstrong) (2)	60
*99.	H. Mills (3½ Green-Precision, S. Archer)	85
*100.	G. Hunt (3½ Campion, G.H.)	85
101.	— (5 Swan, Swan) (2)	67
102.	G. H. Donnelly (4 Swan, Swan)	85
103.	F. H. Thornton (5 Swan, Swan) (2)	67

**PASSENGER MACHINES.**

*J. R. Haswell (3½ Triumph sc., Triumph gear)	85
H. V. Colver (6 Enfield sc., Enfield)	76
J. T. Wood (8 G.W.K. cyclecar, G.W.K.)	86
G. W. Keiller (8 G.W.K. cyclecar, G.W.K.)	86
R. Creak Davis (8 Chater-Lea sc., Chater-Lea)	85
Hugh Gibson (3½ Bradbury sc., Sturmey-Archer)	89
*H. Mellor Jameson (6 Enfield sc., Enfield)	76
Frank Smith (5-6 Clyno sc., Clyno)	76
*G. V. Moss (8 Autotrix cyclecar, Chater-Lea)	85
*C. P. Finn (6 Enfield sc., Enfield)	76
H. F. S. Morgan (8 Morgan cyclecar, Morgan)	85
F. Hill (6 A.C. cyclecar, A.C.)	95
J. Munday (6 A.C. cyclecar, A.C.)	95
A. H. R. Purchase (6 Rolfe sc., Rolfe)	75
A. J. Stevens (5 A.J.S. sc., A.J.S.)	74
— (8 Duo cyclecar, Duo)	85
C. R. Collier (7 Matchless sc., V.S.)	85
*R. E. Guest (7 Matchless sc., V.S.)	85
*J. Tassell (7 Matchless sc., V.S.)	85
*G. Nott (7 Matchless sc., V.S.)	85
*V. Garland (5-6 Clyno sc., Clyno)	76
G. Wray (4½ Wray sc., Wray)	89

\* Private owners.



Mrs. Hardee, of Greenwich, has had a neat looking and effective mud dress guard fitted to her 3½ h.p. P. & M. Its design will be gathered in the above illustrations. Mrs. Hardee and her husband have entered for A.C.U. Six Days' Trials, August 12th to 17th.





Best Hill-climber  
ever made.  
Perfect for sidecar  
work.

## EVER VICTORIOUS.

### A few Recent Successes: SCOTTISH SIX DAYS' TRIALS.

G. Griffith, 6 h.p. ZENITH, lost no marks and secured highest award—**GOLD MEDAL.**

Only **ONE** Zenith entered for the Trials.

### GALA DAY AT BROOKLANDS.

#### Inter Club Team Race.

Two of the three machines in the winning Team were **ZENITHS**. There were also one **ZENITH** in the second team and two **ZENITHS** in the third team.

### CAERPHILLY OPEN HILL CLIMB.

Class I. **ZENITH FIRST** on time. Class II. **ZENITH SECOND** on time.  
Class VI. **ZENITH SECOND** on formula. Class VII. **ZENITH SECOND**  
on time. Class VIII. **ZENITH FIRST** on formula. Class VIII.  
**ZENITH SECOND** on formula. Class VIII. **ZENITH THIRD** on formula.

WRITE FOR CATALOGUE.

## Zenith Motors, Ltd., Weybridge

Spares stocked in London by **ROBERTSON'S**, 157, Gt. PORTLAND STREET. Contractors to the War Office.

For  
Business  
or  
Pleasure

Ride  
the  
**L. M. C.**

District Office, A.M.P. Society,  
TAMWORTH, N.S.W., AUSTRALIA, June 24th, 1912.

Dear Sirs,

Last August I purchased a 3½ h.p. **L.M.C. Cob** model for experimental purposes. As an agent of the above Society I worked my large district by train, bicycle, buggy and pair. Your local agent here, R. W. Webster, urged me to get one, absolutely assuring me that I would double my earnings, for we are purely on commission. This I have succeeded in doing during my first six months, and at present I am earning nearly as much in a week as I made in a month by train and buggy.

The comfort one has in doing a long country run on our bush roads is remarkable. Its all very fine to read about trial runs on a prepared track, but when you see my machine which averages 250 a week over wheat fields, sheep runs through paddocks (fields), and the roughest of bush roads, it really seems impossible.

My tyre troubles are my chief worry, simply because the surface of many of the roads is rough and rocky. I have completed just on 4,000 miles up to date.

On a trip from Barraba to Tamworth, our local express does the journey in 6½ hours. The distance is 56 miles. Last Thursday I left Barraba just as the train had gone at 4-15 p.m.; and I was having my tea here at five past six. The express got in at twenty past ten o'clock. (Mixed train).

Would you please send me your latest catalogue. I intend selling my old machine at Christmas, and getting the latest 3½ Cob model again.

If you desire it I will forward you a photo of myself and my machine.

Wishing the L.M.C. continued success and I personally see it is always in evidence here.

Yours faithfully, R. W. FERRELL.

Makers: **THE LLOYD MOTOR ENGINEERING CO., LTD.,**  
**L.M.C. Works, Monument Road, BIRMINGHAM.**

In answering these advertisements it is desirable to mention "The Motor Cycle."



# "LYSO" Reliability

—The New "LYSO" Belt has proved beyond doubt its thorough Reliability in the hardest and most severe tests. Read these remarkable records recently achieved by machines fitted with the New "LYSO" Belt.

## The Scottish Six Days' Trial

—In this event—which is the most severe and arduous test that the machine could be put to—the following riders:—Vernon Taylor on a Rudge; W. D. South on a Rudge; H. Berwick on a New Hudson; J. Donaldson on a New Hudson; G. Griffiths on a Zenith, and G. L. Fletcher on a Douglas

## all used "LYSO" BELT

## —and all secured GOLD MEDAL

—R. Lord on a Rex and Miss Muriel Hind on a Rex obtained SILVER MEDALS, and E. Tolfree Bat obtained BRONZE MEDAL.

—These and all others who used the New "LYSO" experienced no belt trouble whatever.

**Sheffield and Hallamshire M.C.C. Open Hill Climb, July 27th, 1912.**—A. B. Wade on a Zenith secured FIRST place in the T.T. Class and also FIRST place in the Standard Class.

**Irish End-to-End Reliability Run.**—C. Kirk on a  $3\frac{1}{2}$  h.p. Triumph secured GOLD MEDAL. E. Ware on a  $2\frac{3}{4}$  h.p. Douglas obtained special prize for best lightweight performance.

### Read what Riders say of the "LYSO" Belt.

"I return you the New 'LYSO' Belt that I used on my Singer with Sidecar on the worst roads in England, 3,600 miles in all kinds of weather. Your Belts are doing me splendid service."—HARRY LONG.

"Your Belt gave absolute satisfaction in the Irish End-to-End Run. I only shortened Belt once in 700 miles. I find this Belt has marvellous gripping qualities when slack."—CYRIL KIRK.

"The Behaviour of the New 'LYSO' Belt in the T.T. Races was highly satisfactory, the same Belt used without adjustment through both races and still is in perfect condition."—E. KICKHAM.

"The New 'LYSO' Belt I used in the T.T. Races gave no trouble whatever. I used the same Belt in the Sidecar Race at Brooklands on July 6th when I obtained first place, and also in the B.A.R.C. Meeting at Brooklands July 13th when I again got first place. I must say for the hard work I gave it the Belt behaved abnormally well."—E. B. WARE.

—Fit YOUR mount NOW with the New "LYSO" Belt—the "Perfect Power-transmitter."

Of all Agents, etc. Prices: Size  $\frac{3}{8}$  in. 1/5;  $\frac{7}{8}$  in. 1/9;  $1\frac{1}{8}$  in. 2/1; 1 in. 2/4; and  $1\frac{3}{4}$  in. 2/9 per foot.

**LYCETT'S, "The Saddlery," Bromley Street, Birmingham**





### Slow Hill-climbing in the A.C.U. Six Days.

In the A.C.U. Six Days competitors are going to be penalised unless they can climb certain test hills "on their top gears at a speed not exceeding 12 m.p.h." What is a "top gear"? I have a three-speed hub in conjunction with an adjustable engine pulley, and if I choose I can adjust the engine pulley down to give a direct drive of  $6\frac{1}{2}$  to 1; this would be my middle gear, and with this setting my top gear would be  $4\frac{1}{2}$ , scarcely low enough for a freak hill like Countisbury, but I should be a fool to drive through the trial with so small an engine pulley—it would be asking for belt troubles. Will competitors be allowed to adjust their pulleys to any gear they like near the start of a slow climb, or will they be compelled to use their ordinary running ratios?

On the other hand, if I used a three-speed hub of different make, the top gear would be the direct drive, and in ordinary running would be, say,  $4\frac{1}{2}$  to 1, thus giving a second gear of about  $6\frac{1}{2}$ , and a bottom gear of 9—the ordinary trial ratios for men using this particular hub; but for a top gear slow climb of Countisbury, the users of this hub could drop their pulleys to  $6\frac{1}{2}$  if permitted, thus reducing their two lower ratios to about 9 and 13 to 1, which is absurd.

To my mind there is a mystery surrounding these slow hill-climbs, and surely the only sensible way to deal with them is to apportion a gear limit for each test hill for each type of engine. I suspect the idea is to make the men do the climb non-stop on their ordinary running ratios, in which case users of certain machines will be caught napping with gears almost as high as  $3\frac{1}{2}$  to 1 (geared up top ratios), which is absurd.

Why not say plainly that a  $3\frac{1}{2}$  h.p. machine must not be geared lower than, say, 5 to 1 for these tests, or a  $2\frac{3}{4}$  h.p. lower than 6 to 1? At present the unfortunate entrants do not know where they are.

### Gashed Covers.

In the past I have very frequently engaged in long and messy processes whenever I gashed a cover clean through, my repairs taking the line of solutioning patches and canvas to the cover itself. Recent experience has taught me a more excellent way. A lasting repair is an expert job, and best entrusted to the makers; what we desire is a sound temporary expedient which may enable us to conclude our trip or tour. The best plan is to use one of the light gaiters, designed to slip between tube and cover, and possessing thin flaps of rubbered canvas which are clipped in the clinch by the beads; thick flaps make the tyre very awkward to replace, and may even cause it to blow off afterwards; strap-on gaiters are impossible with rim brakes, and may shift the spokes. Having one of these light-flapped gaiters, a good plan is to take a piece of canvas or roll of wide tape and wind it spirally around the partially deflated tube, so that two thicknesses of material embrace the tube. The diameter of the cylinder must roughly approxi-

mate to the diameter of the inflated tube, though of course it has to be rolled round the tube when the latter is deflated. Care must be taken in tucking such a loose roll inside the cover, for any turned-over edges may chafe and cause fresh trouble. A liberal amount of French chalk should be dusted over the lot. A repair of this kind has lasted over 100 miles on my back tyre. I am sure it is a mistake to use any other type of gaiters, or to repair covers on the road, when these simple methods occupy no more time than a simple tube patch takes to affix.

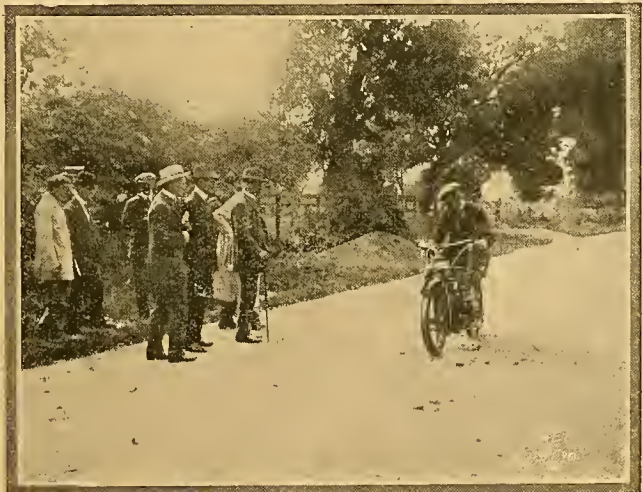
### Exhaust Valve Lifters.

Such refinements as the exact method of raising the exhaust valve for starting or coasting purposes reveal the size of a designer's brain cavity, and in this connection I should like to pay a special tribute to the Rudge, which has as effortless a valve lifter as I ever tweaked on a hairpin bend.

I saw a well-known rider preparing his machine for a big trial the other day, and reminded him of some 1911 wrestlings when he broke his valve lifter wire on the first day of a week's trial. He smiled astutely, and conducting me to the offside of his jigger, proudly indicated a small pedal, rod and hook, not exceeding 5 ozs. in weight, which enabled him to foot-operate his valve lifter in the event of a broken wire.

It struck me that this fitting would not be unwelcome on the average machine. It is delightful for long coasts, useful in emergencies, and leaves both hands free for awkward blind corners. My own machine, for instance, has a throttle which does not shut dead tight, and it possesses neither air lever nor switch. If my valve lifter wire broke unexpectedly, I might find myself in a pretty pickle.

Trying to kick off the high tension wire while steering through a flock of sheep would be most exciting.



A.C.U. SILENCER TESTS.

The judges observing the effect of the telescopic silencer fitted to a Rudge.



# THE Douglas

VIBRATIONLESS      LIGHTWEIGHT

Referring to the  
Test Hill - Climb  
at Brooklands,  
"The Motor Cycle"  
(July 25th) said:

"Bailey's  
ascent  
was  
marvellous."



S. L. Bailey (Douglas), winner  
of the All Comers' Handicap  
at Brooklands on July 20th.

## The Winning Machine.

*Another Remarkable List of Successes.*

### OPEN HILL CLIMB at CAERPHILLY, JULY 18th.

Class II.—T.T. Machines, 350 c.c.

J. W. Parsons, **DOUGLAS**.....**FIRST** on time.

### BROOKLANDS FIFTH MONTHLY MEETING, JULY 20th.

#### ALL-COMERS' HANDICAP.

S. L. Bailey, **DOUGLAS** .....**WINNER.**

Bailey led in each of the five laps.

#### TEST HILL CLIMB.

S. L. Bailey, **DOUGLAS** ....**WINNER** in Class B.

S. L. Bailey also secured **SECOND PLACE** in the five lap Junior T.T. Race, and **SECOND** in Class B in the Time Trials, his speed for the Flying Kilometre being 63'91 m.p.h., and for the Flying Mile 63'83 m.p.h.

### SCOTTISH SIX DAYS' TRIALS.

J. F. Morrison, **DOUGLAS**.....**GOLD MEDAL.**

### SPEED TRIALS on PORTHCAWL SANDS, JULY 20th.

Class I.—E. Kickham, **DOUGLAS**....**FIRST.**

### A REMINDER.

In the Irish End-to-End Trials on July 13th the Douglas secured **TWO GOLD MEDALS** and **ONE SILVER MEDAL**, also the **SPECIAL LIGHTWEIGHT PRIZE**. In the recent London to Edinburgh run, the Douglas secured **5 GOLD MEDALS** for the double journey, and **FIRST PLACE IN ORDER OF MERIT FOR LIGHTWEIGHTS.**

MAY WE SEND YOU FULL DETAILS OF OUR MODELS?

**DOUGLAS BROS.,** Kingswood, BRISTOL

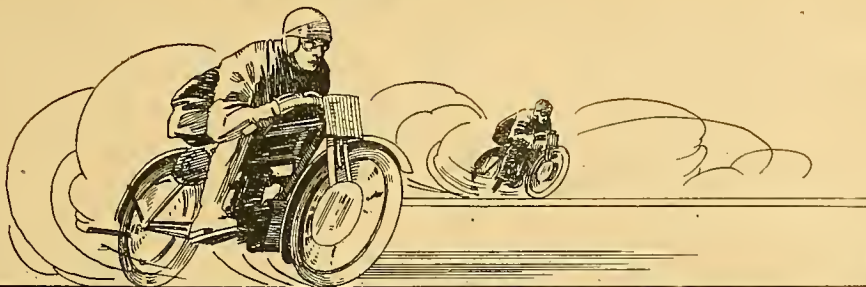
Telephone—No. 51.

Telegrams—"Douglas, Kingswood."

London—336, Goswell Road, E.C.



# QUESTIONS & REPLIES



589

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Timing a Twin Minerva.

Will you kindly let me know as clearly as possible how to time my  $4\frac{1}{2}$  twin Minerva m.o.i.v. motor cycle 45° engine, as it is a great trouble to alter, having internal timing wheels. Starting from the front cylinder I take it that the inlet valve should open as the piston is at the top of cylinder. Then I do not know exactly how to go on with the back cylinder.—W.J.C.B.

The method of timing a twin is the same for a single. The inlet valve should open and the exhaust valve close almost at the same moment, viz., when the piston has descended a very little way on the compression stroke. Time the back cylinder this way, then turn the engine  $1\frac{1}{2}$  revolutions and time the front cylinder in the same way. The exhaust valves should open when the pistons have descended six-sevenths of the firing stroke. A piece of cigarette paper placed between the valve stem and tappet will show the opening and closing of the valves very accurately.

## Motor Cycle Regulations in Jersey.

What are the laws and regulations with regard to motor cycles in Jersey, Channel Islands? As a permanent resident, what tax would I have to pay?—W.H.H.

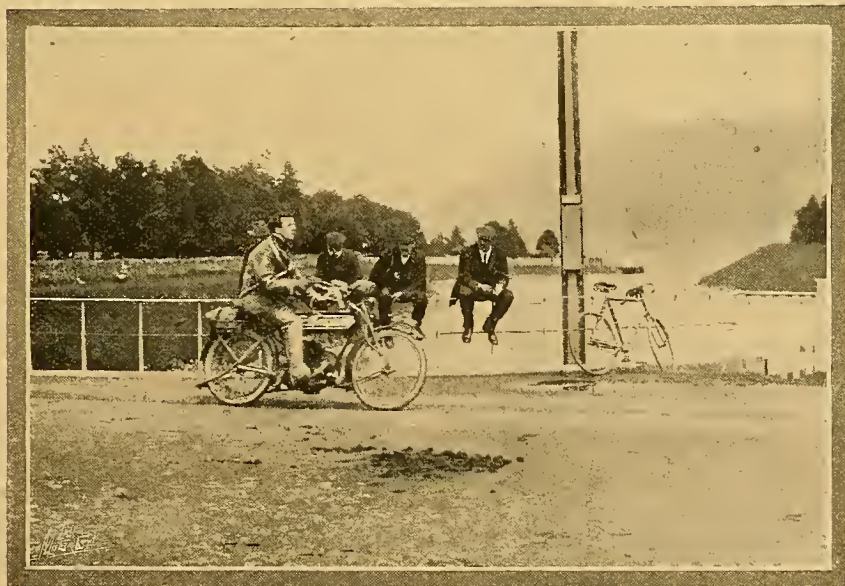
Special regulations apply to motor vehicles in the island of Jersey, but motorists who drive to the danger of the police are proceeded against. We take from that that no number plates are required, and that you can drive a motor cycle without licence, registration, or driving licence. In Guernsey you must give written notice annually concerning the number of motor cycles which belong to you to the Chief of Police under a penalty not exceeding £10, and you will receive annually from the police a licence. The police indicate the numbers to be carried, which have to be painted on the back of a car on a black plate in white letters, but nothing is said about carrying a front number plate or illuminating it. An annual tax of 2s. 6d. must be paid on any kind of cycle. In the streets of towns where drivers of other vehicles are obliged to proceed at walking pace a speed of four miles per hour is necessary or a penalty not exceeding £1. These are all the particulars we have regarding the Channel Islands, but you could obtain further particulars on application to the police on arrival.

## Sudden Loss of Power.

I shall be glad if you can elucidate for me the following puzzle. My  $3\frac{1}{2}$  F.E. machine (1911) has developed the curious and annoying habit of suddenly pulling up on ordinary gradients after, say, a couple of miles running at about 30 m.p.h. When travelling well at 30 up a hill of about 1 in 12 or 1 in 15, it suddenly slows down and stops as though the brake were on or the throttle closed—no "conking," but a sort of spitting and spluttering in the exhaust box. I can't persuade myself it is overheating, as there is no knocking, and with a  $4\frac{1}{2}$  gear it should run for miles at 30 or over. The symptoms point to starving of petrol, but I have carefully examined petrol pipe and have run off half a gallon direct to prove there is no "air lock." B. and B. carburettor just returned from makers for adjustment, as I suspected that; compression good, and timing of valves carefully checked, no misfiring, and "break" occurs a few mm. before top of compression stroke. The curious

thing is that just as it pulls up, without knocking, putting out the clutch does not keep engine firing, and, as I have said, there appears to be no missing at the plug—though I have tried changing that. When it occurred on a hill recently I turned round straight away, fired to the bottom, and started up straight away from clutch and took the hill easily. I can get 45 on the level for short stretch easily, and there seems plenty of power in the ordinary way, but this sudden stoppage beats me. If you think it is overheating, why is there no sign of knock? I use plenty of Price's Huile de Luxe.—H.R.H.

It is difficult to diagnose the trouble without a personal examination of the machine, but it sounds like exhaust or inlet valve sticking or magneto rocker sticking. Should advise you to examine both. If you find valve at all a tight fit, take it out and rub stem with emery cloth until it is quite free. It probably expands when hot, and that is why the engine will pick up again after descending a hill and cooling down.



SCENE DURING THE SCOTTISH TRIALS.

J. H. Begg ( $3\frac{1}{2}$  h.p. Rudge) crossing the Caledonian Canal.



## Cyclecar Queries.



Could you kindly give me any information as to the cyclecar driven by C. M. Keiller, as to whether it is three-speed, free engine, and what petrol it consumes?—W.L.K.

The cyclecar referred to is the G.W.K. Full particulars of this can be obtained from the makers, Messrs. G.W.K., Ltd., Home Works, Datchet, Bucks. A detailed description and illustrations were published in *The Motor Cycle* of March 7th, page 249. Back numbers can be obtained from our Publishing Offices, 20, Tudor Street, E.C. The machine is friction driven and, therefore, has an infinitely variable gear between two points, the highest and lowest. A free engine is obtained by removing friction drum from friction wheel. As the engine is a twin-cylinder of about 1,000 c.c. the petrol consumption is probably in the neighbourhood of forty miles to the gallon.

## Responsibilities of Dog Owners.



I was motoring through the village of Birstwith, in Yorkshire, when I came across a farmer standing at his gate with his dog. Suddenly the dog jumped at me and followed for about half a mile, barking and running round the machine. On going a little further up the road I found I had taken the wrong turning, and had to return. I found the farmer and his dog still there, and again I had trouble, resulting in my being thrown from my machine, damaging my leg and also my motor cycle, owing to the dog getting in front of the wheel. The farmer never came to my assistance. When I recovered from the shock I went to him and asked why he did not call the dog away, and the answer I got was, "It always runs after motorists, and I can't stop it." I should be obliged if you could inform me whether I shall be able to claim for damage done to myself and cycle.—B.S.

There is no doubt that you have a good case against the farmer, as you are able to prove that the man knew of his dog's failings, which is the important thing



The silver cup presented by the president, Mr. William Allday, to the South Birmingham M.C.C. as a perpetual trophy.

in these cases. We should advise you to put the matter into the hands of a local solicitor if it becomes necessary, but make an attempt to settle out of court in the first place

## Obstruction in Petrol Supply.



My motor cycle runs quite smoothly at low speeds, but when at full or threequarter throttle, it starts misfiring and explosions occur in the silencer. It is also rather hard to get started, even when warm. Should I fit a larger or a smaller jet? I think it is the carburetter that is at fault; the magneto and plugs seem in good order.—E.S.

It is rather hard to say what the particular fault with the carburetter is without fuller information. When on full throttle and explosions occur in the silencer, you do not say what you are doing with the air lever, whether any alteration of the air lever makes any improvement. If closing the air lever causes a sudden acceleration and then afterwards the air lever can be opened it seems to indicate that there is a partial obstruction either in the jet or the vent in the filler cap is stopped up. Obviously, the petrol does not get to the carburetter quickly enough. The fact that the machine is rather hard to start leads one to suppose that there is some obstruction in the carburetter or else, through a union being loose, too much air reaches the engine.

## Gradients and Gears.



(1.) What is the steepest gradient that could be climbed (approximately) by a 2 h.p. machine in good tune on, first, an 8 to 1 gear; second, on a 6 to 1 gear? (2.) What are the most suitable gears for winter and summer for the above machine with a ten and a half stone rider? (3.) What would cause loss of compression in a two-stroke engine? Would such an engine be less liable to loss of compression than a four-stroke side by side valved engine? (4.) What is the gradient of the average main road hill; say the gradient of the steepest hill on the road to Bristol from Gloucester?—M.R.E.

(1.) It depends on weight of rider. Presuming he did not exceed eleven stones, the machine should climb a gradient of 1 in 8 with a gear ratio of 8 to 1. With a gear ratio of 6 to 1, it would probably climb a gradient up to 1 in 12, in both cases without pedal assistance. (2.) Summer gear we should recommend about 5½ to 1; winter 6½ to 1. (3.) Loss of compression in a two-stroke engine would be caused by leakage at the sparking plugs or piston rings, and if the crank case were used for compressing the gas, leakage would be caused by worn crankshaft bearings. The only reason why the two-stroke would be less liable to loss of compression than the four-stroke side by side valve engine would be because there would be no possibility of leakage at the valves. (4.) The average gradient of the steepest hill on the road to Bristol from Gloucester does not exceed 1 in 16. The route referred to is the one missing Thornbury. Of course it is just possible that a stretch on any of the hills might be considerably steeper, but there is nothing steep on this road.

## To Preserve Plated Parts.



Could you advise me on the following details for my new Triumph? (1.) What do you recommend for preserving the plating? I have heard painting celluloid on is good. If so, how is the celluloid liquefied? (2.) Is there anything on the market for painting the engine, but which will not wash off? What do you consider the best engine paint?—H. BLOXAM.

(1.) There are several special preservatives for plated parts of a machine, sold in tins ready for application. Celluloid in the ordinary way is liquefied by mixing in with acetone, but there is no need for you to do this when you can buy a preparation ready mixed. (2.) Radiolin and Ebonine are good preparations.

## EXPERIENCES WANTED.

"W.McL." (Cowdenbeath).—4½ h.p. Mead-Precision.

"C.O." (Ceylon).—Brampton gear.

"C.F.C." (Epsom). G.W.K. cyclecar.

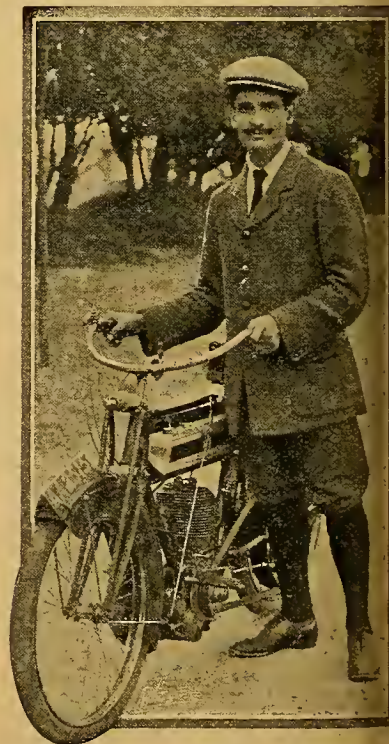
"E.H.G." (Southwark).—2½ h.p. Gamage. Wearing qualities, etc.

"AB 2615 (Kidderminster).—3½ h.p. Scott and sidecar. Reliability, wear, etc.

"A.S." (London).—Bradbury and sidecar with three-speed Sturmey-Archer gear.

"Ideal" (Huddersfield).—G.W.K. cyclecar.

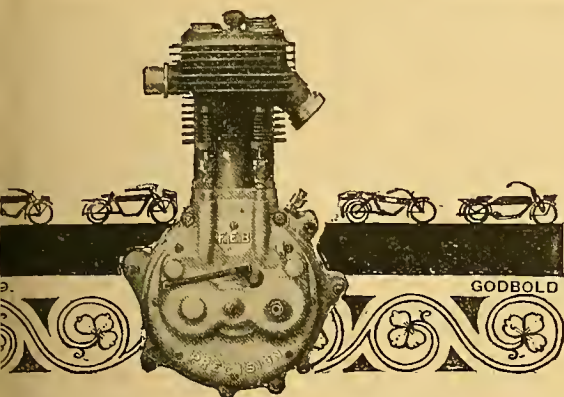
"F.W.W." (Dunmow).—Mabo countershaft gear on 3½ h.p. Triumph



THE KING'S PRIZE WINNER AT BISLEY.

Arthur Fulton, winner of the King's prize at Bisley. The photograph is interesting, as Mr. Fulton is an ardent motor cyclist, and rode to camp each day to compete in the great shooting competition. This should be a sufficiently convincing reply to that section who contend that motor cycling unsteadies the nerves.





Make of the Machine does not matter if the Engine's a

# Precision

"The Same as You Can Buy."

name of the machine means little—all standard engines are good. It is the name of the engine that counts. And if that name is "Precision" you are sure that you have the best engine that experience could build or money buy. Proof of this is given by facts (1) that many prominent manufacturers fit "Precision" Engines as Standard. (2) An ever-increasing number of riders specify "Precision" Engines only. (3) During the last 12 months as many as in open hill-climbing have been won with "Precision" Engines as with any other four makes.

One could wish for stronger proof. You can appreciate that it means everything to you if your engine is a "Precision."

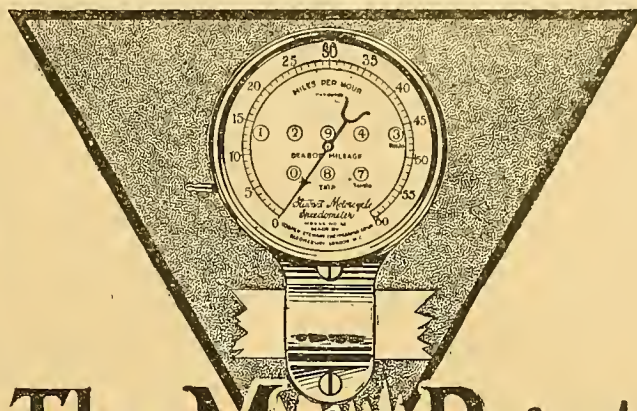
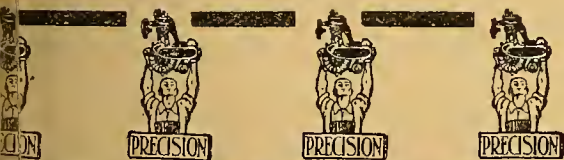
Whatever use you propose putting your machine to, it is a "Precision" Engine which will do that work better than any other make.

Particulars posted upon request.

## E. BAKER, LTD.,

Precision Works, Moorsom Street,  
BIRMINGHAM.

Wholesale Distributing Agents for Australia:  
Messrs. A. G. Healing & Co.,  
354-356, Post Office Place, Melbourne.



# The Main Point

Unchangeable Accuracy

The Stewart Speedometer sole purpose of recording speed and thing connected with end in view—design, finish are all of such a high could not go wrong under

Magnetic is made for the accurately recording mileage. Every the Stewart has this workmanship and finish order that the Stewart any circumstances.

An interesting Booklet will be sent you free upon request. It explains why the centrifugal principle on which the Stewart is designed means slowly-moving parts, no wear, and permanent accuracy. It tells you how the Stewart is compensated for the variable English climatic conditions. It shows why the Stewart records from zero up. It conveys an unexaggerated impression of the beautiful workmanship which is put into even the smallest part of every Stewart Speedometer. Send for it to-day. You will realise that no other speedometer is good enough, or accurate enough, for you.

### MODEL 43

Reading to 60 miles per hour, and with season mileage recorder. Price

**£2-15-0**

### MODEL 42

60 miles speedometer, 10,000 miles odometer, and 100 miles trip recorder. Price

**£3-10-0**

# STEWART

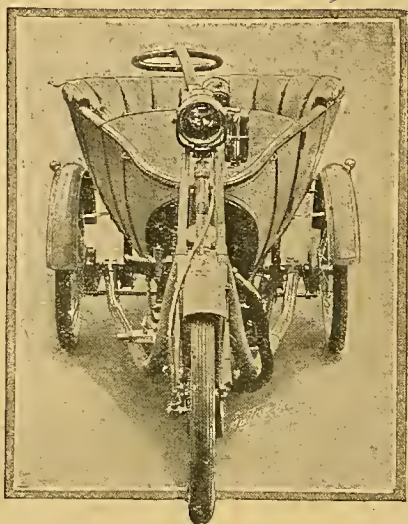
## MAGNETIC

# SPEEDOMETERS

THE COOPER-STEWART ENGINEERING CO., LTD.  
11, Broad Street, Bloomsbury, London, W.C.



# THE WALL TRICARRIAGE



Price with comfortable two-seater body,  
100 Guineas.

Sole Manufacturers & Patentees: **A. W. WALL, Ltd., Roc Motor Works, HAY MILLS, BIRMINGHAM.**

London: Messrs. Robertsons, 157, Gt. Portland Street, W.

Write for Illustrated List.

.... "more handy than a motor car  
more useful than a motor cycle."

Read how users speak of it—

July 12, 1912.

"I find the little vehicle a great advance on the various motor cycles with which I have had experience, and it embodies all the comfort of a fully fledged car. I have already reported to you the result of my journey from Birmingham to Norwich and back, when practically non-stop runs were made except for meals en route. The petrol consumption on the outward journey was  $3\frac{1}{2}$  gallons per about 165 miles running. . . . The control is splendid in traffic, and in emergency the tiller steering is more responsive than the wheel. . . . . You are welcome to refer enquiries to a satisfied user of your very practical machine.

(Signed),

WALTER T. BALDING.

*Trials any day by appointment.*

*Delivery at few days' notice.*

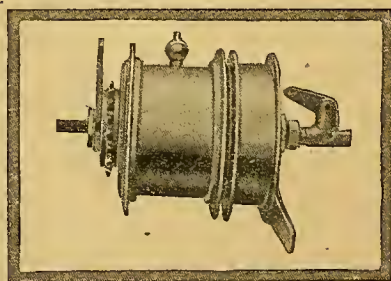
## THE THORNTON 2-SPEED AND FREE ENGINE HUB.

Combining—  
STRENGTH,  
SIMPLICITY,  
AND  
EFFICIENCY.

Price £8.

Particulars from

THE LEICESTER GEAR CO., THORNTON LANE, LEICESTER



### The Guest Decompressor.

THE little article illustrated herewith makes motor cycle starting simplicity itself, and not an athletic feat as heretofore.

EASY TO START THE ENGINE.  
SIMPLE TO FIT.  
SUITS ALL STANDARD MACHINES.  
FITS INTO EXHAUST CAP.  
NOTHING TO GET OUT OF ORDER.

Price 12/6 each.

Postage 4d.

GUEST DECOMPRESSOR CO.,  
107, HIGH ST., WEST BROMWICH.

## 67 Miles per hour on "Sternol"

On Saturday, July 27th, Mr. S. T. Tessier (Bat) riding for Streatham Hill in the Inter-Club Team Race at Brooklands, and, using a standard quality "Sternol" Oil, secured first place with a speed of 67 miles an hour. "Sternol" would serve you just as well. The quality never varies.



Prices and full particulars on request.

**STERNOL,**

56, Royal London House,  
Finsbury Square, London, E.C.

## MARTIN-J.A.P. Motor Cycles.

THE WORLD'S RECORD HOLDERS.  
BROOKLANDS EXISTING RECORDS.

CLASS A. 1 1/2 h.p. MARTIN-J.A.P. 270 c.c.

World's Kilometre—over 66 miles an hour! 1

Mile 64

" 50 Miles Time 55 minutes 24 seconds.

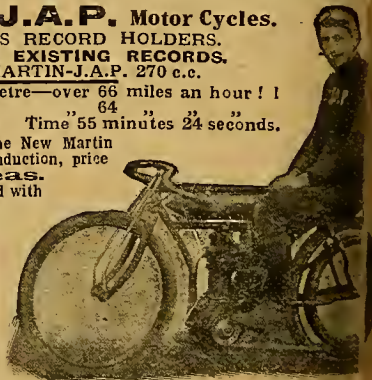
Send for particulars of the New Martin Lightweight with forced induction, price

40 Guineas.  
3 1/2 h.p. efficiency and speed with  
2 1/2 h.p. economy.

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WITH SPECIAL DISCOUNT FOR CASH  
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We are now in a position to give immediate delivery of Clynos (with Sidecars), Scotts, P. & M.'s, Bradburys, Zeniths, Humbers, Matchless, Jap-Bats, Premiers, Rudges, A.C.'s, G.W.K.'s, Morgans, Indians, Douglases, and Rex-Japs, etc., etc.

The above machines are all two-speed gear models. If you have a magneto machine that you are prepared to value at about £15, we are open to consider a swap with you.

Please write us at once! If you have not had one of our Lists of Second-hand Motor Cycles and Accessories, send for one immediately—the bargains going in these will astonish you.

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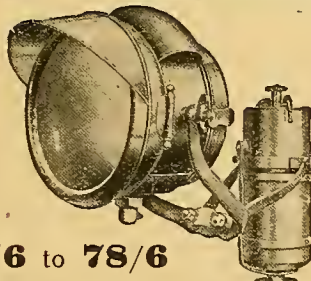
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**47/6 to 78/6**

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# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

ADVERTISEMENTS in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.  
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.  
York and Lancashire.

SECTION III.  
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.  
Nottingham, Lincoln, Leicester, Rutland, Northampton, and Warwick.

SECTION V.  
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.  
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.  
Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants.

SECTION VIII.  
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.  
Somerset, Devon, Dorset, and Cornwall.

SECTION X.  
Scotland.

SECTION XI.  
Ireland and Isle of Man.

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with promptest delivery, and the certainty of most satisfactory service, can always be obtained by a visit to.



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WHERE THERE ARE ALWAYS OVER 300 NEW AND RELIABLE SECOND-HAND MACHINES IN STOCK, AND TO-DAY'S LIST INCLUDES:

5-6 h.p. 1912 2-speed F.E. F.N.	250 0
3 1/2 h.p. 1912 3-speed BRADBURY	250 0
2 1/2 h.p. 1911 ROYAL ENFIELD	227 0
5-6 h.p. 1908 4-cylinder F.N.	220 0
3 1/2 h.p. 1912 F.E. RUDGE	245 0
3 1/2 h.p. 1910 F.E. TRIUMPH	237 10
5 1/2 h.p. 2-speed BAT, 1911	242 10
5 1/2 h.p. 2 1/2 h.p. T.T. J.A.P.-CHATER, 1911	232 10
5 1/2 h.p. T.T. BRADBURY	230 0
5 1/2 h.p. 1910 TRIUMPH	229 0
8 h.p. No. 7 CHATER-LEA, 1912, and superb sidecar	285 0
5 1/2 h.p. 1912 2-speed HUMBER	245 0
5 1/2 h.p. 1912 NEW-HUDSON, 3-sp.	240 0
5 1/2 h.p. 1911 3-speed PREMIER	237 10
5 1/2 h.p. 1912 T.T. TRIUMPH	242 0
5 1/2 h.p. 1912 Free-engine ROVER	245 0
7-9 h.p. 1910 2-speed V.S. and s'car	238 0
5 h.p. 1911 2-speed REX DE LUXE	235 0
8 h.p. 1912 3-speed CHATER-LEA and sidecar	285 0
5 1/2 h.p. 1912 3-speed NEW HUDSON	240 0
5 1/2 h.p. 1912 2-speed HUMBER	245 0
5 1/2 h.p. 1910 2 speed F.N.	225 0
5 1/2 h.p. 1911 Cone Clutch REX	230 0
5 1/2 h.p. 1910 T.T. TRIUMPH	232 10
5 1/2 h.p. 1911 DOUGLAS	228 0
5 1/2 h.p. 1911 Standard TRIUMPH	235 0
5 1/2 h.p. 1911 3-speed PREMIER	237 10
5 1/2 h.p. 1911 A.S.L.	227 10
6 h.p. 1912 Twin REX DE LUXE	248 0
3 h.p. Two-stroke IXION	212 10
5 1/2 h.p. 1908 MINERVA	217 10
5 1/2 h.p. 1912 4-cyl. F.N.	250 0
5 1/2 h.p. 1911 Standard BRADBURY	30 Gns.
5 1/2 h.p. 1912 2-speed BAT	275 0
5 h.p. 1910 INDIAN and sidecar	230 0
5 1/2 h.p. 1911 2-sp. ROYAL ENFIELD	237 10
5 1/2 h.p. REX	27 10
5 1/2 h.p. 1911 KERRY ABINGDON and sidecar	30 Gns.
5 1/2 h.p. 1911 2-speed MATCHLESS	265 0
5 1/2 h.p. 1910 KERRY ABINGDON	232 10
5 1/2 h.p. 1908 2-speed 4 cyl. F.N.	225 0
5 1/2 h.p. 1909 tourist REX	222 10
5 1/2 h.p. 1908 MATCHLESS-J.A.P.	218 0
5 1/2 h.p. 1911 BAT-J.A.P.	233 10
5 1/2 h.p. 1912 3-speed HUMBER	245 0
5 1/2 h.p. HUMBER	215 0
5 1/2 h.p. 1908 twin G.B.	220 0
5 1/2 h.p. 1910 tourist REX	230 0
5 1/2 h.p. 1910 PREMIER, Maboo free engine	224 0
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5 1/2 h.p. 1911 ZENITH GRADUA and sidecar	263 0



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'Phone: 5777 Holborn. Wires: "Opifcer, London."

## ASK FOR TO-DAY'S LIST.

See the BARGAINS for Cash. Send details of your used machine and receive our offer for same in part payment of a new one.

## NUMBERED ADDRESSES

For the convenience of advertisers, letters addressed to numbers at "The Motor Cycle" When this is desired, 2d. will be charged for registration and three stamped and addressed envelopes must be forwarded with the advertisement. Replies should be addressed to the number, then to the number of "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown may deal in perfect safety by availing themselves of the Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of goods is three days, and if a sale is effected we return the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction carries one way. For all transactions exceeding value, a deposit fee of 2s. 6d. is charged, and the fee is 1s. All deposit matters are dealt with by "The Motor Cycle," 20, Tudor Street, E.C.

## SPECIAL NOTE.

Readers who reply to advertisements and answer to their enquiries are requested to refer to the advertisement as an indication that the goods advertised have already been disposed of. Advertisers often receive many enquiries that it is quite impossible to reply to by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

6 h.p. 1911 N.S.U. Twin, 2-speed gear, with 239/10, or without sidecar £34.

3 1/2 h.p. Premier, 1911 model, in grand running order, 2 tyres practically new, new belt; a bargain.

3 1/2 h.p. Premier, 1912, only soiled, not damaged, Lucas lamp and horn; great bargain—Turvey and Co., The Motor House, Sunderland.

NEW 6 h.p. Royal Enfield Twin and Sidecar, for immediate delivery; admitted the finest machine in the trade; £84.

NEW 1912 3 1/2 h.p. B.S.A., T.T. model; £48.

NEW 1912 3 1/2 h.p. Humber, 2-speed; £52/10.

NEW 1912 3 1/2 h.p. Triumph, free engine; £50.

THE Above are offered as being unsold.—The sole agents for Humber, B.S.A., and Royal Enfield motor cycles—Write, wire, or by post, to The Motor House, Sunderland.

1912 Scotts, ready for delivery in 3 days; 3 free tuning.—Walker's, Fishburn, Fern.

1912 Triumph, 2-speed chain drive Bradbury 6 h.p. Enfields for quick delivery.—Walker's, Fishburn, Fern.

NEW Hudson, 3 1/2 h.p., 1912 model, as new; exchange for 1912 2 1/2 h.p. and cash.—Heron, Roman Rd., South Shields.

1912 Scott and Douglas in stock for immediate delivery, also three 2nd-hand 1911 Douglas, Archdale, Bishopston Lane, Stockton. Tel.: 254.

FOR Sale, Indian, 4 h.p., 1910, single-cyl., 1 hand, perfect; any trial; lamp, horn, watch, cyclometer, spare tube, and many spares, 3,000 miles; £30; buying twin.—H. O. Johns, Hutton Av., West Hartlepool.

### SECTION II.

York and Lancashire.

1912 P. and M., 3 1/2 h.p., immediate delivery, by Fred Lee, Pocklington.

DOUGLAS and Williamson motors in stock at Manchester agent, Goulray, Fallowfield.

FREE Engine B.S.A., late 1911, only run 800 miles, or nearest offers.—Wray, Postmaster, E.C.

CHATER-LEA Frame, everything except motor; bargain, £25, offers.—Bell, Wesley R. ningley.

BRAND New F.E. Rudge; cost £55; as complete delivery, will sell £49.—26, Ashton R. eambs.

MERRICK for Bradbury, Chater-Lea, Rudge, Matchless, etc.—Merrick's Stores, Lister Rd., 'Phone: 2439.



# THE MOTOR CYCLE

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York.  
 PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.,  
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 Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 152, Bay Street, Toronto. SOUTH  
 AFRICA: Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

### Proposed Amateur Association.

THE attention of our readers has been drawn this week to an announcement made elsewhere in these pages of a proposition to form an amateur motor cyclist association to be composed only of *bona fide* amateur motor cyclists. We are asked by the promoters to invite criticism through the columns of *The Motor Cycle* on the formation of this association. Our own opinion respecting it is that there would be no necessity for a separate association of this nature if the Auto Cycle Union were fully alive to the very large number of so-called private owners or amateurs who compete weekly in events confined to private owners, but who in reality do not comply with the definition of a private owner laid down by the Auto Cycle Union. This question of amateur and professional is found in almost every sport under the sun. It is a most difficult problem, and the Auto Cycle Union as the governing body of the pastime has our very sincere sympathy in its dilemma. We are rather inclined to think that perhaps the A.C.U. has not been quite so strict as it might have been. Finding out who are trade supported and who are not was a problem which always gave the governing body of pedal cycling the greatest difficulty. History, therefore, is merely repeating itself in connection with motor cycling. We have no desire whatever to see amateurs separated from trade riders in competitions, but we most certainly think that when a competition is open to both there is something mean, underhand, and unsportsmanlike in posing as a private owner, especially when special prizes are offered for amateurs, and at the same time taking subsidies in some form or other from the manu-

facturer of the machine which is ridden, or of the accessories used. It is obvious that the riders do not do this to evade paying trade entry fees. Nor is it usually done to take an amateur's prize under false pretences. It is solely to secure undue credit for the machine ridden by the sham amateur.

### Are Motor Cycles Good Hill-climbers?

THE man in the street who is not yet converted to the pastime would ask this question in all seriousness were he to look over our shoulder as we dealt with the voluminous correspondence received in this office every morning at this time of year, mainly consisting of queries as to the best route from place to place. The extraordinary number of routes we are asked for avoiding the steepest hills is simply astounding. Often we are asked for routes in Wales, the West country, and even the Highlands "avoiding the steepest hills," questions which are just as futile as to ask how long such and such a route would take to cover when the unfortunate Editor is given no idea of the machine's capabilities.

Probably most of these queries emanate from users of under-powered machines, or, worse, single-g geared sidecar combinations. If only these riders could realise what they miss by wishing to avoid steep places they would take care to choose change-speed mounts or fit variable gears to their present machines. The six days' trial now being run off is severe enough, and too much credit cannot be given to those machines which perform well on the hills towards the end of the trial. These are the mounts which should remove this query as to how to avoid steep hills.



## INTERESTING CONVERSIONS.

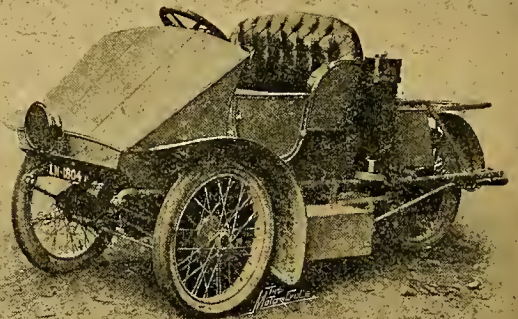
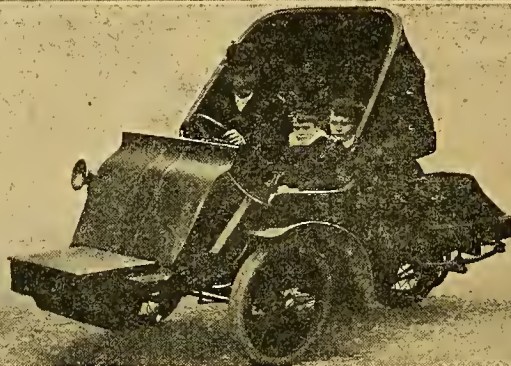
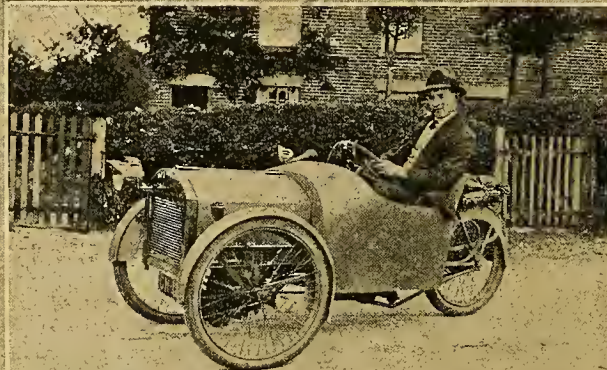
ON this page we illustrate three conversions, which serve to show the need for a light low-priced run-about. At the present time there are very few low-priced machines which have undergone prolonged tests, so that quite a number of our correspondents have been exercising their ingenuity by converting old type quads and tricars to suit their requirements. Some of the resulting machines look smart and some emphatically do not, but in most cases they satisfy the needs of the proud owner-builder.

The reconstruction of ancient machines has many advantages, for many of them were of extremely sound construction, and the parts which have been proved to be satisfac-

cooled Stevens engine, three speeds and reverse gear box, and Chater-Lea frame fittings. These components have been redisposed and a new body fitted, with the result, the owner claims, that the machine is more comfortable, steers better, rolls less, and that the passengers get fewer road shocks owing to the improved position of the seats.

Mr. Yeo's conversion consists of an 8-10 h.p. tandem Rexette converted into a sociable and fitted with a stout hood.

The third illustration shows perhaps the most interesting machine, as it was originally a quad-car, built about 1897. In 1904 it was converted into a three-wheeler with forecarriage, in which state it ran till a year or



1.—An 1897 quad converted by G. Holme of Derby. 2.—An Invicta tricar converted by J. J. Holloway, Newhaven. 3.—A Rexette converted by J. Yeo, Merton.

tory by the test of time may be used for the new vehicle. On the other hand, faults in design will have made themselves obvious, and so can be easily rectified.

The case of Mr. Holloway's conversion is typical. The machine was originally an Invicta tandem tricar, fitted with a 7-8 h.p. twin water-

two ago, when the final alterations were started on. The power plant consists of a  $5\frac{1}{2}$  h.p. thermo-syphon cooled engine (the radiator is home made), fitted with an epicyclic two-speed gear. The body is made of three-ply wood mounted on a steel frame. Mr. Holme, the builder, is an amateur mechanic, and has carried out the work very creditably.

## A TRIAL OF A RUBY.

BY the courtesy of the Royal Ruby Cycle Co., Great Ancoats Street, Manchester, we have been testing a Ruby motor bicycle and sidecar on one or two severe hills in the Midlands. The specification of this three-speed machine includes  $3\frac{1}{2}$  h.p. single-cylinder J.A.P. engine, B. and B. carburetter, Bosch magneto ignition, Chater-Lea frame, Druid spring forks, and Sturmey-Archer three-speed hub gear. The firm, however, will fit Armstrong three-speed, Roc or Villiers two-speed, if required. The gear ratios on the machine we tried were  $4\frac{1}{2}$

to 1 top and 9 to 1 bottom gear, which are quite satisfactory on ordinary undulating roads, but if exceptionally steep hills have to be climbed we should recommend a slightly lower bottom gear ratio, particularly for heavyweight passengers. On ordinary roads the  $4\frac{1}{2}$  top gear renders the machine speedy, and the slow running of the engine is less irritating than exceedingly high engine speeds when used with a top gear of lower ratio, but 5 or  $5\frac{1}{4}$  to 1 top gear is really better for steep hills, as it gives a bottom gear of  $10\frac{1}{2}$  to 1, which makes climbing more certain.



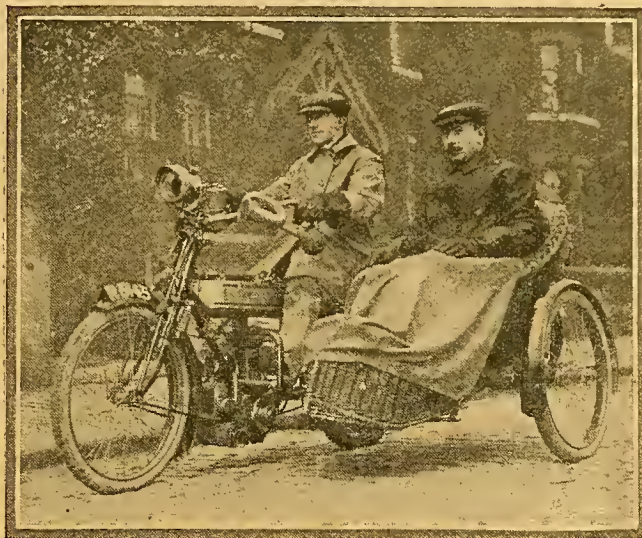
## A Trial of a Ruby.—

Our first test was on Warmington Hill, which lies between Warwick and Banbury. Accelerating to a good speed at the hill foot, the machine went over half way on middle gear, and, with plenty of power in reserve, climbed the 1 in 7 gradient on bottom ratio. Having successfully climbed Warmington, we took the machine to Edge Hill, which is a very formidable climb for a  $3\frac{1}{2}$  h.p. engine with a total weight of  $6\frac{1}{4}$  cwt. This was the weight of the combination and passengers weighed on the Kineton Station weighbridge. The luggage carried included tea basket, two-gallon tin of petrol, and sundry tools and spares, such as rear cover, belt, etc.

The first attempt at Edge Hill proved a little too much for the comparatively high-g geared, heavily loaded combination, but even so weighted it was possible to get within 100 yards of the top. Without the passenger, but with the spares and luggage mentioned, the machine easily climbed as far as the awkward bend on the middle gear, and from there to the top on the low gear the throttle was never more than half-way open, thereby showing that with a slightly lower gear ratio it would have taken the passenger up. The engine power was not at fault. Unfortunately, we could not obtain a lower gear than 9 to 1 with the adjustable pulley fitted, or we should have tried what the machine was capable of with a 10 to 1 gear.

The sidecar is a standard Mills and Fulford with wicker body, and the usual Bowden controls are fitted

for carburetter, front brake, exhaust valve lifter, etc. The accompanying photograph shows Mr. C. Rigby and his brother mounted on the machine which was lent us. The former drives this combination in some of the motor cycle competitions held in the neighbourhood of Manchester.



A 3½ Royal Ruby-Jap and sidecar with its makers Messrs. C. and G. E. Rigby, as driver and passenger.

## Proposed Amateur Motor Cyclists' Association.

A Purely Sporting Body composed only of bona-fide Amateur Motor Cyclists.

**A** FEW weeks ago an announcement was made in *The Motor Cycle* that Mr. C. C. Cooke, late hon. sec. of the Herts County Ae. and A.C. (motor cycle section), with other motor cyclists, was interested in the formation of an amateur motor cycle association. Mr. Cooke now writes us that those interested have had several meetings in London, and at the last meeting the sub-committee appointed to go into the definition of an amateur completed their task. Below we give the constitution of the proposed new body, also the proposed definition of an amateur rider.

This definition is somewhat drastic, but the sub-committee are of the opinion that no half measures will meet the case from their standpoint, but if need be the meeting at a later date can somewhat modify the ruling. It will be noticed that three prominent motor cyclists are connected with the movement, viz., Messrs. A. G. Reynolds (an old A.C.U. committee man), A. P. Harding (another prominent A.C.U. member), and C. C. Cooke.

### CONSTITUTION.

1. Membership shall be open to ladies and gentlemen fulfilling the following definition of an amateur:

- (a.) A member must not be connected directly or indirectly with the manufacture or sale of motor vehicles, or accessories, or parts, used in conjunction with them.
- (b.) Must not be in the employ of any one in connection with the above, or receive any payment in money, goods, or other assistance for riding.

- (c.) Must not receive advantageous terms in the purchase of motor vehicles, their parts, or accessories.
- (d.) Must not be connected with the advertisement of motors or accessories, or a paid member on the permanent staff of any motor journal connected with trade or motoring.
- (e.) Must when competing under the rules of this association undertake to prevent the publication of his or her name, machine, and performance in the advertising columns of the press.

The promoters of the proposed body wish it to be clearly understood that it is in no way intended to compete with any other club or body, it being solely the intention to bring together a body of motor cyclists whose ideas are in agreement with the above, and who will support a national motor cyclists' movement on the lines of this definition for the furtherance of the sport of motor cycling.

A meeting will be held at an early date confined to those who are in sympathy with this object, and who also are willing to subscribe to the provisional objects of the proposed body. The date, place, and time of the meeting will be notified later. In the meantime, written application may be made to attend the first formal meeting, and may be addressed to any of the undersigned:

Mr. A. G. Reynolds, 10, Old Fillebrook Road, Leytonstone;

Mr. E. P. Harding, 56, Great Marlborough Street, London, W.; and

Mr. C. C. Cooke, North Mimms, Hatfield.



# Occasional Comments

By "Izion"



## Red Tape and Big Trials.

In these days of huge entries and tight regulations long-distance trial riding is becoming somewhat of a labour. The main aggravation arises from signing checking sheets; signing is necessary every few miles, and the sheets are often entrusted to a single individual, lacking in good manners and commonsense, who soon loses his temper when he is hustled by an impatient crowd of eager riders. In some trial long ago, of which I have stupidly forgotten the venue, signing was abolished; I was given a bunch of metal discs bearing my number, and I had to leave them at various points along the road.

Here is an idea for Mr. Loughrough to work up. Classification for first, second, and third-class medals complicates things, but the difficulty is not insoluble. As regulations stiffen, trial riding will be eschewed by sport-loving amateurs, unless some of the coils of red-tape are deleted, and the need to dismount every few miles and fight one's way through a surging crowd to an angry man at a small table is one of the chief nuisances at present.

## Speedometer Driving Shafts.

Of late I have been testing a variety of speedometers, and I should particularly like to warn the unwary against certain types which are made with a very light driving shaft and casing. The two or three makes which first catered for our needs were originally provided with very stiff and heavy shafts and casings, and in my ignorance I used to declaim against them, and deride the one-ideal engineer, who, having found a certain strength desirable for cars, employed a shorter length of the same stuff for cycles. But that one-ideal engineer was quite right.

A maker whose wares I have lately tested has gone too far in the other direction. His speedometer arrived minus any steadying straps, and I fitted it as sent. It made a merry jangle-jangle against the front half of my machine. I put on one steadying strap, and it still whisked about like a lambkin's tail. I put on three, and it responded by tearing them all to slivers. I have returned to my first love, with vows of eternal fidelity.

## Small Car or Cyclecar.

I was under the (apparently false) impression that the A.C.U. had defined a "cyclecar" under limitations of price as well as of weight and cylinder capacity. However that may be, cyclecars which sell at well over £120 without accessories are now regularly competing in motor cycle competitions and doing remarkably well. With complete road equipment the vehicles cost up to £150. For this price one can obtain several makes of small car proper, complete with all equipment—to name a sample, a 6 h.p. Rover with hood, screen, and lamps. What are the A.C.U. trying to do?

The £150 cyclecar and the £150 small car are practically identical in specification, except that the cyclecar is distinctly faster. If the A.C.U. is of opinion that the average small car is too slow, too heavy, and too steady, I have not a word to say, though it is scarcely the Union's function to guide development in that sphere. But if—as I imagine—the A.C.U. believes it is possible to create a class of four-wheeled vehicles, which shall be genuine cycles, and be differentiated from cars in price as well as in weight and horse-power, what is the £150 cyclecar doing in its competitions? By the way, some of these cyclecars are a public danger in some competitions, where they are driven rather "blue" to catch up time after minor stoppages. I dare say their brakes are all right, but I have seen them driven fast round blind corners, and they need a good deal of the road.

## Efficient Belt Shields.

I wonder no accessory factor has yet marketed an efficient belt shield at a reasonable price, standardised to fit half a dozen of the most popular makes. The number of all-weather riders is increasing, and for 15s. or so an excellent belt shield should be obtainable, if made in quantities.

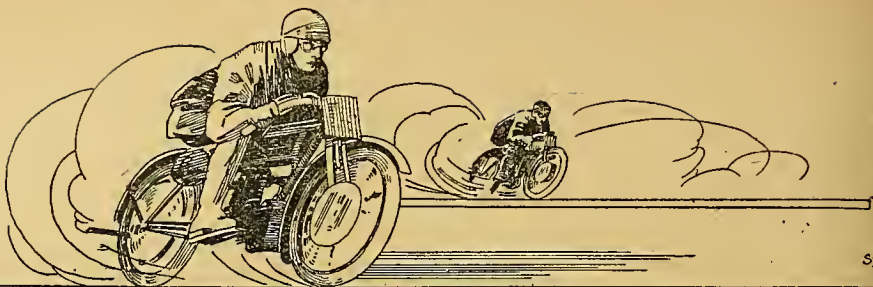
Here is one of the motives which would inspire purchasers who are also owners of three-speed hub-gear machines, on which the intermediate gear is direct. The ratios of the gears vary according to the diameter at which the adjustable pulley is fixed. The series I should prefer would be, let us say,  $4\frac{1}{2}$ , 6, and  $8\frac{1}{2}$  for solo work—I know none better on a 500 c.c. engine; they meet all requirements, including saving belt and tyres on a clutch start, and the ascent of the most precipitous hills. But if the engine pulley be adjusted to these ratios, its diameter is ludicrously small, and the unshielded belt inevitably slips in a shower of rain or when there is the least atom of stretch, while a projecting fastener bolt will burr over the threads of an adjustable pulley reduced to this diameter, and render a punch and hammer necessary whenever the loose flange requires to be moved for a different ratio. *Per contra*, if the engine pulley be kept at a reasonable diameter, say 4in., the series of gear ratios, with the standard 18in. belt drum, is raised to  $3\frac{1}{4}$ ,  $4\frac{1}{2}$ , and  $6\frac{1}{2}$ . In that event the top gear is practically useless, and the bottom gear does not allow for a clutch start on single figure gradient, nor for the ascent of all hills, allowing for gear friction and occasional reductions of engine tune. In other words, without an efficient belt shield a three-speed gear is little else than a two-speed. Now these gears are selling like hot cakes, and almost everybody who buys one will sooner or later wish he had an efficient belt shield. By "efficient" I mean a guard which completely protects the pulley-encircling section of the belt plus the bottom run to the rear drum.







## QUESTIONS & REPLIES



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Adjusting the Needle Valve of Carburetter.

(1.) I am using a Longuemare carburetter on my 24 h.p. cycle and I wish to adjust the needle. Can you inform me how much petrol it should contain before the needle drops and closes the valve? (2.) Does the engine suck up all the petrol out of the carburetter each time, or does it only suck up a certain amount?—W.G.

(1.) You should purchase a copy of "Motor Cycles and How to Manage Them"; in it are given several instructions for adjusting Longuemare carburetter or any other make. In your carburetter the petrol level should rise to the bottom of the conical orifice into which the spraying jet is screwed, that is about an eighth from the top of the cone. (2.) The engine sucks up the amount of petrol required for each charge. If it emptied the float vessel each time the consumption would be extremely heavy, as you could well imagine.

### Birmingham to Inverness.

Will you kindly tell me the best road to Inverness *via* Yorkshire from Birmingham, and the return journey *via* the Lake District? I do not mind hills, but specially wish to miss roads with bad surface and large towns.—C.P.W.

Your best route would be as follows: Birmingham, Sutton Coldfield, Ashby-de-la-Zouch, Loughborough, Nottingham, which you can skirt by turning right for Newark, Tuxford, Retford, Doncaster, Aberford, Ferrybridge, then through Barnard Castle, Middleton-in-Teesdale, Alston, Longtown, Lockerbie, Beattock, Abington Inn, Symington, Lanark, Carluke, Newmains, Cumbernauld Station, Denny, Stirling, Auchterarder, Perth, then through Dunkeld, Pitlochry to Blair Atholl, Dalwhinnie, Kingussie, to Inverness. You will find plenty of bad surfaces in Scotland which will be quite unavoidable. Your return journey, if possible, should be made down Loch Ness as far as Spean Bridge, branch off at Laggan shortly after Loch Laggan, after Dalwhinnie follow the same road by which you came until you reach Gretna Green, and go straight on to Carlisle, after which you branch off for Bothel and back *via* the shores of Lake Bassenthwaite, Thirlmere, and Windermere, joining the main road again at Kendal. Here you should return *via* Ilkley, Settle, Skipton, Otley, Harewood, and *via* the

Great North Road back to Birmingham. This would be better than going back to Birmingham through the West.

### Registration of Motor Tricycle.

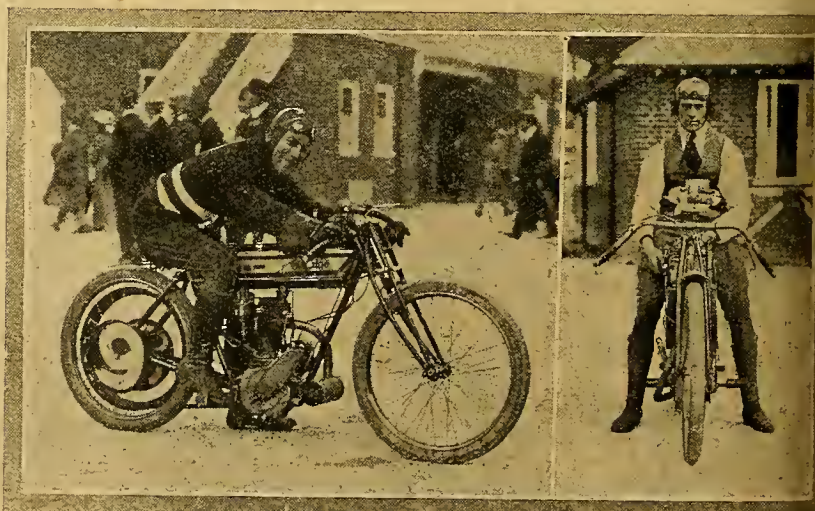
I, a few days back, sent a cheque for £1 asking the Carlow County Council to give me a number for a Morgan runabout. They do not seem to be certain whether this should be as a car or cycle. The Act has two classes—1, motor cars; 2, motor cycles—and in the instructions for the size of number plates it states: "Motor tricycles or bicycles of a weight unladen not exceeding 3 cwts.; the dimensions of car number plates must be halved"—suggesting that tricycles come under the motor cycle registration. The Clerk to the Carlow County Council has asked me for a further opinion, and I have replied that I am putting the matter before you. I may add that Morgans do not exceed 3 cwts., and that they are fitted by the makers with cycle size number plates.—A.I.L.

If the machine does not exceed 3 cwts. it carries a motor cycle registration number and the registration costs 5s., also, having only three wheels, it needs only a £1 motor cycle local taxation licence.

### Taxation Cycles.

I should be obliged if will kindly enlighten me on following points: (1.) Is it necessary, on selling one's old motor cycle and buying another, to take out a fresh £1 licence? (2.) If posing two motor cycles are kept used alternately, is one compelled to have £1 licences for each? (3.) If a motor cycle is bought with a view to re-selling, is it compulsory to both £1 and 5s. licences?—D.B.

(1.) The local taxation licence, costing £1, entitles the holder to keep a motor cycle for one year. Therefore there is no necessity, when selling the machine, to take out a fresh local taxation licence. (2.) If you own two motor cycles and run them alternately, you must have a local taxation licence for each. (3.) If the motor cycle is kept not ridden at any time during the twelve months it is exempt from the local taxation licence, but if it is used once on the road during that period you are liable, unless it is being ridden to registration offices for the purpose of registration. The 5s. licence is a driving licence; only one is necessary. A motor cycle need not be registered if it is not used.



W. H. Elce and F. H. Arnett, winners of the eleventh short motor cycle handicap and ninth long motor cycle handicap respectively, at Brooklands on the 5th inst.



## Speed and Petrol Consumption.

**?** A question has been exercising several of your readers, which has ended in some very wordy arguments. This conflicting evidence does not seem to help us, so I am not going to take any less authority than your own to settle it in my own mind. Question—If a motor cycle had a thirty miles journey which was done in one hour, or done in two hours, which journey would consume the most petrol, *pariteris paribus*?—J.M.

A faster journey would consume the most petrol, and for this reason. The time in either case will make the same number of revolutions, but when travelling 15 m.p.h. the throttle does not require to be so wide open as when travelling at 30 m.p.h., consequently less petrol will be taken into the cylinders on each induction stroke, and as there are the same number of strokes the petrol consumption will be less.

## The Removal of Pulleys.

**?** I have just purchased a 1908 engine 3½ h.p. Triumph. I should be much obliged if you could answer the following questions: (1.) How can the pulley (Triumph adjustable) be taken off easily? (2.) How is an Albion adjustable pulley engine-shaft clutch fitted? Is there any way of fixing it to the shaft? (3.) Is the Triumph pulley or any ordinary pulley fixed on anything, such as a set-screw? (4.) When putting on the clutch, does the pulley go next the crank case or furthest out? I shall not have to fit it on myself, but the shop is merely an ironmonger's and cycle agents, and I want to know how to give the man directions for putting it on. (5.) Is it possible to get a road book map of Ross-shire and Inverness-shire in the book form, and, so, at what price?—R.F.

Why not take your motor cycle to a garage where engineers will handle it properly? It is unwise to entrust valuable machines to anyone who is not used to handling them, as considerable damage can be done by inexperienced hands. The pulley is removed in the same way as any other. Take off the nut, drive a couple of wood wedges between the crank case and the pulley (not too tight), then with a mallet-faced hammer strike the end of the crankshaft a smart blow, when the pulley should come off. In obstinate cases it is necessary to use a special tool with jaws which go behind the pulley. The tool is called a pulley lever. Most garages have one in use. The centre portion of the clutch rod is keyed to the engine-shaft in the same way as the pulley. The centre portion must be bored to the same taper as the engine-shaft, and must have the keyway accurately cut in it to suit the pulley. (3.) All pulleys are fastened by keys and keyways. (4.) The pulley must be fitted on the shaft so that the belt runs on the same line as before; that is to say the pulley on the clutch goes as the crank case as the ordinary pulley. (5.) "The Motor Cycle Route Book" includes Scotland, and can be obtained by our publishing offices, 20, Abchurch Lane, E.C.

## Valve Grinding.

**?** (1.) I should be grateful if you would kindly inform me as to the absolutely correct way in which to grind valves in. By this I mean the movement. Twisting the valve one way and back again is, I believe, wrong. (2.) Is there any preparation that can be smeared on the joints of a crank case to prevent a small leakage of oil, and also to close a small slit in an extra air tube fitted to the carburettor? (3.) Is there any advantage in fitting an extra long air tube to a Triumph 1912 carburettor? Does it increase power and save petrol?—A.C.

(1.) We have never heard the reciprocating movement described as wrong. In fact, Messrs. Brown Bros. Ltd., have just designed a special valve grinder which is designed to give a reciprocating movement to the valve. All you want to remember, whether you give a reciprocating or rotary movement, is to lift the valve occasionally from the seat to prevent scoring. This can be done by placing underneath the valve head two or three coils of an old inlet valve spring. (2.) The best preparations we know of to smear on the joint of a crank case when it is taken apart and reassembled is a light application of shellac varnish. If you want to stop a leakage on the outside without taking the crank case to pieces, seccotine might stop it. The same applies to the extra air tube of the carburettor. (3.) There is an advantage in economy of petrol, as it saves waste petrol dropping out of the extra air

inlet, and there is also a claimed advantage by reason of a slight forced induction, if the pipe is the correct length.

## Lights on Sidecars.

**?** (1.) Does a 3½ h.p. sidecar combination require, by law, a red light at the back for travelling anywhere in England, or is it optional? (2.) Does it require two lights in front?—T.W.T.

(1.) The sidecar combination is a tricycle, and comes under the motor cycle law with regard to taxation and registration, therefore no red light is required at the rear, but the front number plate must be illuminated on both sides. For your own personal safety it is advisable to carry a rear red reflex light. (2.) Two lamps are not required in front of a motor cycle by law, but again, it is advisable to have lights showing the full width of the vehicle for your own safety.

## EXPERIENCES WANTED.

"H.L.I.S." (Pembury).—1912 free engine Premier.

"G.M.C." (Edinburgh).—7 h.p. Indian two-speed and sidecar.

"E.A.I." (Workington).—Wilkinson "T.M.C." for solo work—wear, consumption, and speed.

"J.B." (Wigtonshire).—3½ h.p. Scott and 5-6 h.p. Kerry-Abingdon with sidecar.

"A.L." (Chatham).—2½ h.p. Royal Enfield, 2¼ h.p. F.N., and 3½ h.p. N.S.U. twin two-speeds.



Baroness de Laroche, the first lady aviator, who rides almost daily in the Bois de Boulogne, Paris, on her Motosacoche. She is usually accompanied by a faithful hound of the "police dog" breed.



# DECOMPRESSOR DESIGN.

By B. H. DAVIES.

**H**ISTORY repeats itself. Many years ago we of the old brigade were riding De Dion tricycles and-quads which possessed no valve lifters, and were started by the aid of "decompressors." The long handle of the compression tap was coupled by a rod to a tank lever, and the machine was started by pushing it along with this tap open. Instead of the raucous crackle which now betokens a ready engine, we used to hear a fierce spitting, and the power generated on this reduced compression was sufficient to propel the machine on the level without a rider in the saddle, provided the bore of the tap was small. Before long manufacturers increased the bore of these taps, to render machines more pushable, and an effective explosion was only procurable when the tap was shut.

## The P. and M. Decompressor.

The earliest firm to recognise the value of the decompressor was Phelon and Moore, Ltd., whose device has been fitted to the earliest models dating from 1902-3. The exhaust cam carries beside it an

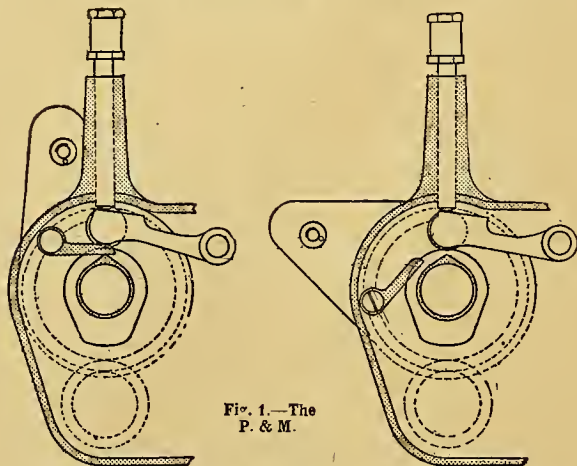


Fig. 1.—The P. & M.

auxiliary cam of such a height that it does not normally touch the valve rocker, but can be made to do so at will by a simple action which interposes a slipper, and thus raises the exhaust valve slightly on the compression stroke. This is shown in fig. 1.

I am at present riding a T.T. single-gear Ariel, with  $3\frac{1}{2}$  to 1 gear, capable of a road speed of sixty miles an hour. Minus the decompressor, this high-gear, high compression engine would be impossible to start uphill, and could only be started on

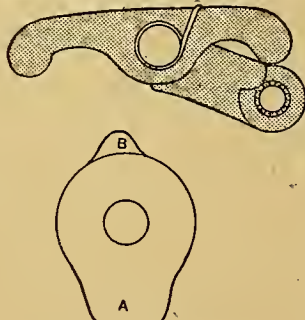


Fig. 2.—The Ariel.

the level by running it along at twelve miles an hour; moreover, it could not easily be driven in traffic at less than 12 m.p.h.; neither could it be readily started up on the stand, as it has no pedals, and pulling the back wheel up is not a sure method when there is no cone in the carburetter, and

jet suction is adjusted for high piston speeds or

But as a matter of fact I can ride this machine round a grass-plot 15ft. in diameter with the engine firing regularly at 2 m.p.h. It will almost start while I am pushing it up steps into the house; it will always start from stone cold without priming or flooding. I walk it along at a speed literally no faster than m.p.h. It can be driven behind a flock of sheep without lifting the valve. I can start it on the stand by pulling up the back wheel with my forefinger. This is attained by means of a simple decompressor device included in the timing gear case. There is a small double pedal mounted on the crank case. When this is in the forward position it pulls down an additional exhaust valve rocker, which is then operated by the small dummy cam B (fig. 2). This causes the exhaust valve to open the least trifle on the compression stroke, and, by allowing part of the charge to escape into the silencer, reduces the usual force of explosion to a faint woolly bark, containing just enough power to propel the machine and rider at from two to eight miles an hour, according to the setting of the handle-bar levers. After the rider has mounted he tips the pedal back, and a spring lifts the additional valve rocker so that it clears the dummy cam B, and the primary cam A alone operates. Thus with this decompressor a racing engine can be started more easily and run more slowly than a standard engine touring machine. 8 h.p. single-gear machines with trencher pulleys would become as docile as kittens with the aid of this charming fitment.

Fig. 3 shows how an experimental device introduced under trial by the Triumph Co. attains the same result in a different way. This sketch shows a Triumph inlet cam cut in the web of the timing wheel.

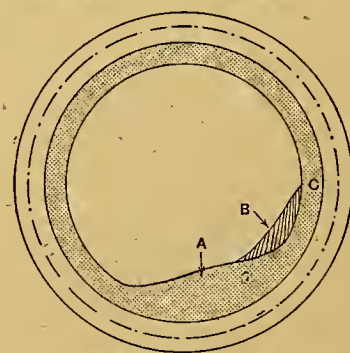


Fig. 3.—The Triumph.

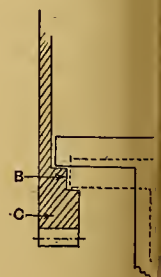


Fig. 4.

main inlet cam A is the full width of the cut-away web. The cam differs from the standard Triumph cam in that where cam A shades away into the web of the web C there is a small, low, continuing cam B, which is only half the width of the cut-away (see fig. 4, a section of the pinion through B C). When the rocker gets off cam A the piston is obviously starting the compression stroke, and the external decompressor lever settles whether the valve rocker shall fall on to the rim C or ride on the narrow cam B. Fig. 4 shows the two positions of the rocker as it rides the cam, the dotted lines being the position of the rocker when the decompressor is out of action. The control is very simple. The stud of the rocker



**Decompressor Design.—**

protrudes through the timing gear cover and is held up against it by a spring. A small toe-lever cam and spring blade enable the rocker to be held on to the cam B or pushed clear of it. In use this decompressor is exactly similar to the Ariel device. It is not being supplied to the public at present, but may figure on the 1913 models.

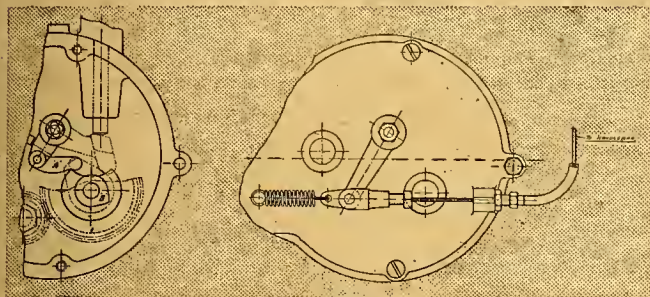


Fig. 4a.—Humber.

The Humber and Eclipse machines are also all fitted with decompressors as standard fittings, and the following description of the Humber device may be easily followed by reference to sketch (fig. 4a). It will be seen that when the small cam B is brought into action it strikes the arm A and so releases some of the gases on the compression stroke. The action is governed by a lever on the left handle-bar, and its action renders starting and traffic riding particularly simple.

**The Eclipse Device.**

The action of the Eclipse decompressor may be followed by reference to the appended sketch (fig. 5).

The valve tappet B is made with a rectangular projection B B, and is mounted in a guide A. The tappet is operated in the usual way by the valve lifting lever E. Side by side with this valve lifting lever, and on the same pivot, is mounted an auxiliary lever F which is operated by an auxiliary cam. When the hand lever is released the tappet guide A moves through 90° and carries round the tappet B with it, causing the projection B B to engage with the auxiliary lever F and release a portion of the mixture on the compression stroke. When the motor has started the hand lever is pulled up about half its movement, moving the guide and tappet into position, shown in the lower sketch, which gives full compression. Upon moving the hand lever still further

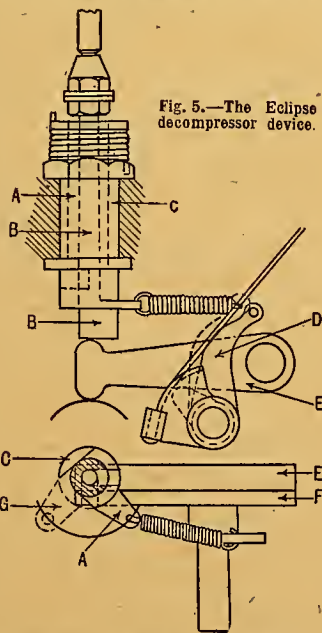


Fig. 5.—The Eclipse decompressor device.

it acts as an ordinary valve release lever, being prevented from falling beyond the full compression position by a suitable catch.

**Detachable Decompressor Devices.**

Two other models of decompressor are worthy of mention, since either can be fitted to any existing engine which possesses side-by-side mechanical valves, i.e., any engine which has a solid valve cap capable of being replaced by a spare cap drilled to take a sparking plug, for both these devices are threaded to take the place of a second sparking plug. The best known is produced by the Amac Co. It consists of a plug containing an internal double-faced valve, and the merit of the device consists in the rigidity with which this valve is pressed down on its lower face by irreversible toggle mechanism to make the device gastight when full compression is desired. When the decompressor action is desired a handle-bar lever lifts the valve up against its upper seating by means of a Bowden wire, and on the compression stroke of the engine a small percentage of the charge is allowed to escape past this upper seating and to emerge into the atmosphere via a hole at the top of the device. The other decompressor screws into a valve cap, and

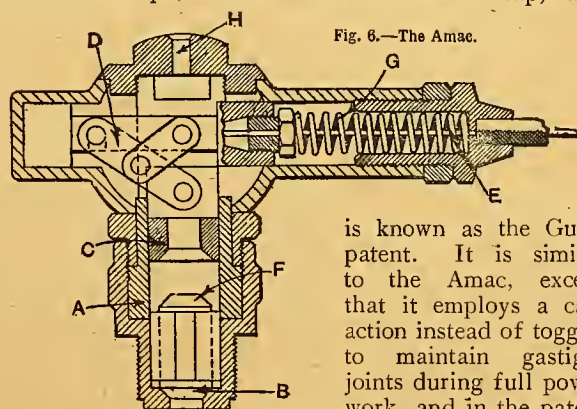


Fig. 6.—The Amac.

is known as the Guest patent. It is similar to the Amac, except that it employs a cam action instead of toggles to maintain gastight joints during full power work, and in the patent

specification it is controlled by a milled nut on the head of the plug, which would get unpleasantly hot in use, but, of course, Bowden control could easily be arranged. This decompressor is the subject of an illustrated article under the heading of Sparklets (see page 938 of this week's issue).

One other form of decompressor is on the market under the name of the P. and P. This device also screws into the valve cap, but works on quite a different principle, for whereas in each of the foregoing devices some of the gases are allowed to leak into the air, the P. and P. merely increases the compression space, and so converts a high compression engine into a low compression engine. The fitting consists of a chamber screwed into the valve cap, being normally sealed by a screw-down valve. When this valve is opened the gases can flow into the chamber and thus reduce the compression.

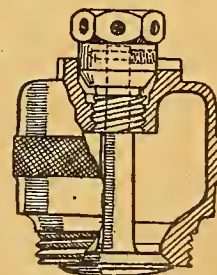


Fig. 7.—The P. &amp; P.

I regard these decompressor devices as by far the greatest convenience introduced during my experience of motor cycling.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### The Price of Motor Cycles.

Sir,—I think it is a capital idea to attempt to cater for the man of moderate and less than moderate means, but I would strongly advocate not going to the unnecessary expense of a magneto. As an experienced user of dry batteries, I have proved them to be as free from trouble as magnetos, one of which I have also had. Only the other day a young man asked me to show him my dry battery as he had never seen one. "Certainly," I replied, "it is in here," tapping the compartment. I added, "At least I suppose it is, but I have not seen it for over a month." Of course, we know that a rider nowadays feels sadly behind the times if he has not a magneto, but I think with a brand new machine this feeling would vanish.

JOHN H. RANDALL.

#### Starting with a Kick Starter.

Sir,—If Mr. S. J. Evans is riding an A.J.S. (which answers to his description of a single-cylinder 2½ h.p. chain-driven machine), he will find the best way to start is simply to kick the engine over the compression without lifting the exhaust at all. One vigorous thrust will do it, provided he takes care to get the engine in such a position that the full resistance of the compression is met with the kick-starter half-way down. This is easily done by lifting the exhaust a little and pressing the starter down once or twice.

I can always start from cold with one kick if petrol is injected *via* compression tap, or with two if it is not. The reader need not assume that my engine lacks compression; it is only that the foot-starter gives one a tremendous leverage.

SYDNEY J. TAYLER.

#### Oily Engines and Shorting Troubles.

Sir,—Permit me to reply to C. L. Mobray *re* an oily engine. He suggests fitting an extra crank case release. There is already an additional one to the hollow shaft. Surely another one is not necessary, making three in all?

With reference to the letter from the Bosch Magneto Co., I am very much obliged for their suggestion of paraffin waxing the high-tension wire, and shall certainly do so, although it is already a very tight fit. I tackled the makers of my machine, and they say that the magneto was not dismantled or interfered with in any way. Besides getting water in the armature tunnel, I was also troubled with same on the contact breaker, and the ring which holds the cam gets jammed after it has been in the rain, which necessitates it being taken out and rubbed with emery cloth. I still maintain that protection is necessary for bad weather.

GROWLER.

#### A Sidecar Experience.

Sir,—I was very interested in the account of the trial of the 6 h.p. Royal Enfield combination in the issue of the 1st inst., but I cannot help feeling that the article does not do this splendid machine justice. I found no trouble from the very first in starting the machine from a standstill on the low gear, and can do so on almost any hill. I have not had a single nut loose or lost in nearly 2,000 miles, and the consumption when I first got it was 72 m.p.g., but I have improved it by altering the jet in the Amac carburetter, and now do 80 m.p.g. over give-and-take roads. The machine has given absolutely no trouble whatsoever, and has done on a good level road, with sidecar and two up, 52 m.p.h. for three miles. I add the usual disclaimer, having no connection with the makers, but felt it a sort of duty to give my experiences.

WILTON HUDSON.

#### Youthful Drivers and Recklessness.

Sir,—Will you kindly permit me to enter a protest against the proposed action of the N.C.U. *re* the above heading? In my opinion, reckless drivers of motor cycles belong to no special class, but come from every class. Of course, only statistics of accidents can prove this, but reading the daily and motoring papers as well, I have seen very few accounts of accidents and reports of reckless driving attributable to minors. It would be very interesting to me to know on what basis the N.C.U. says, "Believing that youthful drivers are the worst." I do not think that the N.C.U. is a very sporting motor cyclists' union since it wishes to stop minors from riding.

H. MEDHURST.

[We take it that the N.C.U., which, by the way, is not a motor cyclists' union, does not wish to prohibit all minors from riding, but only wishes to raise the age limit slightly.—Ed.]

#### Power for Sidecar Work.

Sir,—On a former occasion I most strongly advised motor cyclists in hilly districts not to be taken in by the plausible tales of catalogues and interested parties. Amongst others my letter was replied to by Hugh Gibson, who said that he hoped to prove to us in Scotland that a hefty single was a reasonable mount even for us. Seeing this gentleman's name in the Scottish Six Days' Trials, I journeyed to "the ladder" behind Cockbridge to see how far "the hefty single" and sidecar would go before he failed. I knew him at once from photographs in your paper. He failed earlier than any of the crowd that passed. He tried all the tricks of the trade, clutch slipping, etc., and did all that man could do. No good. We closed round him and gave him the extra power that he required.

Now, sir, in saying, as we do, that 3½ h.p. is not enough for sidecar work, we are not to be understood as bigoted or unreasonable. With two or three-speed gears the little engine can do wonders. Who denies that it will plug up wonderful hills? It is not made for this double work, and is subject to endless ills and troubles when driven so long on so much throttle. Certainly, with those who can often change their machines troubles are not so apparent. They go down to the second-hand market. But with the rank and file of us, for whom you cater, our bicycle and sidecar are horse and gig and all combined. We cannot change them readily and cannot afford to over-drive or take the heart out of our machines. A twin is the only thing for us in Scotland, unless the passenger be a child. It is little short of criminal folly to persuade any poor fellow beyond the Grampians to buy a 3½ h.p. for passenger work; within the first year the engine will be a crock. There is, I think, a convincing illustration. Three gears are better than two, but a hundred are better than three. Instead of dropping into lowest gear where in a mile of heavy pulling the poor little engine goes purple and expires, the very last ounce and atom of 3½ h.p. can be got with the Gradua gear.

With twin 6 h.p. Zenith and sidecar I have done thousands of miles, all in the North, sometimes with heavy passenger, and beyond half an hour with punctures or a plug have never had a moment's anxiety. The machine is a joy and delight, built for its job and fit for its job.

It would be idle to add the usual disclaimer from the far North. I am only eager to save Northern brothers of the wheel from bitter disappointment.

EXPERTO CREDE.



**Short Measure of Petrol.**

Sir,—I was interested in what your correspondent "Fairness" had to say with regard to short measure in petrol. Might I offer the humble suggestion that a petrol can failing to give its full quota of two gallons of spirit is due to a tiny leak in the bottom of the can caused by the almost universal practice of opening the screw top of the can by means of the rim in the bottom of another? Why cannot the top be fitted with a bayonet catch instead of a screw? I don't think for a moment that the short measure is due to dishonesty on the part of the petrol manufacturer, but rather to the carelessness of the consumer.

W. W. ANDERSON, M.B.

**Motor Cycle Mania.**

Sir,—As an ordinary human motor cyclist, may I draw attention to a few of our brethren who would be better in a home than in the saddle.

Type No. 1, the man that will jog along thousands and thousands of miles, day after day, for months at a stretch, and then fill up the motor press with childish accounts of his absurd exploits. Such a one proves nothing, discovers nothing, and benefits nobody but petrol vendors.

Type No. 2 is he who purchases a  $3\frac{1}{2}$  and sidecar, gears it very low, invites his friends and relations to find seats on the various fitments of his combination, and proceeds to crawl up a gentle slope, takes twelve months' wear out of his machine, has his photograph taken, and hawks it round.

Third and last type, the much discussed "Filbert"; everyone knows him in town, but we don't see much of him when riding in the country. I wonder, oh I wonder why?

CHAS. H. GOULDEN.

**Petrol Consumption.**

Sir,—With reference to Mr. Eastgate's and other letters in recent issues. To run economically with a non-automatic or two-lever carburetter, the rider must not only have the skill that is acquired by long practice, but he must also give his air lever continuous and close attention. The average rider has not the skill, and does not take the trouble. Mr. Eastgate's enquiry specially referred to a 5 h.p. Indian, presumably with the Indian automatic carburetter.

In the petrol consumption competition of the Glasgow Motor Cycle Club on June 8th the writer rode a 5 h.p. twin Indian and his consumption is officially given at 111 m.p.g. This was a disappointing figure, as the machine usually does better than this, but still it was very good running, much better than Mr. Eastlake's fifty miles, in economy, power, and noise, for these other qualities are by-products of economy as it were.

This was obtained by using a Scott adjustable automatic carburetter. In this carburetter the choke tube and the automatic air inlet are so nicely adjustable that an approximately correct mixture can be obtained for all speeds and throttle openings, and as the adjustment is carried out while the machine is running on the road it is not guesswork but exact manipulation.

WM. G. B. SCOTT.

**Pillion Seats.**

Sir,—As a motor cyclist of some ten years' standing, and being able to cull from memory at least six accidents directly due to carrying extra passengers on the carrier of motor cycles, I marvel at the growing popularity of this insensible practice.

In the case of adults of both sexes, who are presumably alive to some extent to the risk they are taking, nothing can be said, except a word against the undue strain on the mechanism of the average motor cycle, which, of course, is not designed for such a purpose.

The reason of this letter is not so much to condemn the practice, bad as it is, of pillion carrying, but to draw attention to a glaring case of utter thoughtlessness and, in a sense, cruelty of a motor cyclist competing in a well-known London's club's reliability trials not long ago. This enthusiast, presumably with a desire to create some new record, brought a boy of twelve or thirteen years of age a distance of over 100 miles, only stopping for the times set out in the schedule, which, of course, were very short, and did not admit of nourishment being provided for the boy.

When he arrived at a well-known garage in —, the boy simply fell off the motor cycle in a state of utter collapse,

and it was at least ten minutes before he could really stand. The very grave danger is palpable, as had the motor cyclist gone another few miles the boy would have undoubtedly fallen off the machine, it being obvious that he was too weak and exhausted to retain his hold on to the driver any longer, who, by the way, I understand, was his father.

This seems to be carrying things too far, and I feel sure that all motor cyclists who really love the sport will agree with me that such an action is tantamount to cruelty of the worst kind, inasmuch as it endangers life.

G.W.

**A Six-stroke Engine.**

Sir,—I read with much interest and instruction what from time to time appears in *The Motor Cycle* as to the efficiency of the two-stroke and the four-stroke engine respectively, and it has frequently occurred to me "is it not possible so to construct a four-stroke engine that, on every alternate induction stroke, cold air could, at the will of the rider, be taken into the cylinder instead of gas, and that, on every alternate compression stroke, the air would be expelled without compression taking place?" It seems to me that any modern machine with a four-stroke engine of good make, on an ordinary give and take road, ought to travel at any pace up to 20 or 25 m.p.h. on an explosion on every alternate compression stroke, and that an open cylinder taking cold air every alternate suction stroke would mean a much better cooled and consequently much more efficient engine in every respect. I am not an engineer, but I have an enquiring mind with a mechanical turn, and so far as I can see there ought not to be much difficulty in designing a valve arrangement to give, at the will of the rider, an explosion either on every compression stroke or on every alternate one.

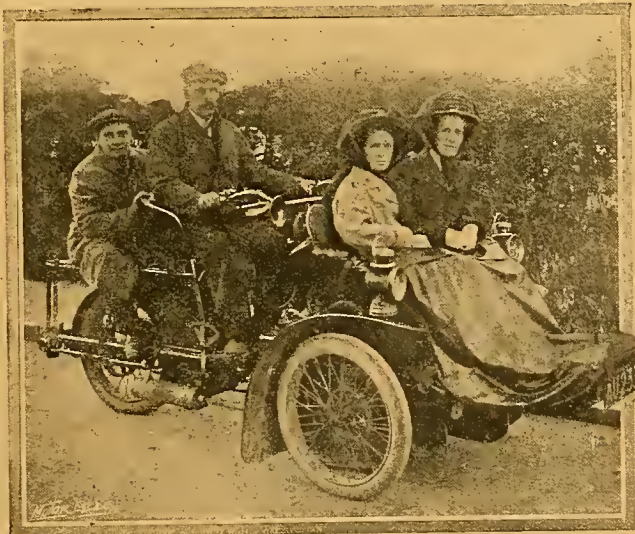
Should you think the subject worthy of consideration and investigation, probably you would give your readers the benefit of your views on it or invite the views of your correspondents.

EFFICIENCY.

[An arrangement somewhat similar has already been tried, and most successfully, on what might be called a six-stroke engine, the strokes being as follows: Suction, compression, explosion, exhaust, admission of pure air, expulsion of air or scavenging stroke.—Ed.]

**Built in 1905.**

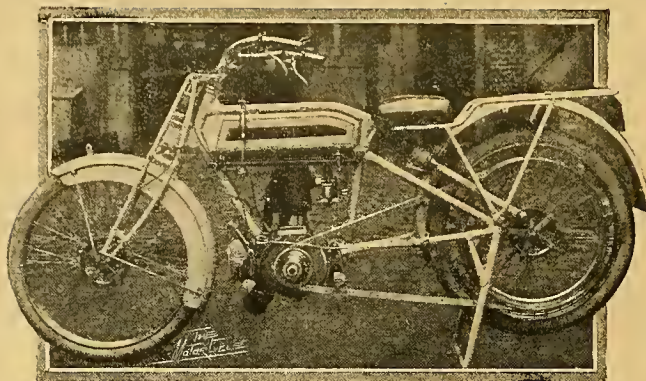
Sir,—The enclosed photograph of a Lagonda tricar may interest you. The machine was built for me in 1905 specially to my requirements, with extra strong back wheel and Michelin car tyre. Although this machine was run



upwards of 10,000 miles all over the kingdom, I had only two actual punctures in the back wheel, but the front tyres suffered many a time. But (as you can understand and sympathise with me) the ignition, carburation, and lubrication proved a great source of trouble and expense.

C. GORHAM.





A new model 3 1/2 h.p. A.S.L., with 26in. wheels, similar to the one ridden by W. E. Cook in the A.C.U. six days' trials.

#### A Waterproofing Mixture.

Sir,—I seldom read *The Motor Cycle* without learning some useful tip. In a summer like the present the following will prove useful to "mudpluggers." To waterproof calico or canvas paint with this mixture; allow each coat to dry before applying the next: 1, Turpentine, five ounces; 2, driers, four ounces; 3, boiled linseed oil, one quart.

#### MUDPLUGGER.

#### L.C.C. and Driving Licences.

Sir,—It would be interesting, I think, to know whether any other of your readers have been treated by the L.C.C. in a manner similar to that in which I have been treated. On July 28th I applied in the proper manner for a licence to drive a motor cycle. I received it in due course, but it was a licence to drive a car or motor cycle. A few days later I received a letter requesting return of licence for alterations. I obliged, and on August 3rd I received my licence with "Licence Expired" printed over it, and a request that if I want it renewed I am too late, and must take out a new one. Fortunately, I have the receipt for the first one.

B.R.W.

#### Motor Cycle Insurance.

Sir,—Will you be so kind as to allow me to ventilate what seems to me to be an unfairness in the A.C.U. insurance policy? In the spring I took out a policy which I believed covered me in every possible way, as I was told it covered the machine and accessories (I paid £4 12s.). I was not told that the accessories were only covered if the machine was damaged as well. On re-starting my machine (a new one) I forgot to take out the clutch and ran into a lamp-post, doing 18s. worth of damage by smashing the lamp, but fortunately, as I thought, saving any damage to the machine: really I should have been better off by doing a few shillings' worth of damage to the machine, as I could then have claimed for that done to the lamp. Not till I wrote to the insurance company was I told that the machine must be damaged as well. Many of your readers who are insured may be under the same misapprehension. There seems no reason for this. It seems to me that the insurance company might easily safeguard themselves by stipulating that the accessories must be on the machine for the claim to be valid. I should be glad if any of your readers could tell me of a policy which does cover accessories. I would gladly pay a few more shillings to cover accessories, as it is an easy thing to damage one's lamp, horn, or belt-case, and yet save the machine. I shall certainly not again insure under the A.C.U. policy.

FRANK MATHEWS.

A copy of the above letter was submitted to Mr. Priestley, of the Liverpool Victoria Insurance Corporation, Ltd., through whom the A.C.U. policies are issued, and his reply is as follows:

Sir,—I thank you for allowing me an opportunity of answering the accusation of unfairness made by your correspondent.

I enclose herewith a prospectus, in which it distinctly states "Lamps and accessories are included under the Accidental Damage Section of the policy *when cycle is also damaged.*"

Surely this is quite clear, and should not lead to any misapprehension on the part of policy holders. The memorandum of endorsement (also enclosed) carries out the statement made on the prospectus, regarding lamps being covered "provided such damage is the direct and immediate result of an accident that at the same time causes the damage to some other integral part of the motor cycle itself (lamp brackets excepted)."

I have before me at the moment of writing specimen policies of the leading companies doing this class of insurance business, and each one contains the same condition.

If your correspondent would call upon me at my office, 199, Piccadilly, W. (presuming, of course, that he is resident in London), I will show him these specimen policies, and the same will no doubt interest him, seeing that, unfortunately, he has decided not to insure again under the A.C.U. policy.

A. H. PRIESTLEY.

#### Colonial Motor Cycles.

Sir,—As makers are probably thinking of new designs for colonial models, might I suggest the advantages of a hybrid between the four-cylinder F.N. and the two-stroke Scott as follows: Three-cylinder two-stroke engine arranged as on the F.N. with same transmission and gears, water cooling (thermosyphon with large diameter pipes), large waterproof magneto and distributor driven by gear wheels off crankshaft, forced lubrication, automatic carburetter, large combined flywheel and clutch, 26in. x 2 1/2 in. voiturette tyres, saddle and forks really well sprung, h.p. 4 to 5, gear ratios 4 1/2 and 8 to 1. This may sound rather a freakish monster and likely to be very expensive, but experience dearly bought goes to prove the necessity of something of this sort. For our work we must have weather proof transmission and ignition, high ground clearance, plenty of reserve power, and as little as possible to tinker with before and after a run. A machine built on the lines suggested would combine all the advantages of the two makes named while eliminating their few weak points.

Undugoda, Ceylon.

L. M. W. WILKINS.

#### SUMMARY OF CORRESPONDENCE.

Will the rider of a Scott and sidecar, "AK 18," kindly communicate with E. Williams and Co., Ltd., the Garage, Matlock Bath?

The rider of a Triumph who stayed at the White Horse Hotel, St. Ives, Hunts, on the 29th ult., is asked to communicate with Parker and Sons, Market Hill, St. Ives.

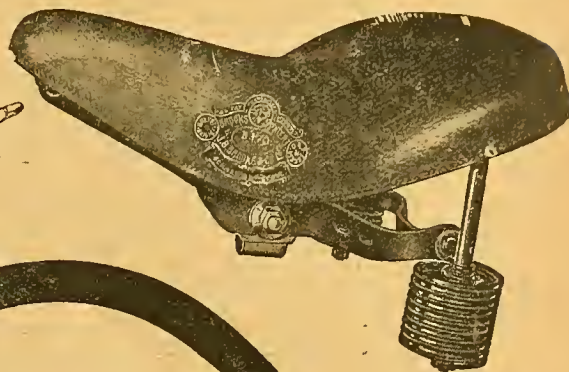
Will Mr. McAllister, who wrote to Glover Bros., Spon Street, Coventry, from an address at Stirchley, kindly send his full postal address?

The Editor would be interested to hear experiences of motor cyclists who have made use of the Tilbury-Gravesend ferry.



A. J. Dixon (3 1/2 Sinner) the only rider to climb to the summit of Porlock Hill in the M.C.C. Devon Tour. He is riding the same machine in the A.C.U. six days' trials.





## Choose that saddle—

choose any other model which bears  
the name of BROOKS, and—

You will ensure perfect comfort—perfect  
service.

In the recent

## Scottish Trials

each of the riders in the winning  
team made that choice, and—

The special prizes which were offered  
for the best performance by a team of  
three, and the best performance by a  
trade rider, were won by men whose  
bicycles were

# BROOKS

equipped.

And we say the saddle helped them—we know it did—  
and you, if you compare its service with that of any  
other saddle which you may have fitted to your  
mount to-day, will realise the value of its aid.

We suggest that you should make this test and, with  
that object, shall be delighted to send you copy of  
the BROOKS BOOK upon request.

**J. B. BROOKS & Co., Ltd.,**

**49, Criterion Wks., Birmingham.**

*Note that a full range of the BROOKS Special-  
ties may be seen (but not purchased) at our*

**London Showrooms: 11, Grape  
Street, Shaftesbury  
Avenue, W.C. (Oxford  
Street end).**





# BSA Motor Bicycle

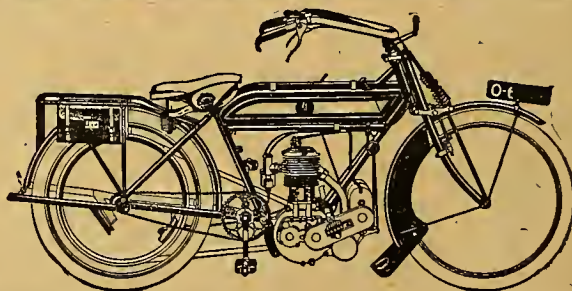
Irish End-to-End Reliability Trials—  
**THREE B.S.A.'S ENTERED**  
**ALL SUCCESSFUL**  
 AND AWARDED  
**THREE GOLD MEDALS.**

Scottish Six Days' Reliability Trials—  
**TOP POSITION**  
 ——— IN ———  
**SILVER MEDAL CLASS**  
 Won on a  $3\frac{1}{2}$  h.p. Two-speed B.S.A.  
**THE ONLY B.S.A. ENTERED.**

*Write now for Latest Catalogue of B.S.A. Motor Bicycles.*

**THE BIRMINGHAM SMALL ARMS COMPANY LTD., 13, Small Heath, Birmingham.**

- |                |  |               |
|----------------|--|---------------|
| <b>Model A</b> | With fixed engine and fitted with pedalling gear .. ..   | <b>£50 0</b>  |
| <b>Model B</b> | With free engine and double cone clutch in back hub; pedal starting from saddle .. ..  | <b>£56 10</b> |
| <b>Model C</b> | With free engine and two-speed gear in back hub; gear operating by foot lever, which can be locked by control lever on handlebar .. ..         | <b>£60 0</b>  |
| <b>Model D</b> | Tourist Trophy; without pedalling gear, fitted with 26×2½in. Dunlop tyres, semi-racing handlebar; wheel base 3½in. shorter than standard .. .. | <b>£48 10</b> |



*A Motor Cyclist's Advice: "Always use B.S.A. Cylinder Oil for Motor cycles:"*  
*In answering this advertisement it is desirable to mention "The Motor Cycle."*



**NEW PRECISION MODELS.**

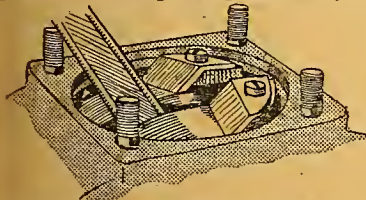
F. E. Baker, Ltd., Moorsom Street, Birmingham, makers of Precision engines, have decided to add several new models to their list for 1913. These consist, be-



Method of fixing roller in valve rocking arm of 2 1/2 h.p. Precision.

sides the 500 c.c. Green water-cooled engine, of a complete range of the overhead valve type of engine, including a 2 3/4 h.p. 70 x 90 mm., a 3 1/2 h.p. 85 x 88 mm., and a 5.6 h.p. twin 70 x 85 mm.

We have inspected all these engines, and were struck by their neat and workman-like appearance. Special attention has been paid to the important and desirable feature of making the crank case oiltight. Mr. Baker points out that he wishes to introduce the overhead valve type as touring models and not as special racers. They have undergone strenuous tests and have proved in every way satisfactory. To back up his argument he took us for a run in his sidecar attached to a 3 1/2 h.p. engine of this type. A Sturmey-Archer hub was fitted having a top gear ratio of 4 1/2 to 1, and the power produced by this



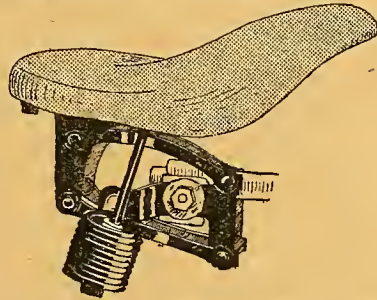
Oil scoops or scrapers over flywheels of T.T. Precision engines

engine at low speeds was so remarkable that nearly all the thick Birmingham traffic was traversed on the high gear, and in the whole of our trip we failed to detect a knock. It is interesting to note that the cylinders of the Green engines used by Mills and Garret in the Tourist Trophy and at Brooklands have been in hard use for three years and are still in excellent condition.

We illustrate two new fittings on Precision engines. The first is a valve rocker from the 2 1/2 h.p. engine into which a roller has been inserted in an ingenious way. The roller is made in two pieces and riveted together. The fitting is easily explained by the sketch. The second device, which is fitted to T.T. engines only, consists of two scrapers fixed to the baffle plates between the cylinder and crankcase. Their object is to catch the oil brought round on the flywheels and throw it on to the cylinder walls.

**A NEW BROOKS SADDLE.**

J. B. Brooks and Co., Ltd., Great Charles Street, Birmingham, are introducing a new saddle, designed to have a



parallel motion. Their well-known system of compound springing is retained, and these springs take all the weight, so that the system of levers used has no strains imposed on it other than those required to keep the saddle horizontal. It is worthy of note that the firm are making considerable extensions, so as to be able to cope with the increasing demand for their goods.

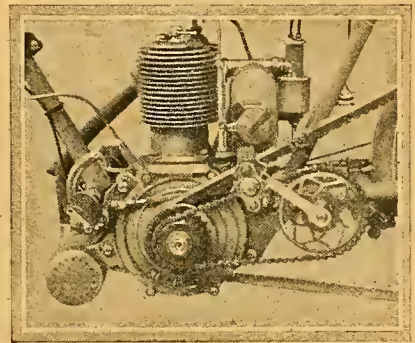
**A REAR LAMP LIGHTED BY THE MAGNETO.**

We recently had the opportunity of inspecting a very neat rear lamp lighted by the magneto in the following way. A small attachment carrying a carbon brush is fixed to the insulated part of the contact breaker; this brush makes contact during one of the two maximum positions of the armature, not used for ignition

purposes, with a brass segment carried in a fibre disc over the contact breaker. This segment is electrically connected by means of a small spring to the insulated terminal in the contact breaker cover, from which a low-tension current is taken to the lamp by means of an insulated wire. The lamp is furnished with a four volt bulb, and although the current is intermittent the glow is continuous, and illuminates the lamp in a very satisfactory manner. The device has been patented by Mr. C. W. Hinksman, 29, Upper Hanover Street, Sheffield.

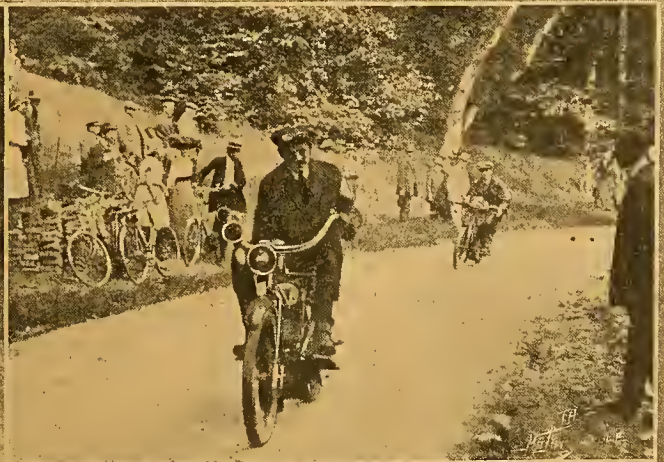
**A NOVEL KICK STARTER.**

Riders of New Hudson machines with standard Armstrong gears know that to start the engine it is necessary to place the machine on the stand to start the engine.



A novel kick starter.

Bright and Hayles, a firm of motor engineers at 73, Church Street, Camberwell, S.E., have sent us a photograph of a kick starter they have fitted to a New Hudson machine, which enables the engine to be started with the back wheel on the ground. The firm state that they have simply locked the large nut of the adjustable pulley and cut on it a left-hand thread, on which is screwed a motor cycle free-wheel chain ring. The axle of the pedalling gear has been reversed to bring the chain wheel on the left side, and the chain shortened.



ENGLISH-DUTCH TRIAL. COMPETITORS CLIMBING DE GREBBE, THE ONLY HILL ON THE COURSE.





## SIX DAYS RELIABILITY TRIALS

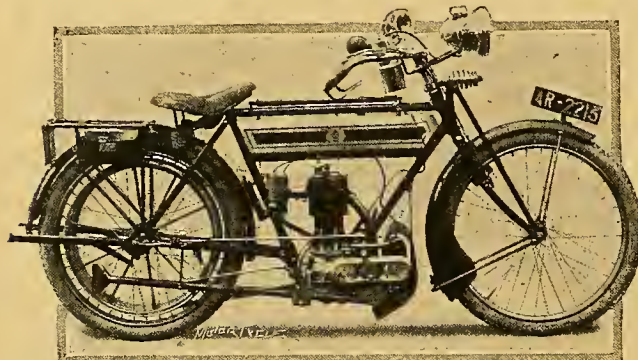
*Taunton as a Centre*



**T**HIS is being written on Sunday, the eve of the great trial, which, as regards the number of entries, the organisation, and probable severity, will eclipse anything in the way of a six days' test the A.C.U. has ever

paratory work is now seen to be bearing fruit. Spaces are marked out in the big hall for each machine. These are not numbered, as the machines start and finish in different order each day; but the early arrivals are to fill the back places to allow room for those who come in later.

as possible, and to confiscate only those spares which, in the opinion of the judges, were unlikely to be carried by a private owner on tour.



A new model Triumph which is a T.T. roadster with free engine clutch and single gear. Observe the long silencer pipe with flattened end which is on all the Triumphs in the Six Days'. The machine illustrated is being ridden by H. Lister Cooper.

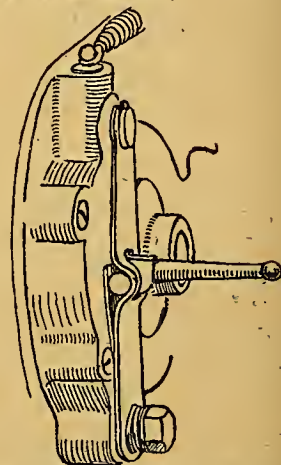
held. The drive from town on a  $3\frac{1}{2}$  h.p. B.S.A. was rather a hard one, as the westerly wind was dead ahead and several soaking rainstorms had to be gone through. That was yesterday. Today, though the weather is dull, the rain has held off and, in Taunton at any rate, we are all living in hopes of some improvement in this respect.

The official garage is the Territorial drill hall, and as an overflow for thirty-five machines which the drill hall cannot hold, the miniature rifle range has been brought into requisition, both of which

to perform. Major Nicholl took note of the equipment of each competing mount, Mr. Greenhill, aided by Mr. J. M. Trevarthen, worked hard with the sealing instruments, and Mr. E. M. P. Boileau the spare parts—a difficult and rather thankless task. The chief difficulty was in carrying out rule 14, which stated what might be carried in the way of spares, but did not specify what articles were forbidden. Eventually it was decided to interpret the rule as liberally

Passage ways are left behind, in front, and on each side of the rows, so that the public, who have access to the hall at night on payment of a small fee, may easily inspect the machines. In each garage there is a clock bearing the legend "Official time."

From 10 a.m. this morning work began in earnest. Major Nicholl, D.S.O., the Rev. E. P. Greenhill, and Mr. Archibald Sharp, the judges, each had their several duties



Operating lever of the Triumph decompressor, which may be expected as standard in 1913.

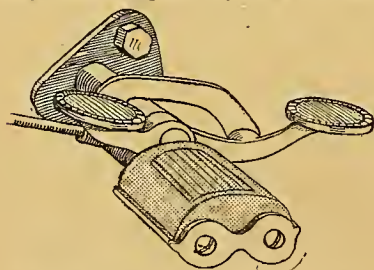
### A Weird Collection.

At the end of the day a weird collection of parts was made, which comprised several chain wheels, three piston rings and two complete carburettors off one passenger machine, a phosphor-bronze brake shoe, a gear cone, an almost complete dog clutch gear, an induction pipe and numerous spare petrol pipes. A blackboard on which the competitors' numbers are painted is placed outside the garages, and each morning as soon as it is time for a competitor to have his allotted quarter of an hour at his machine, his number is crossed off, and he is allowed to enter the garage.

He must not remain here more than fifteen minutes under pain of disqualification. Then he has ten minutes in the yard in which to replenish his tanks after doing which he must start.

### Weighing Operations.

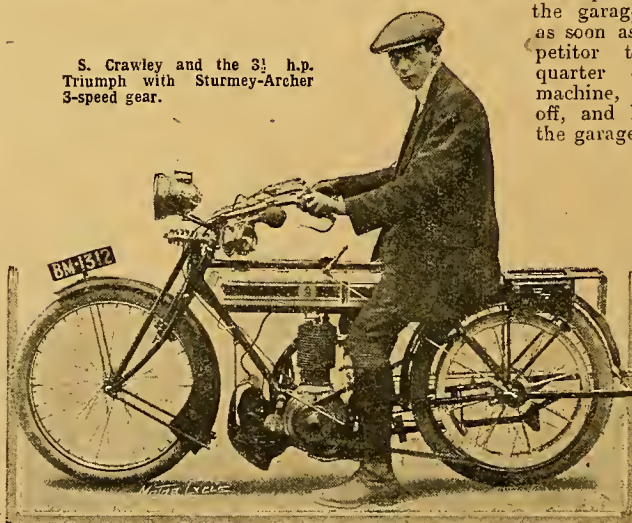
Each machine was weighed this morning in the large garage. The scales were just inside the door, and all a man had to



Clutch pedal of new Armstrong three-speed side-car hub, fitted to 6 h.p. Brough.

buildings are, in part of the old county gaol. Outside there is a great yard bounded by unscaleable walls, while the only entrance is through an iron gate guarded by an ex-policeman who knows his job thoroughly. Credit for these excellent arrangements must be given to the Taunton M.C.C. and to Mr. T. W. Loughborough, whose excellent pre-

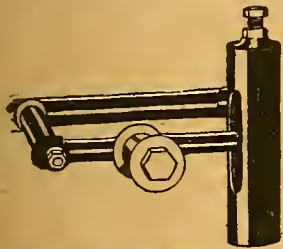
S. Crawley and the  $3\frac{1}{2}$  h.p. Triumph with Sturmey-Archer 3-speed gear.



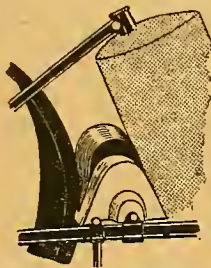


**Six Days' Reliability Trials.—**

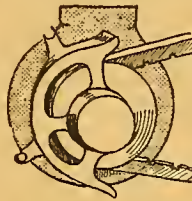
do was to push his machine up a specially constructed ramp straight on



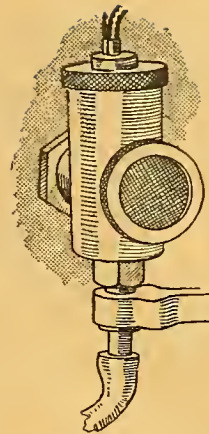
Spring box and arrangement of wheel springing on Jones sidecar fitted to one of the Matchless machines.



Complete magneto cover on the Scott machines.



Premier belt and pulley guard. It also covers the air release through centre of crankshaft.



Arrangement of force feed pipe from crankcase to carburettor on a 2 1/2 h.p. twin Humber.

D. F. Nicholl, whose excellent work the Union greatly appreciates, received his promotion only a few days ago. Valuable help is being given by the following members of the Taunton and District M.C.C.: Dr. Hles, Messrs Goldsworthy, Crump, H. F. Potter, J. Bermingham (sealing), W. J. Goodwin, G. F. Arnold, and G. Wright. The A.C.U. are distinctly fortunate in having such willing helpers at Taunton.

to the weighing machine, wheel it off, and take up his position ready for the officials to make their examination. This year the cylinders are sealed to the frame, and the only other sealed portions are the two wheels.

The sidecar machines were weighed at the gasworks under the supervision of Admiral Sir R. K. Arbuthnot, Bart.,

who is officiating as travelling marshal. Admiral Arbuthnot's promotion came just too late to allow him to enter, so he has kindly offered his assistance as an official to the Auto Cycle Union during the trial. Another officer, Major

## SOME OF THE COMPETING MACHINES.

**A**N examination of the competing machines leaves one with the firm conviction that great advance has been made in weather-proofing. Not only does this apply to the transmission, but equally to warding off foreign matter from the magneto plugs, and last, but not least, from the rider. Secondly, change-speed gears are practically universal. Those machines with single gears only are not regarded seriously as having a remote chance of completing the trial without loss of marks, if they do so much more credit to their riders.



Clutch pedal (Rex cone) and flattened silencer pipe (Rex cone) on 3 1/2 h.p. Bradbury, and on the Triumphs.

Altogether the competitors' mounts are very workmanlike lot. One or two can be styled freakish, and others have some rude arrangements of forced induction and other similar fakements, but, speaking generally, they are well finished, staunch, and reliable mounts, likely to give a good showing.

### Mechanical Features.

Dealing with the new arrivals, there is the Rolfe, a sturdy machine with twin precision engine, countershaft, and speed gear, and kick starter. A 1913 model Humber also makes its first official appearance, although we had an opportunity of examining it some weeks ago. It has a kick starter and Sturmey-Archer three-speed gear, and looks very attractive. As regards the Triumphs, instead of the one standard model usually entered for six days' events, we have in 1912 practically 11 possible types, including a three-speed countershaft geared model (which Haswell still drive), a two-speed countershaft, three-speed hub gears, plain direct drive,

and lastly Lister Cooper's T.T. model with hub plate clutch.

One of the Enfield sidecars, which model, by the way, is well represented, has a big undershield, which should effectively screen the magneto, engine, and gear. The O.K.-Precision possesses interesting points of design. One model has chain drive and a two-speed counter-shaft gear.

The A.J.S. are among the best finished machines in the trial, the three-speed passenger machine at once attracting the eye. This machine has a gear which is of the now popular counter-shaft type, with dog clutches for high and low ratios and sliding gear for the intermediate.

The Swifts and Ariels can be walked about the yard with the engine firing by the aid of the decompressor.

The buzzing Scotts are making a good show as usual and look spick and span. The trials machines have a double silencer arrangement and are particularly silent.

### Open Framed Machines.

The Swans are being watched eagerly. These machines have open spring frames and pan seats. The new A.S.L., with 26in. wheels, is very taking in French grey. A. H. Alexander is riding a blue single-cylinder Indian with two-speed

gear. The new machines to six day events are the Kynoch, which has a Sturmey gear, the Campion-Jap (with G. and H. gear), Wray-Precision, with



Effective dressguard on Mrs. Hardee's P. and M.

Bowden countershaft gear and kick starter, and the Corah-Jap, with P. and M. gear. The P. and M.'s are as clean and neat as ever, and are sure to be near the top at the finish. George Brough has fitted one of the new Armstrong sidecar gears to his 6 h.p. twin since the Scottish trials, his lowest ratio being 5 1/2



Competitors arriving at the Drill Hall, Taunton, for the weighing in and checking.





1. n.p. Iwin Swan ridden by Gurney. Note the open frame and pan seat.

J. S. Holroyd's twin cylinder Motosacoche with two-speed gear. A new model in the Six Days' Trials.

H. Mills (3½ Green-Precision water cooled).

to 1. The water-cooled Green-Precision which H. C. Mills is riding is conspicuous for its high frame, but there is no doubt about the power in the engine.

Miss Hammett (Douglas) and Mrs. Hardee (P. and M.) are to be congratulated on their pluck in riding in such a severe trial.

#### Green-Precision.

The 3½ h.p. Regal-Green-Precision is quite an interesting machine. The motive power is the 3½ h.p. 85 x 88 water-cooled Green-Precision engine. In addition to the honeycomb radiator incorporated in the copper water jacket, there is a supplementary tank provided with a large filler cap at the end of a tube, about 3in. high, carried forward of the petrol tank, the duty of which is to leave room for expansion. The frame has the top tube dropped at the rear in the usual way, but the supplementary stay is now duplicated laterally, and allows the valves to be easily reached. The two tubes of which it is formed more or less follow the contour of the bottom of the tank. The belt is guarded in front of the engine pulley and entirely enclosed on the offside. The gear is the Sturmey-Archer.

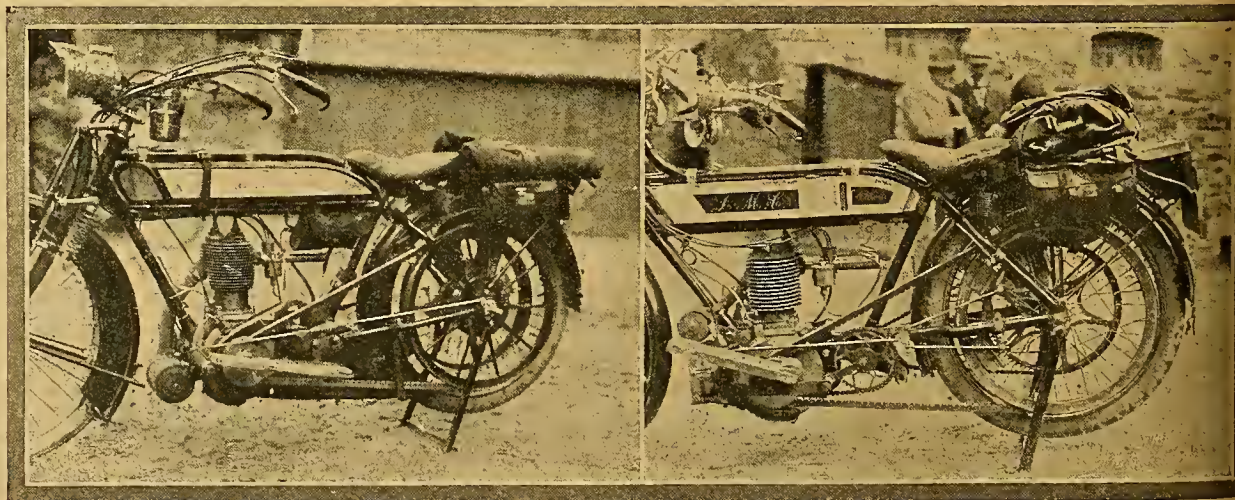


Norman Taylor (twin Yat-Jap and Millford sidecar), who claims to have beaten the six days' sidecar record.

There are several examples of the L.M.C., one with a combined chain and belt drive. An entry accepted after the programme had gone to press was S. J. Tessier's 8 h.p. two-speed Bat sidecar combination. Another Bat—a twin-entered by G. Babington, has an Armstrong gear, the first Bat with this gear we have seen.

The James mounts have the 1913 three-speed countershaft gear, and are bound to score in hill-climbing. Two of the New Hudsons have countershafts and combined chain and belt drives to enable big driving pulleys to be used. Holroyd's twin Motosacoche, with two-speed gear, is being eagerly watched, as this is a forerunner of a new 1913 series. It can be said without contradiction that the Zeniths and N.S.U.'s are the nearest to standard of any machines in the trial consequently their reliability is known.

The Quadrants are well represented, three of this make having three-speed hub gears. The Matchless sidecars look smart, and no hills have troubled them at the time of writing. Another passenger machine which greatly interests the West Country folk is the A.C., of which there are two examples.



Best guard fitted to A. G. Fenn's Humber.

3½ L.M.C. L.M.C. 2-speed gear with combined chain and belt transmission.





SCENE AT THE START ON MONDAY.

W. D. South (Rudge Multi).

W. Cooper (3½ h.p. Bradbury), Sturmer-Archer gear.

**First Day, Monday.**

Taunton, Teignmouth, Torquay, Plymouth (luncheon), Tavistock, Exeter, Taunton, 171½ miles.

Monday morning began well. The weather was fine but dull, and but for the fact that the glass had fallen during the night there was nothing to show that the first day's run would be on other than dry roads. At 7.30 the yard presented an animated scene. Early starters began to arrive and show a keen interest in the road on which the numbers were painted.

Mr. J. R. Nisbet, clerk of the course, assisted by Mr. Macnamara, who took the names, called out each man's number to the second. Everything was done in an orderly and businesslike manner. Just before starting time Col. Boles, M.P., M.F.H., arrived, having driven eight miles into Taunton for the express purpose of starting the leaders. The two early competitors were given the preference.

Mrs. Hardee, on being given the word to "go" punctually at 8 a.m. by Col. Boles, failed to make her P. and M. start, though Pratt had made the kick but perform splendidly five minutes before, so she had to be pushed off by rolling helpers. Miss Hammett (2½ h.p. Douglas), however, scorned assistance,

and on being started a minute later she made a neat running mount. Both ladies were heartily cheered. C. T. Newsome (Rover), No. 1, was next dispatched, and then Mr. Loughborough took charge of the start, sending off the men in numerical order. Frank Smith, who had had his broken sidecar spring repaired during the night, arrived just as the early starters were leaving. He was annoyed at the judges' decision to prevent him carrying his detachable wheel. The only entrants who failed to materialise were F. G. Boddington (7 h.p. Chater-Lea), F. Begley (3 h.p. Hazlewood), and W. H. Bashall (7 h.p. Bat and sidecar).

The early part of the run was over a not very smooth road to Blagdon Hill four miles from the start. The acclivity rises abruptly from the plain, and though the gradient is not unduly severe, the hairpin corner encountered about one-third of the way surprises those who do not know the hill. In these days of change-speed gears, however, little emotions of this kind are of no account, and the few observations we made on the hill justify these statements.

**The First Climb.**

The two ladies got up in good form, and after this the following competitors made clean ascents while we were watching the trial from this point. Fry (Quadrant), Scott (Rudge), South (Rudge), Wasley (Douglas), Drake, Pratt, and Shaw (P. and M.'s), who changed on the corner. Shaw, by the way, shows his contempt of superstition by accepting No. 13. Sproule (P. and M.), Sirrett (7 Indian), who made particularly easy work of the ascent, Alexander and Hill on similar mounts, Greaves (Enfield), Hardee (Triumph) had a little difficulty in changing gear, R. C. O. Wells also found his gear difficult to operate, Newsome, Crawley, Lister Cooper (Triumphs) came up in splendid style, as also did Moffat, Fletcher, Phillips (Douglas), and Newey (Bradbury). F. Dover, who had forgotten to lubricate his engine, dismounted, and one or two other failures are recorded. A. H. R. Purchase (Rolfe sidecar) experienced the first tyre trouble only five miles from the start. We then

rode on to watch the performances on Telegraph Hill. The remainder of the climb up Blagdon Hill was easy, and thereafter the road was good but narrow, and quite unsuitable for fast work until the main Exeter-London Road was reached a few miles east of Honiton. Near Exeter a turn to the left was taken which was indicated by a R.A.C. road guide. The Automobile Association men also gave valuable assistance at various danger points and doubtful turnings.

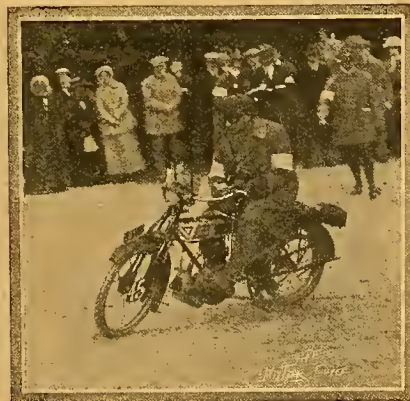
The route at this point was most complicated, but so well was the marking done that to lose one's way was a sheer impossibility.

**On Telegraph Hill.**

Telegraph Hill, which is on the main road to Teignmouth, is a long ascent with one hump in the middle, with a gradient of 1 in 7½ or thereabouts. Many of the more powerful singles took the ascent on top gear, while the lighter machines came up easily on their lower speeds. Among the newer machines we noticed the Swans, the 2½ h.p. twin Motosacoche, and the Rolfs to be performing well. Johnson (Kynoch) nearly came to a standstill through changing up too early, but the speed changing was



S. Brown (3½ h.p. James), James gear, on Blagdon Hill.



A. R. Abbott (3½ h.p. Bradbury), N.S.U. gear, changing speed on Blagdon Hill.



**A.C.U. Six Days' Trials.—**

done better here than at Blagdon, where the corner came as somewhat of a surprise. The only failure among the bicycles was that of J. M. Oakey (Matchless), through a high-tension brush in his magneto coming unscrewed. He had also had a puncture and other minor troubles at this early stage. Hubbard (Bradbury) was badly obstructed by a car.

**The Passenger Class.**

Though the hill was hardly steep enough to test the single machines, it was a good test for the passenger class. In this section the following made particularly good ascents: The two G.W.K. cyclecars, Colver (Enfield sc.), Jameson (Enfield sc.), Morgan (Morgan cyclecar), Frank Smith (Clyno sc.), C. R. Collier (Matchless sc.), the two A.C. Sociables, Guest (Matchless sc.), J. Tassell (Matchless sc.), A. J. Stevens (A.J.S. sc.), and V. Garland (Clyno sc.) J. R. Haswell (Triumph sc.) nearly stopped through changing down too late. The Duocar driven by De Peyncare came up well and then suddenly pulled up on the steep portion, and was in trouble for some seconds.

A mile or two after Telegraph Hill the first secret check was situated, but practically all the competitors were on time. A long climb over the moorlands gave us our first glimpse of the sea, but before Teignmouth was reached rain set in, and thereafter the run was rendered as uncomfortable as it could be. Oilskins and waders were now hastily donned.

Great interest is being taken in the trial, and crowds assemble in the towns and villages along the route. In Teignmouth the competitors dropped down a narrow street and had to round a hairpin which was obscured by a high wall. As several narrow escapes from falls occurred, Mr. A. H. Priestley took up a position here, but even his efforts did not prevent one man falling. This was G. Hunt (Campion) with whom the rider of the twin Swan collided. Torquay looked uninviting. The wet tramlines to Paignton were not relished, but the weather did not prevent a good crowd observing the ascent of the long winding hill immediately following the toll bridge.



Miss Hammett and Mrs. Harlee, the two lady competitors, waiting their turn to start.

On through Totnes the roads were fast becoming a mass of pools of water, and occasionally a competitor would be passed adjusting or changing his belt or cleaning the terminals.

**The Lunch Interval.**

Lunch was arranged at Plymouth, and but for the rain the morning's run would have been much enjoyed. The return to Taunton was by way of Tavistock and Two Bridges. The rain continued with unabated vigour, and it was difficult to see with rain being driven into one's face by the strong easterly wind. This was the more unfortunate, as the hills on this section are twisty and narrow, and low gear work was the order. Observers were posted at Two Bridges, but they were ornaments only, for every rider we saw

had no difficulty in accounting for the bend and 1 in 8 gradient.

**On Merrivale Hill.**

Up Merrivale Hill Mrs. Hardee came in splendid form on her P. and M., changing into second at the bad corner. Those behind her successfully negotiated the long grade in the teeth of the bitter easterly gale, which brought the low-powered machines down to low speed. All the way to Moreton Hampstead the unpleasant weather conditions continued, but after the latter place, where Lister Cooper, Arter, and several others stopped for petrol, the road, though very hilly, was more sheltered.

In the narrow winding road we overtook Phillip on his silent running Scott



A group of passenger machines which are taking part in the trials.



**A.C.U. Six Days' Trials.**

trailing a strap on the ground. At Longdown was a secret check in charge of Mr. A. V. Ebbelwhite (one of the official timekeepers), and near Exeter we saw Major Nicholl and several interested spectators observing a hill. The conditions were much better after Exeter, and near Taunton the roads were quite dry. Miss Hammett may be disqualified for receiving assistance in mending a puncture. Stanton had a broken front wheel cone, and was towed home by Mr. Loughborough. H. A. Cooper had similar trouble in his rear wheel, and broke the rear axle, and retired before Exeter. W. Cooper is missing.

The following also retired to-day: J. Slaughter (3½ New Hudson), R. Poole (3½ O.K.), Colin Macbeth (3½ Rudge), Fred Dover (3½ Premier), G. W. Ruscoe (2½ Forward), S. T. Tessier (7 Bat), and G. V. Moss (8 Autotrix cyclocar).

**Second Day, Tuesday.**

Taunton, Bampton, Barnstaple, Ilfracombe, Lynmouth (luncheon) (slow hill-climb), Countisbury, Porlock, Bridgwater, Somerton, Langport, Taunton. Distance, 160¼ miles.

The start was made this morning in fine weather; the only absentees were those whose retirements we have already mentioned in our report. Miss Hammett's case was heard last night, and the judge decided that, as no assistance could be provided, the matter could be dropped; her tyre had a huge cut in it, but she decided to continue on it to-day. The main road to Barnstaple was followed through Bampton. Near South Molton Gibb (Douglas) stopped to shorten his belt; Evans (3½ Humber) and Pratt (P. and M.) stopped for a clean up twelve miles from Lynmouth. Phillips (Triumph) was seen stopped by roadside three miles from Taunton, but incidents on this stage were fairly rare, except that Creyton suffered a broken valve lifter, and Wicker, who had sprained his wrist through a fall in Plymouth yesterday, had some difficulty in repairing a puncture. After we passed Barnstaple the main road was followed to Ilfracombe, after which the next point of interest was Parracombe, the steep climb out of which was narrow and difficult to negotiate; then came Beggar's Roost, the *pièce de resistance* of the morning's run.

**The Ascent of Beggar's Roost.**

The surface was rough, but at the side there was room for a motor bicycle. Those who did get up performed well, but failures were numerous. Those who made successful ascents and gained a bonus of 25 marks were C. T. Newsome, Sproston, Gray, South, Penny, Pratt, Shaw, Drake, Sproule, Hill, Greaves, Mrs. Hardee, W. F. Newsome, Crawley, Fletcher, Houghton, Newey, North, Pollock, Arter, Brown, Phillip, Baker, Longfield, Sawyer, Dickson, Dickson, Haddock, H. Haswell, Mills, Bees, Haslam, Heaton, Cook, Peachey, Watson, Holloway, Dibb, Griffith, Herdman, Soreby, Morris, McMinnies, H. Dixon, Oakey, Babbington, Wilberforce, Moss Blundell, Berwick, Little, Brough, Dixon, Evans, Wood, Keiller, Stevens, Frank Smith, Jameson, Creak Davis, Haswell, Morgan, and C. Collier.



This (Thursday) morning's route, 85½ miles.



A.C.U. Six Days' Trial. Total for the day, 154½ miles.

Up to the time we left the hill there had been no less than thirty-four failures, while exciting incidents were not uncommon. As Berwick was making a fast ascent, a car with two dogs following was coming down, and the plucky rider only missed one by a hair's-breadth. South only dismounted after being obstructed. Greaves came up fast with several others, who drove him into the side; however, he recovered quickly, and though he had to tackle the steepest and roughest part he made a wonderful recovery, and an absolutely clean ascent. Pollock also had a similar experience. Particularly fine ascents were made by Brough, Moss Blundell, Hill, and Haswell. The latter came up particularly well—a really fine performance for so small an engine. Though Beggar's Roost accounted for many failings, Parracombe also had its share. Many of these, however, were due to obstruction by four-horse waggons.

A curious incident happened during the morning's run. Greenhill's machine broke down, and Major Nicholl, with Sharp in his sidecar came upon him in his trouble and took him in tow, so two judges in a

sidecar towed in the other derelict motor bicycle. After lunch at the Lyn Valley Hotel, Lynmouth, the competitors proceeded to Countisbury for the slow hill-climb.

**FRENCH TRIALS REGULATIONS.**

All is not well with motor cycle regulations in France, judging by the letter published in *L'Aero*, and signed by Grapperon, a well-known rider in French competitions. M. Grapperon recommends competitors not to enter for competitions unless they are held under the regulations of the Automobile Club de France, and warns French manufacturers to be careful not to put machines on the market such as are used for racing purposes—a policy which killed the industry in France some years ago. He recommends that all machines should be sealed, that the weight of the driver should not be less than 10 stones, and that in the case of professional riders the name of the machine should be published, but for amateurs names only should be given. Cubic capacities and weights to be tested immediately after each event.





### Amateur Motor Cyclist Association.

We understand that the organisers of the proposed amateur association referred to this week have a promise of influential support from a very high social quarter.

### John Gibson's Recovery.

We are pleased to inform our readers that John Gibson, who was injured in the Isle of Man whilst practising for the T.T. races, is now quite recovered. He was reported to have been seen riding a motor bicycle at Stratford-on-Avon last week.

### English-Dutch Trial.

Owing to a slip last week we inadvertently referred to F. C. Wasley (2½ Douglas) as a trade member of the English team in connection with the above trial. As a matter of fact, Mr. Wasley is distinctly a private owner, his profession being that of a dental surgeon in Bristol and district.

### A New Venture.

It will come as a surprise to many to learn that W. F. Newsome, the well-known Triumph rider, will shortly resign his position with the Triumph Co., in order to open a motor cycle garage and agency in the East of London, in partnership with R. Fletcher. Everyone will wish the pair success in their new venture.

### Mont Ventoux Hill-climb. British Competitor Second.

The results of this French climb, held on the 11th, are:

	m. s.
1. Perrin (Peugeot) ... ..	26 43½
2. Vernon Taylor (Rudge-multi) 28 21½	
3. Dalny (Magnat-Debon) ... 28 53½	

In the lightweight class two Terrots were first and second. The winner of this class making the excellent time of 25m. 15s. It is only fair to state that the French machines were of a distinctly racing type. The record is 25m. 40s. made on a large twin-cylinder machine.

### 1913 Models.

The A.J.S. twin-cylinder sidecar machine of 1913 will have an engine of 74 x 84 mm., and three speeds instead of two. The wheelbase will be lengthened a matter of 2in., but the present style of transmission will be retained. The front forks will be of a stronger pattern, and a system of mechanical lubrication and an internal brake will probably be adopted.

The Premier Cycle Co., Ltd., who have for some weeks had a three-wheeled cyclecar under test, have decided to market a light four-wheeled vehicle, which will make its appearance in a week or two. The same company also have a new two-speed counter-shaft gear under test. It is expected to make its first appearance at the Olympia Show.

### Suse-Mont Cenis Hill-climb.

In this Italian event, contested on the 11th, riders of Motosacoche machines were first, second, third, and fourth in class one, 334 c.c. In the 500 c.c. class a Della Ferrara was first, and S.I.A.M.T. second. Fastest time 23m. 24½s.

### Six Days' Trials Notes.

The failures on less significant hills on Monday forecast an exciting day at Porlock next Saturday.

A. E. Catt claims to be the only competitor who is not carrying a spare belt, inner tube, or sparking plug.

A weak point of the regulations is that a competitor may make up lost time in case of trouble. This is leading to scorching after an involuntary stop.

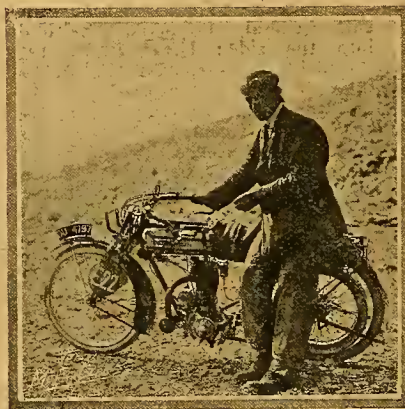
Few will forget the ride over Dartmoor on Monday afternoon in the teeth of a howling gale, with rain coming down pitilessly.

So many entries having been received, the last man leaves after 10 o'clock, consequently he has to finish in darkness. This has led to much grumbling, as some of the passenger machines have to light up each night, and, to a stranger, night riding at 20 m.p.h. on the narrow and tortuous roads of Somerset is not to be recommended.

Forty-seven sets of tyres are running in the trials, entered by the Palmer Tyre Co. (3), Rom Tyre and Rubber Co. (5), Hutchinson Tyre Co. (28), Stelastec and General Syndicate (4), Wood Milne Co. (2), Leicester Rubber Co. (2), and J. Pedley and Son (3).

Practically every known combination of rubber studded, steel studded, and ribbed treads are in use.

The Service Co. entered a ¾in. Service leather belt, and J. Pedley and Son three belts, ¾in., ¾in., and 1in.



Vernon Taylor and his Rudge Multi on the summit of Mont-Ventoux on Sunday last.

### Motor Cycle Taxation.

In our last issue we pointed out that a very important legal decision regarding the use of motor cycles for trade purposes would be decided at Barnsley on the 9th inst. The case, was duly heard, Mr. S. Neuman, solicitor, Bradford, appearing for the Auto Cycle Union, and Mr. McGrath, Yorkshire West Riding Council, for the prosecution. After formal evidence had been given and after arguments, the justices found that the defendant's (Taylor of Skelmanthorpe) motor cycle "had not been constructed or adapted solely for the purpose of business," and fined him 10s. and costs.

It is possible that the Auto Cycle Union will appeal against this decision.

### Racing and Records at Glasgow.

At the Celtic Sports, Harry Martin attacked records for the Parkhead track on Saturday last. Off the mile standing start he knocked a second, bringing the time down to 1m. 14½s., while the three miles flying start he reduced by nine seconds, setting up the track record of 3m. 15½s. Martin rode his 2½ h.p. Martin-J.A.P., and an interesting event was the pursuit race between him and A. H. Alexander on a 2½ h.p. Douglas. The riders started on opposite sides of the track, and the race was for eight laps, or until one rider overtook the other. Alexander got away well, but Martin steadily overhauled him when once he got going, and passed in 2m. 34s., a result which was repeated in the second match.

### The French Grand Prix for Motor Cycles.

We have already announced that S. L. Bailey (Douglas) and Ivan B. Hart Davies (Triumph) have entered for the Grand Prix de France on the 25th inst. Since then a Triumph team has been arranged, the riders being H. Lister Cooper, W. F. Newsome, and H. Grahame Fenton. F. W. Barnes will also drive an 8 h.p. side by side valve Zenith-Jap with sidecar, P. Weatherill as passenger. F. C. North is another probable entrant on his 3½ h.p. Ariel, which he has tuned up to do 65 m.p.h. regularly.

The first sidecar entered will be driven by the president of the club, M. Chartier-Desvarennnes, who has entered a 7.9 h.p. Indian and sidecar.

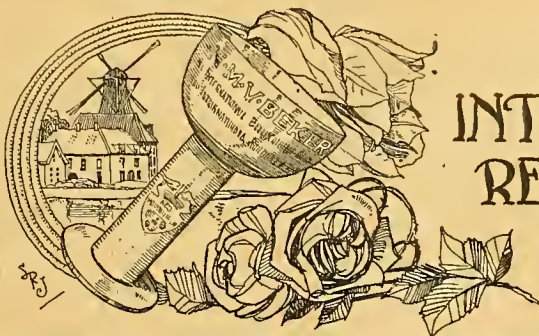
The second is an 8 h.p. Matchless, which will be driven by a gentleman well-known to English riders, Mr. Melano, recently manager in London of the Hutchinson Tyre Co.

The Lyons M.C. will send their two best riders, De Baume (René-Gillet) and Vache (Magnat-Debon).

As regards the French riders, four René-Gillets and two more Triumphs have been entered. One of the Triumphs will be ridden by Gabriel.



# ENGLISH =DUTCH



# INTERNATIONAL RELIABILITY TRIAL

## With the British Competitors in the Netherlands.

**T**HE first international reliability test has been won and lost. Certainly it was not due to the weakness of the whole of the eighteen British competitors that the cup must remain in Holland, for whereas seventeen lost twenty marks collectively—eleven less than the Dutchmen—one English rider alone lost forty-three marks, and so it is easy to explain our downfall. It would be idle to hide the fact that the Englishmen expected to win easily, and all were surprised at the regular running of the opposing team on their F.N.'s, Eysinks, N.S.U.'s, Vulkaans, and Phonobiles. The Dutchmen thoroughly deserved their victory. They recorded fifteen non-stop runs compared with the British team's thirteen. Some consolation to Englishmen is derived from the fact that a Rover, James, and Douglas, appeared in the Dutch team.

### An Enjoyable Trip.

The outing proved most enjoyable. Saturday evening, the 3rd inst., saw over forty competitors and friends at Harwich watching with breathless anxiety their machines being swung aboard the *Copenhagen* in an open-ended cage, but nothing more serious than bent footrests and guards was the outcome of the crossing. Everyone admired the enthusiasm of the officials of the Dutch Motor Cycle Club committee, who rode from Amsterdam and were in waiting at the Hook to welcome their English guests at 5 a.m. Enthusiasm, in fact, characterised the whole of the arrangements. There was no such thing as too much trouble, the Englishmen were never left without a guide, there were

sufficient functions to keep everyone interested, and that is why we returned with such appreciation and respect for the hospitality of our Dutch friends. It took



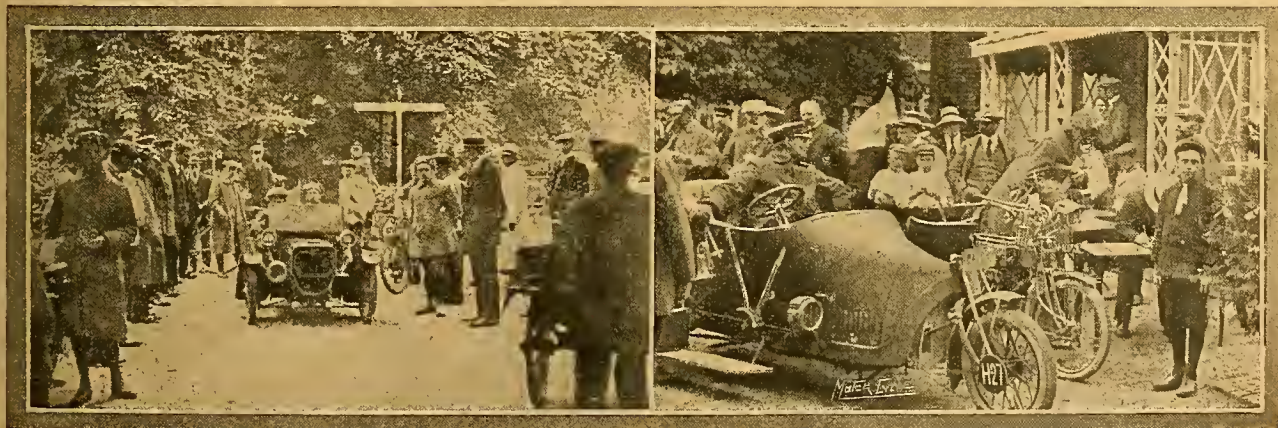
A SCENE IN MARKEN.

F. C. Wasley, who would make a fine Dutchman, is seen posing with two Dutch peasant girls.

nearly two hours to trans-ship the machines and have them passed by the Customs officers, what time a cinematograph operator was busy.

After breakfast in the Hotel America, Mr. toe Laer, the president, headed the long procession of riders, and away we went for Scheveningen, the well-known bathing place. But the roads! We were all expectant of macadam surfaces which never came. Dutch roads are narrow and twisty, whilst the surface is composed of bricks very similar to tram setts. Holes deep enough to allow three or four of the bricks to be laid flat side by side existed every fifty to sixty yards, and so, instead of the Englishmen gazing around to study the scenery, as they are accustomed to do at home, all attention had perforce to be concentrated on the road to avoid a fall. Twenty miles per hour on such roads is ample. On this run we had our first glimpse of Holland. The scenery has an attractive and unique character all its own. It would be difficult to adequately describe the beauty of the lowlands, for the dykes, the windmills, the old-world costumes of the peasant girls were all so unique and quaint. It was this entire change of conditions that impressed the English visitors so much.

The visit to the Hague and Scheveningen, the fashionable sea-bathing place, was much enjoyed. After luncheon in the Kurhaus, the party dispersed in various directions to see the sights. In the afternoon, the competitors were kindly invited to tea at the Palace Hotel by Mr. and Mrs. Robt. R. toe Laer, where the party was photographed, and in the evening a move was made for Amsterdam (40 miles) *via* den Deyl, Haagsche Schouw. Oegstgeest. Hillegom. Heemstede, and Haarlem. The roads



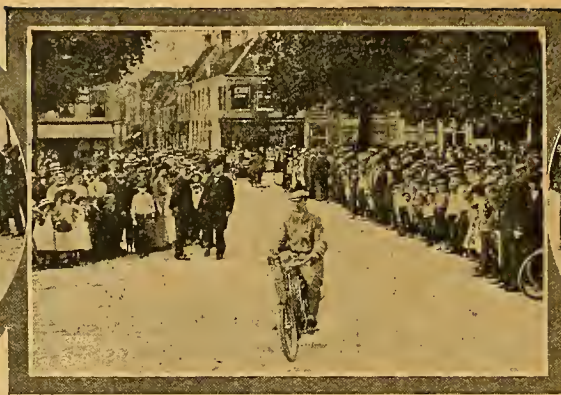
C. W. Wilson (Morgan runabout) leaving the first check at Soestdijk

Competitors signing the checking sheet at Apeldoorn. The Coronamobil (a three-wheeled cyclecar) in front, a four-cylinder F.N. in the background.





Arriving at Apeldoorn for the luncheon stop.  
A Phanomobile followed by the Clyno.



Arriving at the last check in Utrecht Market Place.



A group of reserve riders starting.

still caused much discomfort and severely tested the machines. Our photographer broke the frame of his sidecar, one of Applebee's rear stays broke (he was carrying a third passenger on the carrier), and V. Taylor was seen with his cylinder off. Sundry bolts and nuts were found to be missing from several machines at the end of the journey.

#### A Thorough Wetting.

The entry into Amsterdam was not a dignified one, for it simply poured with rain. The competitors' machines were now filled with petrol and oil and locked up for the trial on Monday.

The rain-soaked riders requiring so long to change, the official dinner in the American Hotel, Leidscheplein, was unfortunately late, but the arrangements for this brilliant function were splendid. The majority of the representatives of both international teams were present, Mr. toe Laer occupying the chair, and welcoming the English guests. Speeches were in English and afterwards translated into Dutch. The respective captains, Messrs. Cooper and Pratt, appealed to the men to do their best and ride carefully and cautiously. In a subse-

quent speech by Mr. A. Citroen, the hon. secretary, a plaque of honour, in silver, and suitably inscribed, was presented to Mr. Geoffrey Smith (*The Motor Cycle*) in recognition of his services in connection with the arrangements for the trial in England. Suitable acknowledgment was made. It was after midnight when the competitors retired, and they were early astir, for at 8.0 a.m. the trial commenced.

#### The Trial.

The roads were little, if any, better. It was bump, bump, bump, and every 200 yards of comparatively smooth road was counterblasted by a jar sufficient to cause one's vertebrae to dither. Certain it is that bricks do not cause so much dust. Railway crossings are numerous in Holland. They are not guarded by swinging gates, but by a sort of collapsable gate which lifts vertically. To see it descending as one approaches the crossing is reminiscent of the Sword of Damocles. The first check at Soëstdijk caught a number of riders much too early, and in sight of the check balancing feats were the order. Practically everybody was too early, and as none of the milometers agreed with the

distance on the route card, a re-measurement was made, with the expected result, that it was found to be short, and two minutes were consequently allowed every competitor at this point. Unfortunately, three leading English contestants were outside this amount, and lost marks thereby. They were W. W. Douglas (Douglas), four marks; F. W. Barnes (Zenith sidecar), one mark; and F. Smith (Clyno), three marks. Slowing down to lose time, C. M. Down accidentally stopped his engine—bad luck indeed.

The lunch proved somewhat of a scramble. Here F. C. Wasley (Douglas) failed to put in an appearance until after the timekeepers had left, and lost the maximum marks (forty) in consequence. He experienced magneto trouble, the fibre of the contact breaker having worn so much that the platinum points would not break. The hopes of the British team were shattered thus early.

Public interest in the trial was most marked; at every street corner crowds assembled to witness the teams file through, and frequently cheers were raised. The ubiquitous boy scout pointed the way at all doubtful points. The regularity with which the Dutch com-



THE RESTART FROM APELDOORN AFTER THE LUNCHEON INTERVAL.

The first team : G. Smith (Humber), N. Ruyter (N.S.U.), and H. Dieters (Phanomobile.)

No. 4 team : E. Fischer (Eysink) and F. W. Barnes (Zenith).



**English-Dutch Reliability Trial.—**

petitors were running caused much surprise and comment; occasionally they would be observed repairing tyres, which did not involve loss of marks, and only three experienced trouble.

**Holland and its Hills.**

At De Steeg (81) riders dismounted to sign the checking sheet, then on again to De Grebbe (104½) for tea. De Grebbe is one of three hills in Holland. Its gradient had been kept secret, so the competitors were somewhat curious to know the worst. A standing start was made, and away the competitors were sent every twenty seconds to climb, not 1 in 4, but a gradient of 1 in 14, which most of them did in true English style! D. Croll, of the Dutch club, stopped his road wheels owing to a slipping clutch. Shortly after this, probably the prettiest stretch of the whole run was encountered. V. Taylor was passed by the roadside; his trouble remains a mystery. He was reported to be inflating a hard tyre. An unlucky experience befell Reg. Holloway hereabouts. His carburettor commenced flooding, and at last choked the engine. Pedalling his hardest, he kept the machine on the move whilst he unscrewed the float chamber cover, but had to give in at last and investigate matters. His trouble was a punctured float, which he adjusted temporarily and continued. It was generally agreed among the competitors that the rough course tested the machines as severely as two or three long days' runs over English roads. People turned out in thousands at Utrecht, where for the twentieth time during the trip the British National Anthem was played by a band.

**Impressions of the Final Stage.**

A few more miles of tramlines, several more railway crossings with the metals an inch or two above the road level, bridges approached at right angles, clumsy waggon drivers who would not heed the rule of the road, are recollections of the last stage of the journey. F. Smith (Clyno) punctured, and changed a wheel, which at first worried the officials, as they had not provided for detachable wheels on motor cycles. Another unfortunate Britisher was F. W. Barnes, who punctured his back tyre, but con-



R. G. Mundy (3½ h.p. three-speed Quadrant), who won a silver medal in the Dutch Trials as a reserve and is riding the same machine in the Six Days' Trials.

tinued on the rim. Near the end one of the cylinders of G. Smith's twin Humber commenced misfiring, but the machine was kept going on one cylinder for two or three miles, and by holding the terminal close to the top of the plug so that a spark gap was obtained, the carbon was burned away.

**Fine Performance of the Trade Team.**

All the trade team rode consistently and well, eight of nine accomplishing non-stops, and losing a total of 11 marks; The Dutch trade team lost 19 marks. The British amateurs had not such a good record, only five making non-stops, the total lost marks being 52; the Dutch amateurs lost 12 marks.

A big crowd assembled at the finish, the Darraq Palace, Stadhouderskade, Amsterdam (158½ miles). Subsequently the results were announced as follow:

WINNERS OF THE INTERNATIONAL TROPHY (presented by Messrs. A. Citroen and J. Ferwerda).—HOLLAND, marks lost 31.

**DUTCH TEAM.**

A silver medal was awarded for maximum number of marks.

N. Rayter (3½ N.S.U.), bronze medal.  
H. Dieters (6 Phonobile), silver medal, non-stop.

Hugo Smit (3 N.S.U.), b.m., n.s.  
E. J. E. Mass (5-6 F.N.), b.m., n.s.  
D. Croll, jun. (7 Indian sc.), b.m.  
E. Fischer (3 Eysink), b.m., n.s.  
P. N. Jelsma (2½ Eysink), s.m., n.s.  
D. de Roon (5-6 F.N.), b.m., n.s.  
F. Posno (3½ Rover), s.m., n.s.  
Jacq Fonck (2 Vulkaan), b.m., n.s.  
J. L. Geidt (6 Cyclonette), b.m., n.s.  
G. T. Arends (2 Vulkaan), s.m., n.s.  
D. v. d. Mark (2½ F.N.), s.m., n.s.  
J. W. Boots (6 Coronamobil), b.m.  
J. H. Nieuwenhuis (2½ Douglas), s.m., n.s.

Firma Eysink (2½ Eysink), s.m., n.s.  
C. Witteveen (3½ James), s.m., n.s.  
H. Daalmeyer (6 Cyclonette), s.m., n.s.

**ENGLISH TEAM.****PRIVATE OWNERS.**

Geoffrey Smith (2½ Humber), marks lost, 0, s.m.  
C. Maurice Down (2½ Enfield), 3, b.m.  
F. C. Wasley (2½ Douglas), 43, —.  
Vernon Taylor (3½ Rudge), 3, b.m.  
Fred Dover (3½ Premier), 0, s.m.  
E. Lester (3½ P. and M.), 0, s.m.  
W. Cooper (3½ Bradbury), 0, s.m.  
C. W. Wilson (Morgan), 0, s.m.  
A. E. Uffleman (6 Rex-Jap), 3, b.m.

**TRADE RIDERS.**

W. W. Douglas (2½ Douglas), 4, b.m.  
R. Holloway (2½ Premier), 3, b.m.  
Sam Wright (2½ Humber), 0, s.m.  
W. F. Newsome (3½ Triumph), 0, s.m.  
W. Pratt (3½ P. and M.), 0, s.m.  
J. H. Slaughter (3½ New Hudson), 0, s.m.  
Frank Smith (5-6 Clyno sc.), 3, b.m.  
F. W. Barnes (6 Zenith sc.), 3, b.m.  
F. A. Applebee (3½ Scott sc.), 0, s.m.

Three special cups were offered in connection with the trial. Messrs. Phelon and Moore's Cup for the best performance of a Dutch private owner resulted in a tie, and Messrs. Jelsma, Arends, Nieuwenhuis, Dieters, and Daalmeyer will compete again.



Negotiating one of the numerous bends. A Dutch boy scout is seen pointing the way.



A general group of competitors, English and Dutch.



At the foot of De Grebbe, the "test" hill which amused the British riders.



**English-Dutch Reliability Trial.**

The Cycle and Motor Cycle Manufacturers' and Traders' Union silver cup for the best performance of an English private owner may also be re-run in England, as five competitors lost no marks. They are Messrs. G. Smith, F. Dover, E. Lester, W. Cooper, and C. W. Wilson.

Likewise *The Motor Cycle* cup for the trade resulted in a draw, Messrs. Pratt, Newsome, Slaughter, and Applebee of the English trade team, and Messrs. Van der Mark, Eysink, and Witteveen, jun., of the Dutch trade team, qualifying for the award. Silver medals will be presented to each rider, and the destination of the cup settled in 1913.

**The Reserve Men.**

A number of chosen riders accompanied the teams as reserves, and, not being called upon, competed in a special section. Those who won silver medals for completing the course to schedule time are:

- R. Lord (6 h.p. Rex sidette).
- R. G. Muudy (3½ h.p. Quadrant).
- F. C. North (3½ h.p. Ariel).
- F. A. Hardy (2½ h.p. Norton).

Seymour Smith (3½ h.p. Norton).  
J. C. Bennett Mitchell (2½ h.p. Douglas).  
Eight reserve Dutch riders also won medals.

All the party met for dinner at the Krasnopolsky, Warmoesshaat, the same evening, and next day the much looked forward to boat trip to Volendam and Marken was enjoyed, a special steam boat being chartered. The band on board played the National Anthem as the steamer moved off, and as the boat approached the lock entry to the Zuider Zee a cornet player again obliged. Another anthem much in evidence was the British war-cry, "We're here, because we're here," etc.

The little fishing town of Volendam with its picturesque inhabitants in national costume was especially attractive to the English party in particular. The children especially looked most quaint in their old-world garb. A shop with Dutch clothing and clogs in the windows was too great a temptation for Dover, Slaughter, and Wasley; their example was followed, and the shop taken by storm. The men emerged one by one attired in clogs and huge trousers,

and seemed most concerned because they could not purchase a new pair of bags with patches on!

At lunch the English teams were the guests of the Dutch Touring Club, Mr. Fochema occupying the chair.

On the way back to Amsterdam the Isle of Marken was visited, and if the stay had been prolonged all money would have been spent, so anxious were the party to take back some souvenir of this delightful outing.

**Dutch Officials Entertained.**

In the evening the international trial was seen on the cinematograph at the Cinema Pathé. The film was not first-class, but it was cheered to the echo. Next morning, Wednesday, some explored Amsterdam, whilst another party, piloted by Mr. Citroen, started for Scheveningen. All met at the Hook about eight o'clock, and again getting the machines aboard, Messrs. Citroen and Ferwerda were entertained by the English riders to dinner, amid expressions of appreciation of the hospitality, kindness, and untiring attention of the Dutch Club officials to render the outing a thoroughly enjoyable one.

## CLUB NEWS.

**Torbay and District M.C.C.**

The second annual open hill-climb will take place on Saturday, September 14th.

**Essex M.C.**

The twenty-four hours' ride to York and back will take place on the 30th and 31st inst. Entries close on the 26th inst. All information can be obtained from Mr. H. Fuller, 51, Putney Road, South Woodford.

**Cork and District M.C.C.**

The result of the 100 mile reliability is as follows: 1, C. G. Pohlmann (3½ Rudge and sc.); 2, P. A. Egan (3½ Bradbury); 3, W. Sheehy (3½ Triumph). Pohlmann holds the New Hudson cup for a year.

**Derby and District M.C.C.**

A stiff course in North Staffs was selected for the Henmore Cup competition. Results: 1, H. Baker (3½ Triumph); 2, A. Ainsworth (3½ Rudge); 3, E. Horton (3½ Horton). There will be a hill-climb on the 17th inst.

**Glasgow M.C.C.**

A hill-climb was held on the 10th inst. The formula used was  $\frac{W}{C \times T}$ . The hill chosen was Garshake, near Dumbarton, a severe gradient without bad bends and of good surface. A. McCulloch (3½ h.p. T.T. Triumph) made fastest time. Result:

	Fig. of merit.
1. T. L. Rankin (2½ Singer) ... ..	100
2. R. Jones (2½ A.J.S.) ... ..	96
3. Graeme Taylor (3½ Rudge) ... ..	84

**Herts County A. and Ae.C. (Motor Cycle Section).**

The members' hill-climb, held on a hill near Northaw, on the 10th inst., resulted as follows:

**Division I.—Decided on time only.**

Class I. (machines up to 350 c.c.): J. Dudley (2½ Hobart), 22s.

Class II. (machines up to 500 c.c.): E. A. Colliver (3½ Zenith), 19½s.; H. F. Barge (3½ Rudge), 20½s.

Class III. (machines up to 750 c.c.): E. A. Colliver (3½ Zenith), 19s.

Class IV. (unlimited): E. A. Colliver (3½ Zenith), 19s.; G. S. Carter (5 Matchless), 20½s.

Division II.—Decided on formula, open to amateurs only.

Class VI. (up to 350 c.c.): Miss Walker (2½ Hobart).

Class VII. (machines between 350 and 500 c.c.): H. F. Barge (3½ Rudge); E. C. Jarvis (3½ Triumph).

Class VIII. (machines between 500 and 1,000 c.c.): C. M. Down (7 Indian).

**Mersey M.C.**

An open reliability trial will take place on the 31st inst. over a 200 miles course through Cheshire, Staffordshire, Derbyshire, and Lancashire.

**Finsbury Park C.C. (Motor Cycle Section).**

A hill-climb took place on the 5th inst. at Whitchurch, in Oxfordshire. The formula used was that recommended by *The Motor Cycle*,  $\frac{C \times t^2}{W}$ . Results: 1, R. Gordon Barrett (3½ h.p. Rudge); 2, C. F. Revell (3½ h.p. Triumph). The first named also made fastest time.

**Streatham and District M.C.C.**

The open hill-climb will be held on September 7th, within twenty-five miles of South London. There will be four classes for touring machines (with maximum weight limit), three classes for any machines, also classes for sidecars and cyclecars. The formula will be that recommended by *The Motor Cycle*,  $\frac{C \times t^2}{W}$ . In addition, the Greig Cup will be competed for by touring machines with variable gears up to 1,000 c.c. under the A.C.U. formula. Full particulars can be obtained from Mr. B. I. Simmons, hon. treasurer, 33, Poynders Road, Clapham Road, S.W.

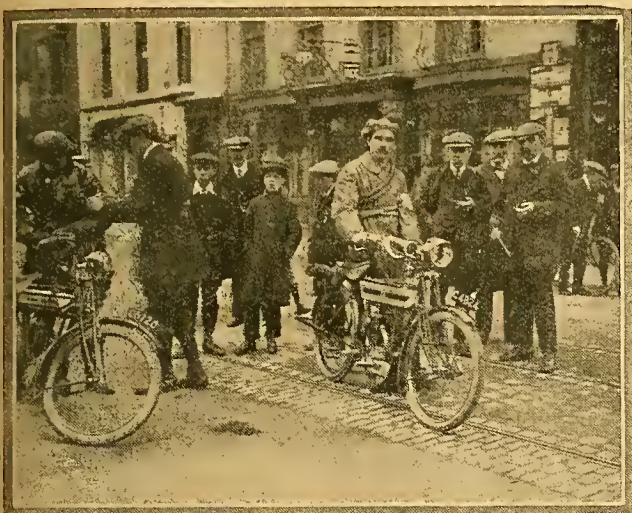
**Dublin and District M.C.C.**

The markings and awards in connection with the reliability trial held from Dublin to Glengarriffe and back on the August Bank Holiday and succeeding day are as follows. G. Roche and F. J. Walker tie for the cup for the best performance, both gaining full marks all through, and will run off the tie over the sidecar trial course on August 31st. The holder, T. J. Dunphy, was knocked out on the first day of the trial by magneto troubles:

	Marks gained.		
	Open	All	
	controls.	controls.	
G. Roche (3½ Rover) ... ..	200	200	Tie for first
F. J. Walker (3½ Rudge) ... ..	200	200	place
T. E. Greene (3½ Rudge) ... ..	200	198	Gold medal
J. Doleman (3½ Rudge) ... ..	200	194	" "
T. Wood (3½ Ariel) ... ..	200	192	" "
R. Walshe (3½ Calthorpe) ... ..	200	191	" "
H. T. Carroll (3½ Rex) ... ..	200	181	" "
V. J. Farrell (3 Triumph) ... ..	198	197	Silver medal
J. McArevey (3½ Rudge) ... ..	198	194	" "
W. H. Greene (2½ A.J.S.) ... ..	198	191	" "
T. D. Rollins (5-6 Clyno sc.) ... ..	189	160	" "

and £3 3s. for best sidecar performance





DONCASTER AND DISTRICT M.C.C. RELIABILITY RUN.

T. Drew (Triumph) and L. Bassett (Rudge) being started on the way to Whitby.

**Cumberland County M.C.C.**

The following revised result has been issued in Class IV.: L. S. Parker ( $3\frac{1}{2}$  Scott), time 34 $\frac{1}{2}$ s., takes third place with a figure of merit of .29, instead of B. Jeffreys (6 Bat), figure of merit .28.

**Cork and District M.C.C.**

A reliability trial took place from Cork to Dungarvan and back, a distance of 100 miles, on the August Bank Holiday. Eighteen riders took part in the competition, six of them having sidecars attached to their machines. The weather conditions were for the most part unfavourable. The chief prize of the competition was a challenge cup offered by the New Hudson Cycle Co., which was won by C. G. Pohlmann ( $3\frac{1}{2}$  h.p. Rudge and sidecar). The prize presented by the Hutchinson Tyre Co. was won by P. A. Egan ( $3\frac{1}{2}$  h.p. Bradbury), and the Egan Challenge Cup for the best performance by a novice was won by W. Sheehy ( $3\frac{1}{2}$  h.p. Triumph).

**Canterbury and District M.C.C.**

A hill-climb was held on Boxley Hill, Maidstone, on the 25th ult. The *Motor Cycle* formula,  $\frac{W}{C \times T^2}$ , was used in all classes except the slow climb. T.T. machines were penalised + 1 $\frac{1}{2}$ s.

CLASS I.—Any type of machine. Pavillet Cup Competition.

Place.	Rider and machine.	Time.	Result on formula.
1.	B. Martin ( $3\frac{1}{2}$ T.T. Rudge) ...	29 $\frac{7}{10}$ + 1 $\frac{1}{2}$	682
2.	G. Crump ( $3\frac{1}{2}$ Rudge) ...	34 $\frac{1}{5}$	605
3.	S. D. Timson ( $3\frac{1}{2}$ T.T. Rudge) ...	34 + 1 $\frac{1}{2}$	562

CLASS II.—There being no entries for this class, a class was run at the end of the day for those who had never won a prize for a fast climb, the day's fast climb winners also barred.

1.	G. Poxon ( $3\frac{1}{2}$ Bradbury) ...	34 $\frac{1}{5}$	534
2.	G. Buley ( $3\frac{1}{2}$ Triumph) ...	40 $\frac{2}{5}$	466
3.	A. Letchworth ( $3\frac{1}{2}$ T.T. Bradbury) ...	34 $\frac{7}{10}$ + 1 $\frac{1}{2}$	415

CLASS III.—Any type of machine, for members who have never won a prize in a club hill-climb.

1.	P. Kingsford ( $3\frac{1}{2}$ Triumph) ...	38 $\frac{7}{10}$	515
2.	L. Rawlinson ( $3\frac{1}{2}$ Trump-Jap) ...	36 $\frac{2}{5}$	493
3.	G. Buley ( $3\frac{1}{2}$ Triumph) ...	39 $\frac{1}{2}$	488

CLASS IV.—Slow climb (slowest up wins).

1.	G. Poxon ( $3\frac{1}{2}$ Bradbury) ...	117 $\frac{3}{5}$	
2.	G. Crump ( $3\frac{1}{2}$ Rudge) ...	114 $\frac{1}{5}$	
3.	B. Martin ( $3\frac{1}{2}$ T.T. Rudge) ...	105	

CLASS V.—Any type of machine (standing start).

1.	B. Martin ( $3\frac{1}{2}$ T.T. Rudge) ...	38	468
2.	G. Crump ( $3\frac{1}{2}$ Rudge) ...	40 $\frac{4}{5}$	424
3.	G. Poxon ( $3\frac{1}{2}$ Bradbury) ...	42	355

Boxley Hill is rather more than 500 yards in length, and the worst gradient is 1 in 5.75.

**Essex M.C.**

A gala meeting will be held at Brooklands on the 17th inst. The following events have been arranged: Sidecar race (2 laps, about 5 $\frac{1}{2}$  miles); Short cycle race (3 laps, about 8 $\frac{1}{4}$  miles); Long motor cycle race (5 laps, about 13 $\frac{3}{4}$  miles).

**Manchester Hundred M.C.**

A hill-climbing competition will take place, for both cars and cycles, on August 25th. Hill to be chosen by committee and members apprised three or four days before day of competition. A gymkhana will be held at Hoo Green on August 31st.

**Coventry and Warwickshire M.C.**

Already a good number of entries have been received for the open hill-climb on Saturday, August 31st, and in view of the fact that hill-climbs have been less frequent of late, an entry up to the usual standard of the Coventry Club is expected. We are requested to point out that Junior T.T. machines may compete in Class IV., which is for T.T. machines up to 500 c.c.

**Hampshire v. Surrey.**

An inter-county hill-climbing contest will be held on the 28th inst. Competitors will meet at South Harting village square at 3.30 p.m.

There will be five classes, each subject to a minimum of four entries in the class, viz.: Class I.—Up to 350 c.c. Class II.—Between 350 c.c. and 500 c.c. Class III. (unlimited).—Open on formula. Class IV. (unlimited).—Open on time. Class V.—Sidecars or cyclecars.

The results, except in Class IV., will be decided on the formula:

$$\text{Figure of merit} = \frac{W}{C \times (1 - 2t)}$$

where: W=Total weight of machine and rider in lbs.

C=Capacity of engine in c.c.

T=Time of ascent in seconds.

t=Time of fastest ascent of the day.

The winning side will be the one whose best twelve performances on formula show the better average figure.

**Harrogate and District M.C.C.**

The petrol consumption trial which, in the first place, was abandoned owing to the terrible weather, was run on Thursday evening last in wet and windy weather, which somewhat interfered with the entries; nevertheless two classes were run. Results:

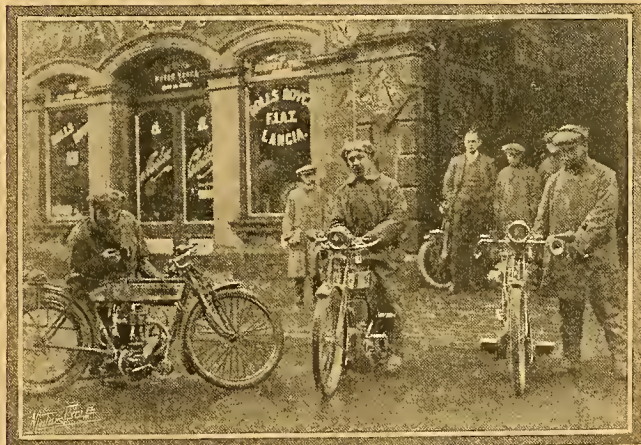
CLASS I.—For Solo Machines.

	Fig. of merit.	m.p.g.
1. W. E. Grange ( $3\frac{1}{2}$ Bradbury) ...	11.8	100.8
2. T. C. Atkinson ( $3\frac{1}{2}$ Triumph) ...	11.7	154.6
3. W. Fawcett ( $2\frac{1}{2}$ A.J.S.) ...	9.4	132.5

CLASS II.—For Passenger Machines.

1. C. A. Nettleton ( $3\frac{1}{2}$ New Hudson sc.)	12.0	70.3
2. G. Hill ( $3\frac{1}{2}$ Scott sc.) ...	9.3	76.06
3. W. Atkinson ( $3\frac{1}{2}$ Scott sc.) ...	6.8	50.4

The course was a give and take one of twenty-nine miles. The formula used was weight carried divided by petrol used; artificial weighting was allowed.



NEWCASTLE AND DISTRICT M.C.C. TWO DAYS' TRIAL.  
T. Cooper (Triumph), G. W. Roper ( $2\frac{1}{2}$  h.p. A.J.S.), and S. Dodds (Singer), waiting for the word to start on the second day at Harrogate.





## WEAR OF BIG END BEARINGS.

FROM readers criticisms in the correspondence columns of *The Motor Cycle* there appears to be a considerable amount of interest engendered on the above subject, showing there is ample room for improvement in this direction. The solution to this problem appears to the writer to be not very far distant for the following reasons:

It may be taken for granted the excessive wear on any bearing is occasioned by, first, the excessive load in relation to the area of contact of the frictional surfaces squeezing out the film of separating oil; secondly, the quality of metal used for such surfaces.

One factor that influences the excessive load is the hammering action that takes place owing, not only to the explosive force behind the piston, but also to the reciprocating action of the piston and connecting rod.

Perhaps it may interest manufacturers and users to know that I have in my possession a De Dion engine of 1 3/4 h.p. that has run on the road a distance of some 28,000 miles, and during the whole of that time has run with the same bush in the big end of the connecting rod, no adjustment of any kind having been made. The secret, however, lies in the fact that the area of contact of this bearing is nearly three times greater than many engines of the present day of considerably more power.

Referring again to the reciprocating action of the piston and connecting rod assisting in the excessive wear of the bearings, it must be obvious, if we can make these parts lighter, we are not only going to reduce the wear but also increase the speed.

### A Light Steel Piston.

Some little time ago the writer took the trouble of making a mild steel piston out of the solid, and it weighed, when completed, some nine ounces less than the one it replaced. This alone added some four miles an hour to the speed of the machine.

Now mild steel pistons have proved in many instances a failure, because at high temperatures they do all sorts of things, but let those who have failed try the following tip: Case-harden the piston before grinding for the final fitting to the cylinder. Naturally, it must not under any circumstances be quenched so as to make it hard. The process has two very necessary results—it consolidates the metal and prevents warping at high temperatures, and also, what is equally important, it adds that percentage of carbon to the steel necessary for its wearing qualities. The piston mentioned above was treated in this way and has run some 3,100 miles, and shows no sign of wear and has given every satisfaction.

One advantage that follows from a piston made of mild steel is that it is unnecessary to make any fixing for the gudgeon pin. The pin can be a very tight fit, as there is very little fear of cracking the piston—the only necessity is that in hammering in the gudgeon pin care should be taken that the piston is not bent in any way, and for this purpose a jig is necessary.

It will be noticed that this also saves a little more weight.

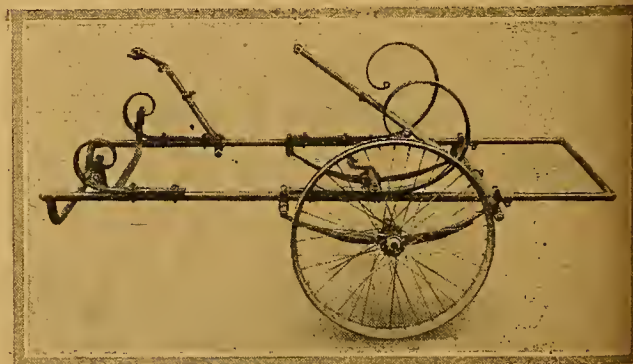
So much for lightening the reciprocating parts. We now come to the other question, viz., the material of which the frictional surfaces of the connecting rod are made.

The well-known firm of Vickers, Sons, and Maxim lately introduced a new metal which they call Duralumin, and state its strength is that of steel, and weight very little more than aluminium, and in their announcement they show an illustration of a forged connecting rod of this material, and if this metal will stand the heat of an air-cooled engine it seems to me ideal for the purpose.

In a most interesting presidential address given by L. A. Legros, M.I.M.E., before the Institution of Automobile Engineers on October 11th, 1911, he referred to the improvements in materials of construction, and stated "that there were, however, certain possibilities in the case of steel which may yet have to be considered. It has been found that metallic tantalum has very great hardness and power of resisting wear by abrasion. It is recorded that an attempt to drill a tantalum sheet by means of a diamond drill run at 5,000 revolutions per minute for seventy-two hours resulted in a penetration of the metal to the extent of 1/4 mm. only, and was accompanied by considerable wearing of the diamond tool. Now if we suppose that the surface of a prepared piece of steel could be treated with tantalum in the same way as it can be treated with carbon in the ordinary case-hardening operation, and that, in fact, it could be superficially coated with a firmly adhesive coating of metallic tantalum, it should be possible to reduce any bearing surfaces so treated to dimensions hitherto unapproached under the heaviest loading."

This appears to be a peep into the future, but I am not altogether sure it is very far distant. At any rate, I think what has been written above will show that makers are much alive to possible improvements.

LEONARD R. JONES.



Example Motor Manufacturing Co.'s sidcar frame showing cranked axle and quarter elliptical frame springs. (See page 898, last week's issue.)



**For your information.**

**In the Scottish Reliability Trials**

**more competitors used**

# DUNLOP TYRES AND DUNLOP BELTS

**than any other individual make.**

**For your consideration.**

**Riders of DUNLOP TYRES or DUNLOP BELTS gained  
15 Gold Medals, 6 Silver Medals, 3 Bronze Medals.**

**The conclusion.**

**No other tyre, no other belt, no other combination can equal**

## DUNLOPS.

**The DUNLOP PNEUMATIC TYRE CO., LTD., Aston Cross, BIRMINGHAM;**

**Alma Street, COVENTRY.**

**BRANCHES: London, Nottingham, Manchester, Newcastle, Bristol, Leeds, Liverpool, Glasgow, Dublin, Belfast.**

## WHAT I SAY

GENTLEMEN,

I have introduced several designs and improvements that have set the fashion in motoring. I have given to motor cyclists the true Two-Jet automatic carburetter. I have been experimenting and making carburetters for fifteen years, and I do not believe it is possible to make an automatic carburetter as good as mine by the use of a single jet; the reason is obvious—no carburetter is any good that does not provide a fierce rush of air past the jet; if you have this fierce rush past a single jet it will draw far too much petrol out. In the Binks this fierce rush is past a tiny jet which gives you an instant start, a slow pull, a "tick" round, then when you want more power you automatically direct most of this rush of air past a larger jet, and as the suction increases on the large jet it automatically decreases on the small one, giving you a perfect mixture at all speeds. On any decent machine on which it is fitted you can saunter along dead slow and get the most violent acceleration by slamming the throttle wide open. Just consider my magnificent collection of testimonials, every one unsolicited, from the Aristocracy, Clergymen, Doctors, Lawyers, Racing Men, and Tourists. There is an automatic boom coming on; do not be let down by experiments. Profit by my experience. Get the best, viz., the Binks Two-Jet automatic, it is the only way.

Yours truly,  
C. BINKS.

## BEWARE OF IMITATIONS.

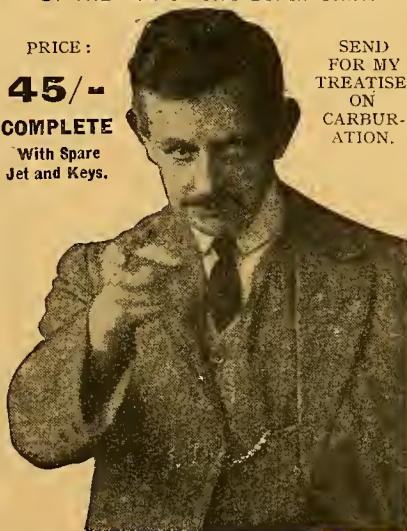
FICTITIOUS, SECOND-HAND,

"ALMOST NEW"  
**BINKS CARBURETTERS.**

A TICK ROUND, VIOLENT ACCELERATION,  
INSTANT STARTING,  
GREAT FLEXIBILITY AND POWER.  
BY THE USE OF ONE LEVER ONLY.

PRICE:  
**45/-**  
**COMPLETE**  
With Spare  
Jet and Keys.

SEND  
FOR MY  
TREATISE  
ON  
CARBUR-  
ATION.



**ADDRESS ME PERSONALLY,**  
**C. BINKS, LTD. PHENIX WORKS, ECCLES**  
(NR. MANCHESTER).

## WHAT USERS SAY

LANCASTER, April 17th, 1912.

Dear Sirs,—The carburetter arrived by post this morning, and I put it on at once, and have to-day had the most enjoyable run I have ever had on my 8 h.p. "Matchless." I could not believe a carburetter could make such a difference. It works most beautifully when running slowly and picks up in the most wonderful way. I put 4 jet in the pilot and have kept the 6 in the main jet, and could not wish for better results.

However, I will try various jets, and if I can make an improvement will be more than satisfied. I shall certainly recommend them to my various friends.

Believe me, yours faithfully, W. H. S.

40, West Blackhall Street,  
GREENOCK, July 26th, '12.

Dear Sir,—I am writing you to express my satisfaction with the carburetter you supplied recently for my 6 h.p. twin Rex. I have given it an exhaustive trial, and it does all you claim for it. The flexibility is such that now I can negotiate all traffic on my top gear, whereas I had to use the low before. I use a No. 3 jet in the pilot, and though not so easy to start with from cold as a No. 4, it is just the thing when running at speed, and the machine runs 24 to 30 m.p.h. on the flat without opening the main jet.

When I bought your carburetter I did not expect to find any improvement in petrol consumption, and I am surprised to find that I can average 70 miles per gall. I could not get much over 50 miles with my old carburetter. My last run of 65 miles was done at the rate of 73 miles per gall. The addition of your twisted handle makes an ideal method of control.

The silencer you supplied to my order fitted without any trouble, and the noise of the exhaust is now scarcely audible. There does not seem to be any back pressure as I cannot detect any difference in the running of the engine, whether the cut-out is open or shut.

I am recommending your carburetter to my acquaintances. Thanking you for your courtesy,  
Yours faithfully, FRANK HALL.

The originals of above, together with hundreds of others, may be seen at the works.



# WOODMILNES

## Splendid Results in 20,000 Mile Test

With already 16,000 miles completed Mr. Harry Long, who is attempting 20,000 miles on Woodmilne Tyres in six months with sidecar and passenger reports

**ENTIRE ABSENCE of TYRE TROUBLE**

Surely testimony to think about and profit by! These 16,000 miles include the English and Scottish Coast Trip with its long stretches of broken road



ent of the R.A.C. through the A.C.U. We are enabled to reproduce the permit issued to them by the Turkish Embassy, which is quite interesting, as it is written in the Turkish language. Several motorists have before attempted to reach the Turkish



### Change of Address.

The Rich Patent Detachable Air Tube Co., Crawley, has removed to larger and more spacious premises on the main London-Brighton Road.

### Motor Cycle Makers who Ride.

It is unfortunately not all makers of motor cycles who ride their machines. Messrs. W. and S. Hazlewood, of Hazlewoods, Ltd., however, are firm believers in the motor cycle as an aid to business. One of these gentlemen uses his 2½ h.p. Hazlewood lightweight for travelling in the Southern and Western counties, while the other is a director and works manager, and uses his machine a great deal. Both are heavyweights, but find the three-speed gear enables them to climb all hills.

### Scottish Trials Notes.

Of five entrants who used Pedley tyres in the Scottish Six Days' Trials, four obtained gold medals and one a silver medal. Mr. White, who obtained a silver medal, lost time owing to a broken wheel. Six entrants used Pedley belts; five obtained gold and one a silver medal, Mr. White being again the only man who lost time.

The Dunlop Pneumatic Tyre Co. claim that more successes were gained on Dunlops in the above trials than were credited to any other make. Ten gold medallists used Dunlop belts, and five gold medallists used Dunlop tyres, whilst many lesser awards in the shape of silver and bronze medals were credited to this firm.

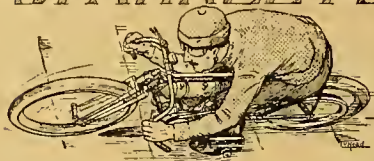
It is worthy of note that in the Scottish Trials awards three of the special prizes were awarded to riders of chain-driven machines fitted with Hans Renold chains, viz., the private owner's award to McMillan's Scott, the trade rider's award to W. Pratt's P. and M., and the team prize to the Indian team.

### A Smart Showerproof Suit.

The smart motor cycling suit illustrated is a new garment, called the Showerdust, introduced by A. W. Gamage, Ltd., of Holborn. The cloth from which the suit is made is specially manufactured for Gamages. It is, we are told, far more durable than rubber, much smarter in appearance, and more comfortable to wear. The jacket is cut easy and full, and by buttoning close up to the neck affords complete protection against dust. There are also wind cuffs in the sleeves. The overalls are made with only one fastening, which buttons on to the breeches button; while at the foot they are fitted with a broad elastic band, which goes under the boot. This gives when pulled over the boot, and holds the spats down more firmly than the ordinary leather strap.

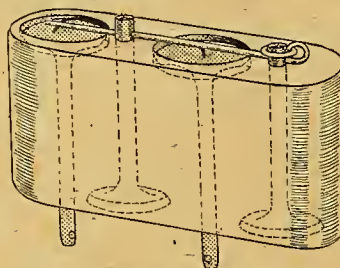


## SPARKLETS



### A Neat Valve Holder.

Mr. H. M. Carter, a Coventry rider of a Douglas, recently brought to our notice a neat wood holder for four Douglas valves—two inlets and two exhausts. The sketch is almost self-explanatory, but it may be well to point out that the valves are retained in place by a pin which passes through the valve



Wood holder for four valves.

cotter holes, the ring in the end of the pin being pressed over the stem foot of one valve which it is made to fit. The holder is one which motor cyclists who are handy with tools will probably desire to imitate.

### New Models.

1913 Precision engines will be on view at the Tollard Royal Hotel, Kingsway, from the 19th to the 23rd inst. Mr. F. E. Baker, the managing director of the firm, will be in attendance. Members of the trade are invited to present their trade cards.

### Speedometers.

We hear very good accounts of the Watford speedometer. Both the Norton Manufacturing Co. and Harry Martin and Co. have written the firm pointing out the remarkable steadiness of the indicating hand and the accuracy of the speedometer.

### Tyre Successes.

In the Sheffield and Hallamshire M.C. open hill-climb on Amber Hill, near Chesterfield, Dan Bradbury rode three different makes of machine all fitted with Clincher tyres, and obtained no fewer than three first prizes. Mr. Bradbury is the hon. sec. of the promoting club. The machines ridden were 2½ h.p. New Hudson, 500 c.c. Norton, and 560 c.c. Norton.

### Cyclecar Parts.

The New Merlin Cycle Co., Ltd., Gough Road, Birmingham, are now manufacturing component parts for cyclecars designed for 5-6 h.p., 7 h.p., and 8-9 h.p. V-type engines. These parts consist of flywheel and clutch, steering gear, differential back axle (chain drive), front axle, and channel steel chassis complete with semi-elliptical springs.

### Riding to the Butts.

The machine ridden by Arthur Fulton the King's prize winner at Bisley, is a Triumph. This speaks well for the vibrationless qualities of this make.

### The Guest Decompressor.

This device, which is made to screw into a valve cap, or, in case of sufficient room, between cylinder and tank, into the compression tap hole in the centre of cylinder, is made by the Guest Decompressor Co., 107, High Street, West Bromwich, and is extremely simple in action. It consists of a double-faced valve, which can be brought into operation by turning the knurled disc at the top. When the knurled disc is turned to the left the cam which is connected to it working against the body of the device raises the valve and prevents any gas escaping through the bottom face of the valve. To bring the decompressor into action the knurled disc is turned to the right, which leaves the valve free to act. At each compression stroke the top face of the valve is lifted from its seat and part of the charge leaks past so reducing the volume and likewise the compression. The decompressor is only intended to facilitate starting.



### Catalogues Received.

A well illustrated catalogue of the Williamson passenger motor cycles is to hand. These machines are made by the Williamson Motor Co., Cromwell Works, Earlsdon, Coventry, the engines and gear boxes being constructed by Douglas Bros., Bristol. The booklet illustrates the air and water-cooled machines, both of which are fitted with 8 h.p. twin Douglas engines of 964 c.c. The Williamson passenger motor cycles have been designed specially for sidecar work, and have chain transmission, 3in. tyres, and gear ratios of 4½ and 7 to 1. The petrol capacity is 1½ gallons, and oil half a gallon. We are informed that steady deliveries of these machines, both air and water-cooled, have been made for some weeks past.

### A Musical Horn.

The musical Testophone horn, which plays four notes in turn, the melodious sounds of which are often heard on motor cars, has now been made in a smaller size for motor cycle use. We illustrate the motor cycle pattern, which is sold in this country by Alfred Dunhill, Ltd., 359-361, Euston Road, N.W.





**J. B. JACQUEMIN BROS.**  
**COLLAPSIBLE "CHLOROPHYLLE" EYE PROTECTORS.**  
(ALCHISON PATENT) REGD

**TOURIST TROPHY RACES, 1912.**

Mr. E. KICKHAM (2nd in the Junior T.T. Race) writes—"I have great pleasure in stating that your Goggles are the **BEST** I have **EVER** used. I wore them in both races and found them perfect in driving rain, sun glare, mountain mist, and dust; and, furthermore, they are exceedingly comfortable."

'Chlorophylle' Lenses for Sun Glare,



'Chlorophylle' Lenses for Definition.

**THE EXPERT'S OPINION—PERFECT in all WEATHERS**

PRICE from 4/9 CHLOROPHYLLE LENSES, 5/6 PLAIN (Postage ...)  
 WRITE—HAPPELL & CO., 11, Halton Garden, LONDON.



### The Guest Decompressor.

THE little article illustrated herewith makes motor cycle starting simplicity itself, and not an athletic feat as heretofore.

EASY TO START THE ENGINE.  
 SIMPLE TO FIT.  
 SUITS ALL STANDARD MACHINES.  
 FITS INTO EXHAUST CAP.  
 NOTHING TO GET OUT OF ORDER.

Price **12/6** each.

Postage 4d.

GUEST DECOMPRESSOR CO.,  
 107, HIGH ST., WEST BROMWICH.

## MOTOR CYCLES BY EASY PAYMENTS

Whiteleys can supply ANY MAKE OF  
 MOTOR CYCLE or CYCLECAR on the  
 EASIEST OF EASY TERMS.

Interest Charge from 2 per cent.  
(Carriage Paid.)

### A TEN POUND NOTE

secures delivery, and you can pay the balance  
 afterwards by twelve monthly instalments.

**WHY WAIT 6 WEEKS WHEN WE HAVE IN STOCK**

Premiers  
 Bradburys  
 Triumphs  
 Indians  
 Douglas  
 Rex-Japs

Alcyons  
 New Hudsons  
 A.C. Sociables  
 Humbers  
 Singers  
 Motosacoche

Bats  
 Zeniths  
 Hobarts  
 Clynos  
 P. & M.'s.  
 Ridges

Special agents for Rollo cars.

# WHITELEYS

—QUEEN'S ROAD, LONDON, W.—

# HARRODS

## HAVE IN STOCK

the finest assortment of  
**MOTOR CYCLES** in London  
 at the **BEST PRICES**, amongst

which are the following:

- 2½ h.p. "Elswick," F.E.
- 3½ h.p. "Matchless"
- 4 h.p. "Norton" (Big Four)  
2 speed F.E.
- 3½ h.p. "Norton"
- 3½ h.p. "Rudge," F.E.
- 3½ h.p. "Rudge," Multi-  
speed
- 3½ h.p. "Singer," F.E.
- 2½ h.p. "Singer"
- 4 h.p. "Singer," 2 Speed F.E.
- 3½ h.p. "Zenith Gradua"
- 8 h.p. "Bat," 2 Speed

THE ABOVE ARE OFFERED SUBJECT TO  
 BEING UNSOLD ON RECEIPT OF ORDER.

## 50 Machines

in Stock to select from.

## End of Season Special Bargains

at very favourable rates.

## THE HOUSE for CYCLECARS

Any make supplied on  
 Deferred Payments.

WRITE FOR SPECIAL LIST OF SECOND-HAND  
 MACHINES.

**HARRODS LTD.** RICHARD BURBIDGE,  
 — Managing Director. —  
 BROMPTON ROAD, LONDON, S.W.



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

ADVERTISEMENTS in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.  
Northumberland, Cumberland, Durham, and Westmorland.

SECTION II.  
York and Lancashire.

SECTION III.  
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.  
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.  
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.  
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.  
Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants.

SECTION VIII.  
Channel Islands.

SECTION IX.  
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION X.  
Somerset, Devon, Dorset, and Cornwall.

Scotland.

SECTION XI.  
Ireland and Isle of Man.

## Satisfactory and Reliable Bargains

can always be obtained at

# WAUGHOPES

ASK FOR  
A COPY  
OF  
TO-DAY'S  
LIST.

in the largest selection of every first-class make, new or second-hand, at lowest prices, with immediate delivery, and most liberal exchange allowances made for used motor cycles in part payment of new. Our to-day's list includes—

5812.	2½ h.p. 1911	MOTOSACOCHE	£25 0
5822.	3½ h.p. 1912	F.E. RUDGE	£45 0
5834.	5 h.p. 1911	Tourist REX	£30 0
5836.	5-6 h.p. 1908	4-cylinder F.N.	£18 10
5839.	2½ h.p. 1911	MOTOSACOCHE	£27 10
5840.	3½ h.p. 1912	3-speed BRADBURY	£50 0
5846.	5-6 h.p. 1912	2-sp. 4-cylinder F.N.	£50 0
5847.	3½ h.p. 1908	TRIUMPH, Fitall 2-sp. gear	£28 10
5856.	2½ h.p. 1911	DOUGLAS	£27 10
5857.	8 h.p. 1911	2-speed MATCHLESS	£55 0
5858.	3½ h.p. 1912	2-speed B.S.A.	£50 0
5859.	3½ h.p. 1912	RUDGE Multi	£50 0
5861.	7 h.p. BAT-J.A.P.		£25 0
5866.	3½ h.p. 1908	TRIUMPH	£25 0
5870.	3½ h.p. 1912	ZENITH GRADUA	£45 0
5866.	6 h.p. 1912	F.E. MATCHLESS	£47 10
5801.	3½ h.p. 1912	ZENITH GRADUA	£42 10
5732.	2½ h.p. 1912	2-speed ENFIELD	£45 0
5559.	3½ h.p. 1908	TRIUMPH	£26 0
5809.	2½ h.p. 1911	2-speed PUCH	£29 0
5799.	2½ h.p. T.T. J.A.P.-CHATER	1911	£32 10
5788.	3½ h.p. T.T. BRADBURY		£30 0
5786.	2½ h.p. 1912	2-speed HUMBER	£45 0
5752.	2½ h.p. 1912	NEW-HUDSON, 3-sp.	£40 0
5767.	3½ h.p. 1912	3-speed PREMIER	£37 10
5775.	7-9 h.p. 1910	2-speed V.S. and sidecar	£38 0
5776.	5 h.p. 1911	2-speed REX DE LUXE	£35 0
5716.	2½ h.p. 1910	2 speed F.N.	£25 0
5742.	3½ h.p. 1910	T.T. TRIUMPH	£32 10
5743.	2½ h.p. 1911	DOUGLAS	£28 0
5695.	3½ h.p. 1911	A.S.L.	£27 10
5702.	6 h.p. 1912	Twin REX DE LUXE	£48 0
5705.	3 h.p. Two-stroke	IXION	£12 10
5710.	3½ h.p. 1908	MINERVA	£17 10
5672.	5 h.p. 1910	INDIAN and sidecar	£30 0
5625.	3½ h.p. REX		£7 10
5633.	3½ h.p. 1911	KERRY ABINGDON	30 Gns
5540.	8 h.p. 1911	2-speed MATCHLESS and sidecar	£65 0
5569.	3½ h.p. 1910	KERRY ABINGDON	£32 10
5606.	5-6 h.p. 1908	2-speed 4-cyl. F.N.	£25 0
5613.	3½ h.p. 1908	MATCHLESS-J.A.P.	£18 0
5618.	3½ h.p. 1911	BAT-J.A.P.	£30 0
5621.	2½ h.p. 1912	3-speed HUMBER	£45 0
5571.	2½ h.p. HUMBER		£15 0
5169.	5 h.p. 1908	twin G.B.	£20 0
3931.	5 h.p. 1910	tourist REX	£30 0
5504.	3½ h.p. 1910	PREMIER, Mabon free engine	£24 0
5543.	3½ h.p. 1911	3-sp. Lady's HOBART	£35 0

## THE NEWEST DEVELOPMENTS

1912-13 Models in ladies' and Sidecar Machines of every best make can be seen in our Showrooms.

9, SHOE LANE, FLEET STREET, LONDON, E.C.

'Phone: 5777 Holborn. Wires: "Opifcer, London."



## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, ad. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or it "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Hiffe and Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

6 h.p. 1911 N.S.U. Twin, 2-speed gear, with sidecar; £239/10, or without sidecar £234.

3½ h.p. Premier, 1911 model in grand running order, 2 tyres practically new, new belt; a bargain, £29.

3½ h.p. Premier, 1912, only soiled, not done 500 miles, Lucas lamp and horn; great bargain, £42. -Turvey and Co., The Motor House, Sunderland. [X9269]

NEW 6h.p. Royal Enfield Twin and Sidecar, in stock for immediate delivery; admitted the finest combination in the trade; £284.

NEW 1912 3½ h.p. B.S.A., T.T. model; £48/10.

NEW 1912 3½ h.p. Humber, 2-speed; £52/10.

NEW 1912 3½ h.p. Triumph, free engine; £55.

THE Above are offered as being unsold.—Turvey and Co., sole agents for Humber, B.S.A., Triumph, Royal Enfield motor cycles.—Write, wire, or phone for catalogues, to The Motor House, Sunderland. [X9270]

ENFIELD, 3½ h.p., h.n.e., just overhauled, with accessories; £15.—Box 1,112, The Motor Cycle Office, Coventry. [X62]

1912 Scotts in stock; deliver immediately; and 2-speed chain-drive Bradburs in 3 days.—Walker's, Fishburn, Ferryhill. [X245]

1910 P. and M., £40; 1909 P. and M., £30; 1908 2h.p. N.S.U., £12; excellent.—Walker's, Fishburn, Ferryhill. [X246]

3½ h.p. Humber, free engine, chain drive, h.b.c., spring forks, Dunlops, very reliable; trial here; £10.—25, Thompson St., Blyth, Northumberland. [X208]

1912 P. and M., with Millford spring wheel sidecar, one month old, perfect; a bargain at £70, cost £85.—Walton, 67, Grange Rd., W. Hartlepool. [X9563]

N.S.U., 6h.p. twin, with 2-speed and free engine, Whittle belt, good tyres, Bosch mag.; first fair offer accepted. Wanted, Durkop or F.N. 4-cyl.—Apply, Walton, 16, Ely St., Gateshead. [X519]

MOTOR Cycle, 3½ h.p. Premier, 1911 model, in grand running order, new back tyre and belt; a bargain, £29; expert trial and inspection invited.—Turvey and Co., The Motor House, Sunderland. [X9899]

MOTOR Cycle, 1912, 3½ h.p. Premier, not done 500 miles, horn, lamp, Cowey 4gn. speedometer, only soiled; cost £55, a bargain, £42.—Turvey and Co., The Motor House, Sunderland. [X9900]

MOTOR Cycle, new 1912 Triumph, free engine, in stock for immediate delivery; £35.—Turvey and Co., The Motor House, Sunderland. [X9901]

1½ h.p. Motosacocche, 2 belts, dry battery, tubular stand and carrier, newly enamelled and lined, Pacer and Shamrock studded, spring forks, in real good order; £12.—Nichol, 22, Lawson St., Carlisle. [X367]



# NEW REX BARGAINS

	Maker's Price.	Our Price.
1911 3½ h.p. Tourist	£45 3	34 guineas.
1911 3½ h.p. 2-speed de Luxe	£59 17	46 guineas.
1911-12 5 h.p. 2-speed Twin de Luxe	special price	51 gns.
1912 2½ h.p. 2-speed Rex Junior de Luxe		£45 0
1912 4 h.p. Tourist 84½ bore x 95 stroke		£45 0
1912 4 h.p. 2-speed de Luxe, handle starting		£55 0
1912 6 h.p. 2-speed Twin de Luxe		£62 10

SOLD UNDER MAKER'S GUARANTEE.

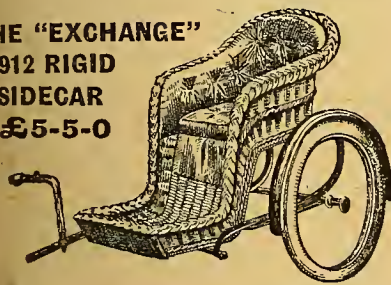
## MISCELLANEOUS MACHINES.

CLYND, 1912, NEW, just received	£65 10
HUMBER, 1912, 3½ h.p., 2-speed, NEW	£47 10
INDIAN, 1911, 5 h.p. free engine	£39 10
T.A.C., 4 cylinder, 3 speeds as new	£39 10
N.S.U., 1911, 3½ h.p., 2-speed, spring frame	£32 10
SCOTT, w.c., 2-speed, 1911	£34 10
PREMIER, 3½ h.p., magneto, spring forks	£25 0
LINCOLN-ELK, 1912, 3½ h.p., free engine, as new	£29 10
BRADBURY, 2½ h.p., Bosch magneto, spring forks	£18 10
BROWN, 2½ h.p., magneto ignition	£16 10
ROC, 5 h.p., 2 speeds, free engine	£29 10
OLYMPIA, 3 h.p., vertical engine	£25 10
KERRY, 2½ h.p., vertical engine	£10 0
QUADRANT, 3 h.p., spray carburettor	£7 15
BROWN 3½ h.p., h.b. control	£14 10
BAT, 2 h.p., spring frame	£10 10
4 h.p. Twin MINERVA, h.b. control, spring forks	£16 10
KYNOCH, 3 h.p., Chater-Lea frame	£8 10
KERRY, 2½ h.p., footboards	£8 10
CHATER-LEA-MINERVA, 2½ h.p., Nala 2-speed, spring forks, Model de Course tyres.	£16 10
GLOBE, 3½ h.p., vertical engine, h.b. control	£9 10
3 h.p. REX and 2½ h.p. incomplete.	each £3 15
3½ Magneto BAT, spring frame	£16 10

Special Quotations for Easy Payments.

## THE "EXCHANGE"

1912 RIGID  
SIDECAR  
£5-5-0



"Exchange" with Continental motor cycle tyre £5 5 0  
 "De Luxe," with best tyre, apron, footmat £6 6 0  
 "De Luxe," with reversible child's seat £7 7 0  
 "De Luxe," with best coach-built body £7 12 6  
 Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip-up body, and caged hall seats to all models. Prompt delivery to suit Rexas, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

## SECOND-HAND REXES.

REX, 1912, 2-speed Junior de Luxe, 100 miles	£32 10
REX, 5-6 h.p., 1909, 2-speed, twin, de Luxe	£34 10
REX, 1909, 5 h.p., 2-speed de Luxe	£33 10
EX, 3½ h.p., 1911, shop-soiled only	31 Gns.
EX, 5½ h.p., twin, spring forks	£16 10
EX, 2-speed de Luxe, 1910, 5 h.p., 1911 M.O.V. Engine, grand sidecar machine	£39 10
EX, 3½ h.p., magneto, free engine	£26 10
EX, 2½ h.p., magneto, spring forks	£19 10
EX, 2½ h.p., magneto, lightweight, h.b. control	£16 10
EX, 1910, 5-6 h.p., twin, very fast	£29 10
EX, 3½ h.p., 1909, free engine	£26 10
EX, 1911, 3½ h.p., 1912 magneto, shop-soiled	32 Gns.

## The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

Phone: 766.

Telegrams: "Perfection."

## MOTOR BICYCLES FOR SALE.

1912 Clyno, 2 speeds, Binks carburettor, Lucas lamp, large siren, exhaust whistle; £55, or near offer; replacing with 1913 model.—Potter, Leicester Grove, Leeds [X271]

LATE 1911 Easfield, 2½ h.p., free engine, 2-speed, chain drive, condition and tyres as new, horn, tools, etc.; £32; reason selling; health.—K., 37, Alexandra Rd., Macclesfield. [X954]

MORE-PRECISION, 3½ h.p., May, 1912, S.A. 3-speed, F.E., 2; Dunlop, all latest fittings; cost £58, take £48; faultless; bought his twin.—15, Berkeley Av., Letchworth. [X957]

1908 Triumph, just overhauled; any trial; Cowey's speedometer, watch, lamp, generator, tools, horn, spare tube, pliers, coat, overalls, etc.; £50.—Cottam, Easton Terrace, Clitheroe. [X743]

1911½ h.p. Premier, Armstrong 3-speed, splendid sidecar machine, not run 100; too powerful; sell £45, or would take good lightweight in part exchange; offers.—Miskin, naturalist, Keighley. [X9493]

3 h.p. Bat Motor Cycle, good condition, £30/10; 3 h.p. Humber engine and carburettor, 50/1; 2-speed gear, 30/1; new Millford sidecar, £4/15.—Wehh, 20, Regent Rd., Stockport. [X9512]

BRADBURY, 1910, French grey, excellent condition, just overhauled, all accessories, including speedometer, also spares, new Bates back tyre; £30.—Sutcliffe, 57, Lincoln St., Oldham. [X164]

1912 2½ h.p. New Hindson, Rom combination back tyre, ridden under 500, new July 1912 clutch Triumph, ridden 78, unscratched; offers wanted.—W.F. and Co., 5, Cheltenham Parade, Harrogate. [X114]

3 h.p. Mag. Tourist Rex, complete with all accessories, 32 lamp, tools, etc., tyres, belt, and enamelling like new, engine recently overhauled; bargain, £22/10.—Phipps, Lingard Rd., Northenden, Manchester. [X789]

1911 4 h.p. Chater-Lea-Jap, Bosch mag., 1912 B. and B., not done 1,000 miles, special 4 h.p. J.A.P. engine, with overhead valves, lamp, etc.; £25; exchange lightweight or cycle and cash.—Gray, Eastgate, Barnsey. [X754]

NEVER AGAIN; compulsory.—5 h.p. twin Rex, Bosch mag., patent saddle, h.b.c., Brown and Barlow, spring forks, etc., just re-bushed, etc., at cost of £4/4; £18; twin Premier, 3½ h.p., good order, £21, no offers.—Short, Dinnington, Rotherham. [X151]

GENUINE 1909 3 h.p. Rex, m.o.v., Bosch, adjustable pulley, Continental, spring forks, new front tyre, steel-studded back tyre, very reliable, new lamp and generator, spare P.R.S. head light; bargain, £15/10.—Particulars, Gregson, grocer, Chorley. [X3872]

1907 2-speed Free Engine Triumph, Bosch, B. and B., Brooks saddle, re-bushed, 1911, new cyl. and piston 1910, new Lyso belt, new heavy Kempshall, Palmer front, excellent condition throughout, nearest £28; rigid sidecar, £3.—Sutcliffe, Wood Top, Hebden Bridge, Tel.: 58. [X203]

3 h.p. N.S.U., excellent condition, accumulator and 2 Hellesen batteries, 3 good spare belts, 1911 B. and B. carburettor, lamp, horn, voltmeter, and all accessories, very fast machine; £12, or exchange with cash for 1910 model, Triumph preferred.—49, Gladstone St., Scarborough. [X732]

SCOTT, 1912, new, in stock, £65, Rudge Multi, new, in stock, £60; Ruxer free engine, 1911, perfect condition, guaranteed a bargain. £39; Hazlewood, 1912, 3-speed gear, perfect condition, £40; Easfield, 1911, 2 h.p., chain drive, 2-speed gear, new condition, £27.—Everingham, Pocklington. [X9541]

SCOTT, 1911, bought new January, 1912, done 3,600, Smith speedometer, valuable handle-bar stop watch, spare petrol tin, electric horn, X-Pull saddle and buckle, rest, P. and H. lamp, generator, carbide carrier, 1912 chainguard, chain extractor, spare link, Rich tube unused, carrier bag, handle-bar bag, overalls, gauntlets, in fact everything; giving up riding; cost nearly £70, genuine sacrifice, £45.—Henry Gerhartz, Clifton Villas, Bradford. [X9997]

GREAT Clearance Sale of Motor Bikes.—2 h.p. J.A.P., £7/10; 3 h.p. Daw, B. and B., Bosch mag., spring forks, £8/10; 5 h.p. Triumph, £7; 2 h.p. Moto-Reve, free engine, £14; 3 h.p. Rex, 1910, with 2-speed, free engine, £22; 3 h.p. Triumph, with free engine, £23, worth £5; 6 h.p. N.S.U., 1911, 2-speed, free engine and Mills-Patford sidecar, £35, worth £50; 1910 P. and M. and sidecar, new condition, 3 h.p., 2-speed, £36; 1912 Rex and coach-built sidecar, £55. We have over 50 2nd-hand motors in stock. Sidecars from 50/-. It will pay you to visit us.—Motor Cycle Exchange, 160, Young St., Sheffield. [X100]

NORTHERN Depot, Ltd., "Everything Motorish," Leech St., Liverpool.—Rover, with mark III Armstrong gear, Brooks pan seat, £58; latest 2-speed Bradbury, with adjustable pulley, £58; clutch 4 h.p. Rex-Jap, with Brooks pan seat, £54/12; latest Kerry Abingdon, 45 gns.; clutch model, 51 gns.; latest 1912 clutch Kerry Abingdon, shop-soiled, special bargain, price 40 gns., usual price 51 gns.; latest 8 h.p. twin Williamson machine; 1912 3 h.p. 2-speed Humber; A.C. Sociable tri-car, latest model; 6 h.p. Zebra car, 2-seat. All above machines actually in stock. [X8767]

## SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

5 h.p. Penzance, mag., B. and B. P. and H. lamp, new belt, good tyres, climb anything; £14.—Bingley, Pinxton. [X132]

# REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.  
 Tel.: "Rey, Hampstead." Tel.: 2678, P.O., Hampstead.

Terms: Cash, Exchange, or Extended Payments.

**FIRE! FIRE!! FIRE!!!**

A few brand new 1912 Machines, slightly soiled by smoke and water in recent fire, to be offered at great reductions, as below:

1 1912 DOUGLAS model G.....	£35 0
1 1912 Multi-speed RUDGE .....	£52 0
1 1912 Standard T.T. RUDGE .....	£39 10
1912 Standard BRADBURY .....	£40 0
1912 Free-Engine BRADBURY .....	£44 0
1912 4 h.p. 2-speed SINGER .....	£54 0
1912 3½ h.p. ZENITH .....	£46 0
1912 LINCOLN-ELK, 3 h.p. ....	£26 0
1912 3-speed SINGER .....	£50 0

## IMMEDIATE DELIVERY

AND IN STOCK TIME OF GOING TO PRESS:

1912 CLYNOS, 5-6 h.p., 2-speed, chain drive ..	65 Gns
7 1912 ZENITHS, 3½ h.p. ....	53 Gns
3 1912 ZENITHS, 6 h.p. ....	67 Gns
2 1912 ZENITHS, 8 h.p. ....	69 Gns
2 1912 T.T. Roadster TRIUMPHS .....	£50 0
6 1912 F.E. TRIUMPHS .....	£55 0
0 1912 T.T. RUGES .....	£48 15
4 1912 F.E. RUGES .....	£55 0
4 1912 Multi RUGES .....	£60 0
1912 RUDGE, 2-speed .....	£55 0
1912 BRADBURY, all models, from .....	£48 0
2 1912 SINGERS, 4 h.p., 2 speeds .....	£65 0
1 1912 SINGER, 3½ h.p., 3 speeds .....	£58 15
2 1912 2-speed B.S.A.'s .....	£60 0
1912 DOUGLAS, all models, including K and L ..	
1912 LINCOLN-ELK, 3 h.p. model .....	£30 10
3 1912 HUMBERS, 3½ h.p., 2-speed .....	£52 10
1912 MATCHLESS, all models .....	
1 1912 SCOTT, 2-speed .....	£65 0
1912 P. & M., Colonial Model .....	£65 0
1 1912 P. and M., 2-speed .....	
2 1912 Standard A.C.'s for Immediate Delivery ..	£37 10
1912 MORGAN Runabout, 15 days .....	
1912 G. and N. Runabout, immediate delivery ..	

Any other makes on application.  
 TRADE SUPPLIED WITH VARIOUS MAKES.  
 LIBERAL DISCOUNTS ALLOWED.

## SECOND-HAND

£29. F.N., 4-cylinder, 5-6 h.p. ....	1911
£28. F.N., 4-cylinder, 5-6 h.p. ....	1911
£25. F.N., 4-cylinder, 5-6 h.p. ....	1910
£40. T.T. RUDGE, 3½ h.p. ....	1912
£67. ZENITH, 6 h.p., and sidecar .....	1912
£37. TRIUMPH, T.T. Roadster .....	1911
£23. MINERVA, 4 h.p., Twin (Mag) .....	1909
£13. MAGNETO Mac, Brown eng., 3½ h.p. ....	
£38. REX, 6 h.p., Twin Clutch, speedometer, with Sidecar .....	
£29. BRADBURY, T.T., good order .....	1911
£30. REX, 3½ h.p., Clutch Model .....	1912
£18. HUMBER, 3½ h.p., 2-speed Model .....	1909
£39. BRADBURY, 3½ h.p., as new .....	1912
£46. ZENITH, 3½ h.p., as new .....	1912
£186. BAYARD, 8 h.p., 4-cylinder, 3 weeks old, quantity of spares .....	1912
£285. F.N. Car, 10-14 h.p., as new .....	1912

All Accessories included on S.H. at the price advertised.



£6-5s. REY Sidecar £5-5s.

With Hutchinson or Michelin 26 x 2½ tyre and tube.  
 Side entrance £7; Coach-built, side entrance, £9 10s.  
 ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

# REY

5, HEATH STREET, HAMPSTEAD.

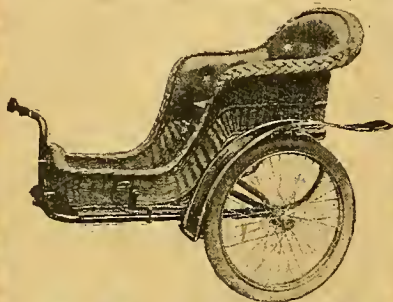


Your 1912 sidecars are

**Better Value than ever**

Vide Testimonial.

Our Model de Luxe sidecar is admitted to be the finest all-round value ever offered. Cranked axle, quick detachable joints, caged ball races, with extra stout wheel spindle. Guaranteed 12 months.

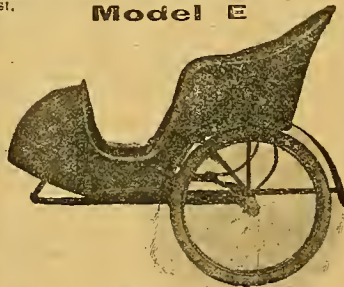
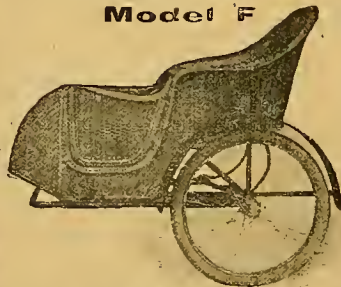
**£6 - 5 - 0**

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

**OUR REED CANE BODIES**

have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

**Model E****£7 10s.****Model F****£8 8s.**

Complete as above and carriage paid.

**MISCELLANEOUS BARGAINS.**

Lycett's "Top Tube" tool bags..... 7/-  
2 1/2 h.p. Sarcola Engine..... £1 5  
2 h.p. Stanomary Engine, water-cooled .... £4 10  
Albion Clutch, fits Triumph ..... 47/6  
New screw-cutting Lathe, in centres ..... £6 10  
Brooks's Brgo New Saddle, 1912 model .... 14/6

OUR WORKS ARE CLOSED AUG. 15, 16 &amp; 17th.

**Farrar's Motor Exchange**

19, 21, 23, 25, Hopwood Lane.

**HALIFAX** (Two minutes from G.P.O.)

Telephone 919.

**MOTOR BICYCLES FOR SALE.**

P. and M. (Sept., 1911), and Montgomery No. 5 castor sidecar, little used; £57.

P. and M. (Nov., 1911), and Millford radial castor sidecar, with seat for child, cost £16/10 2 months ago; £65, or separate.

3 1/2 h.p., 1911 New Hudson, J.A.P., Armstrong gear, £245; 1908 Triumph, overhauled by makers, new tyres, £26.

4 h.p. Motor Cycle and tradesman's carrier, 2-speed and free engine—Particulars, Rollings, Carriage Works, Wrexham. [X144]

1911 4-cyl. F.N., as new throughout; £34, or offers.—Harold Potts, Broseley. [X9481]

INDIAN, 7h.p., 1911 model, free engine, blue, with or without sidecar; best offers—Hanley Garage, Ltd., Cheapside, Hanley. [X9887]

ROYAL Enfield, 2 1/2 h.p., 1911 model, 2-speed, free engine, as new; £35 cash.—Hanley Garage, Ltd., Cheapside, Hanley. [X9888]

HUMBER Lightweight, 1911 model, in perfect running order; bargain, £25, cash.—Hanley Garage, Ltd., Cheapside, Hanley. [X9889]

PREMIER, 1911, 3 1/2 h.p., new; best price £48, just received from the works; best offers—Hanley Garage, Ltd., Cheapside, Hanley. [X9890]

NEW Hudson, 1912, 2 1/2 h.p., 3-speed, T.T. bars, J.A.P. engine; must clear.—Hanley Garage, Ltd., Cheapside, Hanley. [X9891]

PREMIER, 1912, 3 1/2 h.p., 3-speed, in stock to clear; best offers—Hanley Garage, Ltd., Cheapside, Hanley. [X9892]

MOTO-REVE, twin, 1910, good condition; £16, or exchange Triumph—H. Dixon, Fern Lea, Northwich. [X174]

INDIAN, 1911, 7h.p., clutch model; exchange for 2 1/2 or 3 1/2 h.p. any good make.—39, Warrington St., Derby. [X327]

TRIUMPH, clutch model, £55; New Hudson-Jap, 3-speed, 57gns.; in stock, just arrived.—Miller, Craven Arms. [X100]

1912 4 h.p. Rex-Jap, standard model, bought Whitts, £29; want twin.—C. Alcock, Jeweller, Shrewsbury. [X180]

3 1/2 h.p. Excelsior, spring forks, h.b.c., Brown and Barlow, new belt and tubes, perfect; £10.—33, Queen's Rd., Fairfield, Buxton. [X136]

INDIAN, red, 1911, 2-speed, fast, in first-class condition; £42, or nearest; getting 7h.p.-1,120, The Motor Cycle Offices, Coventry. [X306]

1911 Humber Lightweight, 2 1/2 h.p., good tyres, new Dunlop belt, lamp, etc., been carefully used; £25.—Wellsted, Oak House, Wirksworth. [X194]

1911 1/2 Kerry-Abingdon, 2-speed, F.E., handle starting, also sidecar, side entrance, spares, perfect; offers.—34, Paradise St., Northwich. [X9525]

2 1/2 h.p. F.N., 26in. wheels, new tyres, h.b.c., fast and perfect; best offer; must sell.—E. Alcock, Birch Hall Lane, Rudheath, Northwich. [X9526]

1911 1/2 Standard 3 1/2 h.p. B.S.A., just as new, tyres, belt, and everything perfect; £35.—T. W. Bentler, 159, Waterloo Rd., Burslem, Staffs. [3614]

EXCEPTIONAL Offer.—1912 T.T. Arno, absolutely perfect; exchange for 1911 standard Triumph, or sacrifice £35, bargain.—Thos. F. Watson, Ripley, Derby. [X9524]

1911 1/2 Clutch Triumph, absolutely perfect, new Kempshall's, Whittle, Lucas lamp, horn, mirror, spares; £42.—Andrews, 22, Crowther Rd., Ashton-under-Lyne. [X9527]

3 h.p. Humber, No. 9 pattern frame, chain drive, var. Brown and Barlow, h.b.c., new studded tyres, splendid condition; £11/10.—Barratt, Fairfield, Buxton. [X135]

TRIUMPH, free engine, just arrived from works; Rudge, free engine model, in stock; first cheque secured either.—Tupling and Vigor, Ltd., Whitthorn, Salop. [X9504]

HUMBER, 1911, 2-speed, lamp, horn, Jones trip speedometer, also sidecar, Mills-Fulford, spring wheel; £42/10, or nearest.—1,121, The Motor Cycle Offices, Coventry. [X261]

LIGHTWEIGHT F.N., Bosch mag., geared pulley, B. and B. 1912, B104 saddle, all spares, tools, lamp, stand, splendid condition; £14/10.—Meredith, Chester Rd., Wincford. [X99]

A SNIP.—3 1/2 h.p. Triumph, 1910, beautiful condition, tyres, etc., perfect, just overhauled, and ready for touring, complete with lamp, etc., etc.; £30, lowest.—Millard, draper, Chesterfield. [X152]

1912 Triumph, clutch model, brand new; also 3 1/2 h.p. standard BAT, new; offers wanted, or will take good 2nd-hand Sunbeam cycle in part for either.—Fox, Lichfield Barracks, Staffs. [X96]

IN Stock, B.S.A., 2-speed, £60; Rover, free engine, £55; Humber, 2 1/2 h.p., £42; Campion-Jap, 4 h.p., £40, exchanges entertained; several 2nd-hands.—Campion, London Rd., Derby. [3545]

1911-12 8 h.p. Matchless Sidecar Machine, model No. 1, 7, done 2,507, machine with spares cost £84/10, property of an officer ordered abroad, tyres, etc., as new; offers wanted.—Apply, The Professional, Barracks Golf Club, Lichfield. [X97]

**NOTHING EXTRA FOR****EASY PAYMENTS!!!****1/4 DOWN**

Secures any of these NEW 1912 machines. Balance payable in Twelve Equal Monthly Payments.

6 h.p. CLYNO, 2 speeds .....	£68 5
3 1/2 h.p. NEW HUDSON, 3 speeds .....	57 Gns.
2 1/2 h.p. NEW HUDSON, 3 speeds .....	47 Gns.
6 or 8 h.p. REX-J.A.P., 2 speeds .....	List Prices
3 1/2, 6, or 8 h.p. LENITHS, multi-speed .....	List Prices
3 1/2 h.p. RUDGE, standard model .....	£48 15
3 1/2 h.p. RUDGE, multi-speed .....	£60 10

All New. All guaranteed by makers.

**MOTOR CYCLE FRAMES.**

We have a quantity of frames by well-known makers.

Price 32/6 each.

Rigid forks, 7/6 extra. Druid forks, 45/- extra.

Enamelled and plated in first-class style.

**ONE ONLY**

1911 1/2 3 1/2 h.p. PREMIER, Armstrong 3-speed gear, brand new; £46

**ONE ONLY**

1912 8 h.p. MORGAN Runabout, 2-seater, ready for delivery, brand new; 85 Gns.

**SECOND-HAND BARGAINS.**

3 1/2 h.p. 1910 L.M.C., Bosch, h.b. control, £22 0

3 1/2 h.p. 1910 TRIUMPH, beautiful order, £33 0

3 1/2 h.p. HUMBER, 2-speed model, Bosch, £23 0

4 h.p. BAT-JAP, M.O.V., Bosch, spring frame £16 0

1911 (Nov.) 3 1/2 h.p. RUDGE, free engine, £39 0

3 1/2 h.p. N.S.U., magneto, spring forks, £17 0

2 h.p. WOLF, magneto, spring forks, £15 0

3 1/2 h.p. N.S.U., 2-speed, spring forks, £16 0

1910 8 h.p. BAT, M.O.V., 2 speeds, £45 0

1911 Lady's HOBART, Armstrong 3-speed, £36 0

3 1/2 h.p. Twin PREMIER, fine machine, £25 0

**SINGLE-CYLINDER REXES.**

3 1/2 h.p. 1908 Tourist, Bosch, spring forks, £21 0

3 1/2 h.p. 1908 Tourist, 1909 engine, £23 0

3 1/2 h.p. 1909 Speed King, extra fine, £24 0

3 1/2 h.p. 1908 Featherweight Rex, Bosch mag., £17 0

**TWIN-CYLINDER REXES**

1906 5-6 h.p. Twin Rex, £10 10

5-6 h.p., Bosch, Lloyd's variable gear, £22 0

7 h.p. de Luxe, 2 speeds, M.O.V., £48 0

5-6 h.p. de Luxe, 1908, 2-speed model, £28 0

**SIDECAR COMBINATIONS.**

8 h.p. BAT, 2 speeds, Millford sidecar, £50 0

6 h.p. 2-speed 1908 REX and sidecar, £33 0

7-9 h.p. 2-speed REX and sidecar, £53 0

**£3 DOWN SECURES ANY OF THESE.**

BALANCE 5/- WEEKLY.

1 1/2 h.p. MOTOSACOCHE, Druids, £9 0

3 h.p. MINERVA, vertical, M.O.V., £12 0

3 1/2 h.p. EXCELSIOR, Amac, h.b. control, £10 0

**£4 DOWN SECURES ANY OF THESE.**

BALANCE 25/- MONTH.

2 h.p. WOLF, magneto, 26in. wheels, A.J.S. engine, £15 0

3 1/2 h.p. N.S.U., magneto, spring forks, £16 0

3 1/2 h.p. N.S.U., 2 speeds and free engine, £16 0

**£5 DOWN SECURES ANY OF THESE.**

BALANCE 30/- MONTH.

3 h.p. 1908 REX, Bosch magneto, £17 0

5 h.p. Twin REX, spring forks, h.b. control, £16 10

4 1/2 h.p. WOLF Tricar, 2 speeds, £19 0

4 1/2 h.p. HUMBER Tricar, 2 speeds, wheel steering, £19 0

5 h.p. HUMBER Car, 2-seater, good gear, £22 0

**MISCELLANEOUS BARGAINS.**

New Sidecar, basket body, upholstered green, £1

One ditto, upholstered red, £1

1912 B. and B. Carburettors, variable jets, 28/6

1912 B. and B. Carburettors, single jet, 27/-

1912 Seaspray Carburettors, 28/6

Camel rib, Rubber Belting, per foot 1/3

Trailer, 26in. wheels, 25/-

Sidecar Aprons, green or red, with studs, 4/6

New Lycett's Tubular Carriers, 4/11

Bosch V Twin Magneto, 43 d-g es., £16 10

4 1/2 h.p. Riley Engine, water-cooled, M.O.V., £16 10

Riley 2-speed Gear Box, free engine, £2 2

**Farrar's Motor Exchange**

19, 21, 23, 25, Hopwood Lane.

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

OUR WORKS ARE CLOSED AUG. 15, 16 &amp; 17th.



MOTOR BICYCLES FOR SALE.

12 New Triumphs, Singers, Zeniths, Rudge-Whitworths in stock, cash or exchange; 2nd-hand Triumphs, 1911, cheap. Let us know your wants.—Stinson, 11, Leicestershire.  
N. 4-cyl. 5-h.p. Motor Cycle, free engine, 1911 model, excellent condition, tyres good; can be seen; £30, or nearest offer.—Apply, Bennett and Wood, 1, Gosford St., Coventry. [X183]  
R.H.p. Twin Hammer, 3-speed gear, ridden 1,200 miles only, specially picked engine, fast and reliable. 21in. rear tyre, spares; £42 cash.—Box 1,151, Motor Cycle Office, Coventry. [X325]  
BRADBURY, 2 speeds, free engine, Whittle and rubber belts, everything perfect condition, new, 1912; cost £58, accept £42; trial with pleasure;—Millington, Heanor, Notts. [X355]  
NTOINE, 6-h.p. twin, h.b.c., spring forks, spring footboards, mag., new tyres, new belt, very powerful, sound everywhere; genuine bargain, £19.—Vision, 32, Manor Rd., Rugby. [X175]  
12 Triumph, free engine, only done 2,500 miles, new Knapshall back tyre, Cowey speedometer, Dunlop belt, spare tube and valves; cost over £60, accept for quick sale £47/10.—Stakey, 13, Bank Rd., Rugby. [X322]  
10 Kerrv Abingdon, free engine, 3 1/2 h.p., Bosch mag., B. and B., h.b.c., Clincher studded tyres, free, guaranteed perfect condition; any trial; £26, nearest.—1, Victoria Av., Glover's Rd., Small Heath, Birmingham. [X341]  
TRIUMPHS, two 1912 free engine models in stock; one 1911 free engine Triumph, Whittle, Lucas mag., etc., complete as new, £42/10; one 2 1/2 h.p. twin engine, in perfect condition, Whittle belt, footboards, £25.—The Stamford Garage, Stamford. [X312]  
LASTOW, Grimsby has the following 2nd-hand machines on offer: 1912 Indian, 2-speed and P.E., Montgomery sidecar, £65; 1911 P.E. Triumph, ex-cel order, £38/10; 1911 P.E. Rudge, as new, £38; 1 1/2 3 1/2 h.p. Champion, A.A.A. engine, new condition £10; 1911 P.N., 5-h.p., 4-cyls., £25; 1910 3 1/2 h.p. motor, £22; 3 1/2 h.p. Excelsior, De Dion engine, with gear, complete, £10/10. [X154]

SECTION V.  
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1 h.p. Hammer, 1912, quite new; price to clear £32/10.—Robinson's, Green St., Cambridge. [X3694]  
LYNO, 5-h.p., just delivered, immediate delivery; £68/5.—Robinson's, Green St., Cambridge. [X3695]  
WO 1912 Free Engine Triumphs, just delivered, no waiting; £35.—Robinson's, Green St., Cambridge. [X3696]  
ENITH, 3 1/2 h.p., 1912 pattern, F.R.S. lamp, Lucas horn and mirror, several spares, ridden 1,000 miles; £45.—Robinson's, Green St., Cambridge. [X3697]  
DOUGLAS Motor Bicycles.—Appointed sole agents for Cambridge and district for season 1913, Robinson's, Green St., Cambridge. [X3698]  
10 Indian, 5-h.p., first-class condition, tyres in good order; £26.—Robinson's, Green St., Cambridge. [X3699]  
OTO-REVE, 1909 pattern, engine mag., in thorough good order, recently overhauled; £15.—Robinson's, Green St., Cambridge. [X3700]  
EV and 2nd-hand B.S.A., Ridges, Premiers, Bradburys, Enfields, etc.—Lambert, Thetford. [X3701]  
11 Bat, 6-h.p., 2-speed, in perfect order; cheap.—Lambert, Thetford. [X3702]  
10 Mag, Motosacoeche; 17gns.—Lambert, Thetford [X3703]  
12 2-speed Bradbury, ridden 5 miles on road; £50.—Barker and Son, St. Ives, Hunts. [X3704]  
DOUGLAS, 1911 (August), new condition, lamp, horn, outfit, tools; £32.—Page, Melton, Suffolk. [X3705]  
1 h.p. P.N. Lightweight, Bosch, spring forks, good tyres; £11/10.—Bocker, Werrham, Stoke Ferry. [X3706]  
1 h.p. 4-cyl., in first-class order and condition throughout; £15.—3a, Bridge St., Cambridge. [X3707]  
09 Motosacoeche, mag., Druid spring forks, in perfect order; £12/12.—3a, Bridge St., Cambridge. [X3708]  
WO 1912 Free Engine Triumphs; 45gns.; each with Lucas lamp and good horns.—Mitson's, Newmarket [X3709]  
12 Hammer, easy starter, with lamp and horn, and used for trials; 40gns.—Mitson's, Newmarket. [X3710]  
TRIUMPH, 1909, good running order; bought later model; £24.—Wisbech House, Sedgeford, King's Lynn. [X3711]  
1 h.p. De Dion, good tyres, new Lycett belt, spring forks, good running order. £6/10.—94, Mill Rd., Cambridge. [X3712]  
OTO-REVE, 1910, twin, thorough order, £20; sidecar, fit Triumph, 55/.—Redf., 28, Bridge St., Cambridge. [X3713]  
ATE 1911 Free Engine Rudge, not ridden 500 miles; cost £55, accept £38; must sell.—37, Searle St., Cambridge. [X3714]  
WIN J.A.P. Racer, 7h.p., will do 75, like new; £33; any trial.—H. Middleton, Fairland St., Wymond-leigh, Norfolk. [X3715]



THE SPOT  
for BARGAINS.

**TRIUMPH  
SCOTT  
REX  
REX-J.A.P.**

Zenith Gradua, Premier, N.S.U.  
Douglas, etc.

Latest 1912 Models in Stock  
for Immediate Delivery.

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Motor Co., Ltd.,**

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FULLY GUARANTEED  
Second-hand Machines.

Write for List giving complete Specification  
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ROVER, 1911, 3 1/2 h.p., free-engine	£30
REX, 1911, 3 1/2 h.p., free-engine	£28
MATCHLESS J.A.P., 3 1/2 h.p., 1911, free-engine	£33
BRADBURY, 3 1/2 h.p., 1911, 2 speeds	£33
TRIUMPH, 3 1/2 h.p., 1911, free-engine	£40
TRIUMPH, 3 1/2 h.p., 1911, T.T. roadster	£35
TRIUMPH, 3 1/2 h.p., 1911, T.T. roadster	£32
TRIUMPH, 3 1/2 h.p., 1909, standard	£25
MATCHLESS, 1911, 8 h.p., 2 speeds	£50
BAT J.A.P., 7-8 h.p., spring frame	£28
DOUGLAS, 1911, 2 1/2 h.p., 2-speed	£34
KERRY ABINGDON, 1911, 3 1/2 h.p., free-engine, and sidecar	£30
N.S.U., 1911, 6 h.p., 2-speed, and coach-built sidecar	£38

Cash, Exchange,  
or Easy Payments.

MOTOR BICYCLES FOR SALE.

DOUGLAS, 1911, 2 1/2 h.p., exceptionally well cared for; £25, great bargain, worth £35.—Garham, 96, Crown St., Ipswich. [X9315]  
MOTO-REVE, 1910, twin, free engine, mag., h.b.c., Whittle belt, splendid order; £15, bargain.—Garham, 96, Crown St., Ipswich. [X9316]  
CHATER-LEA-MINERVA Motor Cycle, 1911, 3 1/2 h.p., 2 speeds and F.E. handle starting, specially built for sidecar work, very low, fast, and powerful; exceptional bargain, £24.—Garham, 96, Crown St., Ipswich. [X9317]  
TWO 1912 Free Engine Triumphs and Standard Bradbury; just delivered, no waiting.—Triumph Agent, King's Lynn. [X9318]  
BRADBURY, 1912, free engine, 2-speed, absolutely new; cost £55, first cheque £47.—150, London Rd., King's Lynn. [X9319]  
TRIUMPH, late 1910, clutch model, excellent condition, not done 1,000 miles; offers.—French's Motor Cycle Depot, Bedford. [X201]  
£24.—3 1/2 h.p. Calthorpe-Precision, excellent condition, all accessories, very fast and reliable.—29, Montague Rd., Cambridge. [X3853]  
3 1/2 h.p. Marsh, Hellesen cells, 2-way switch, new tyre; £9/10, or offers.—Cooper, Ironmongers, Hertford, 5, Adelaide Sq., Bedford. [X234]  
ARIEL, 2 1/2 h.p., splendid little machine, guaranteed condition; price only £9, for immediate sale.—West, 8, George St. West, Luton. [X10]  
2 h.p. Iris Lightweight, Dunlop tyres, good condition, 26in. wheels, running order; £6, bargain.—Lewis, Waterloo House, Mill Rd., Cambridge. [X9515]  
LATEST 1912 Bat Motor Cycle, fitted with 4h.p. J.A.P. engine, just new, ridden some 200 miles; a bargain, £42.—47, St. Peter's, Bedford. [X3729]  
ENFIELD, 1911, 2 1/2 h.p. twin, 2-speed, free engine, just thoroughly overhauled, accessories; cost £52, accept £35.—Vokes, Itohen Abbas, Aylesford. [X3782]  
MOTOSACOCHE, new Clincher, Whittle, tube, and accumulator, spring seat, Druids, very reliable and fast; bargain, £14.—Plack, Long Melford, Suffolk. [X3615]  
3 1/2 h.p. N.S.U., 1908, in exceptional condition, 2-speed, £2 mag., new Rom tyre, 1912 B. and B. carburettor; bargain, £18/18.—Weaver, 41, Devereux Av., Cambridge. [X263]  
NEW 3 1/2 h.p. M.M.C. Chater-Lea, mag., B. and B., Hutchinsons, Triumph, spring forks, stand, carrier, low, like B.S.A.; £30; photo.—Curd, Electric Theatre, King's Lynn. [X3598]  
F.N. Motor, 5-h.p., free engine, 2 speeds, lamp, and Cowey; 1912 T.T. Rudge, as new, £38; late 1910 F.E. Triumph, complete, with Cowey, £38.—Crawley, Triumph agent, Bedford. [X9503]  
1912 F.E. Rover, 2-speed Bradbury, 3 1/2 h.p., Zenith, Douglas, Clyno and sidecar, several Triumphs and nearly new sidecars in stock; best offers accepted, cash or exchange.—Young, Newmarket. [X9555]  
FOR Sale, 1908 3 1/2 h.p. Triumph, in good running order, and Montgomery sidecar, with flexible joints, having bought higher power machine; cash price £30 complete.—Apply, Cross, The Brewery, Huntingdon. [X3733]

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

BRADBURY (1912), 2-speed, chain drive, 1,200 miles, and cane Comfy sidecar; £55.—Leyson, Pencynor, Neath. [X211]  
TRIUMPH, 1912, fixed engine, mileage 2,000, Cowey speedometer, lamp, horn, etc.; £40, no offers.—Dunn, 23, Breinton Rd., Hereford. [X3742]  
TRIUMPH, 1910, free engine, overhauled, re-bushed last month, lamp, horn, spares; £33.—Snatt, Shrubbery, Camp Hill Rd., Worcester. [X3704]  
F.N., 2 1/2 h.p., 1910, 2-speed, free engine, tyres new, accessories, excellent condition; £25.—Dr P., Tospot, Approach Rd., Manselton, Swansea. [X115]  
1912 New Hudson, 3 1/2 h.p., Armstrong 3-speed, cost £60 3 months ago, machine scarcely soiled, only ridden 100 miles; 52gns.—Box 1,093, The Motor Cycle Office, Coventry. [X9524]  
1912 8 h.p. Chater-Lea and Chater sidecar, 3 speeds, separate gear box, delivered March 12th, cost £95, only run 600 miles; owner going abroad; trial; sacrifice, £70.—Etheridge, Sunnybank, Griffithstown. [X112]

SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

DOUGLAS, 1911, 2 1/2 h.p., 2-speed model; £33.—Layton's, Bicester, Oxon. [X176]  
TRIUMPH, 1911, free engine model, 3 1/2 h.p., excellent condition; £36.—Layton's, Bicester, Oxon. [X177]  
ENFIELD, 2 1/2 h.p., 1912, free engine and 2-speed, soiled only; £41.—Layton's, Bicester, Oxon. [X178]  
TRIUMPH, 1912, free engine and standard models, delivery from a stock; exchanges considered.—Layton's, Bicester, Oxon. [X179]



## MOTOR BICYCLES FOR SALE.

TRIUMPH, 1906, mag., 18 gns.; also 2nd-hand 1912 Singer and 1911 Douglas.—Julian, Broad St., Reading.

TRIUMPH, 1908, equal to new, 28 gns.; also 2nd-hand 1912 Singer and 1911 Douglas.—Julian, 84, Broad St., Reading.

TRIUMPH, 1909, equal to new, 30 gns.; also 2nd-hand 1912 Singer and 1911 Douglas.—Julian, Broad St., Reading.

TRIUMPH, 1910, equal to new, 32 gns.; also 2nd-hand 1912 Singer and 1911 Douglas.—Julian, 84, Broad St., Reading.

TRIUMPH, 1911, 2-speed, F.E., 45 gns.; also 2nd-hand 1912 Singer and 1911 Douglas.—Julian, 84, Broad St., Reading.

TRIUMPH, 1906, mag., 18 gns.; also 2nd-hand 1912 Singer and 1911 Douglas.—Julian, Broad St., Reading.

TRIUMPH, 1908, equal to new, 28 gns.; also 2nd-hand 1912 Singer and 1911 Douglas.—Julian, 84, Broad St., Reading.

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And any machine below shall be immediately reserved for you.

## First-class Stock.

Stock No.	Model.	Price.
18.	TRIUMPH, 3½ h.p., 1910, fixed, good condition	£30
188.	DOUGLAS D, 2½ h.p., 1911, fixed engine	£28
9.	DOUGLAS E, 2½ h.p., 1911, 2-speed, free-engine	£37
679.	SINGER T.T., 2½ h.p., 1912, fixed engine	£30
275.	PREMIER, 2½ h.p., 1912, 3-sp., free-engine	£32
538.	ZENITH, 3½ h.p., 1911, Gradua gear	£40
666.	TRIUMPH, 3½ h.p., 1911, free-engine	£40
627.	MATCHLESS, 3½ h.p., 1911, V.S. 2-speed, free-engine	£42
676.	JAMES, 4½ h.p., 1912, 2-speed, free-engine	£45
	DOUGLAS, 2½ h.p., 1912, single gear, little wear	£35
	DOUGLAS, 2½ h.p., 1912, 2-sp., slightly used	£43
	PREMIER, 3½ h.p., 1912, 3-sp., free-engine	£48
	MATCHLESS, 6 h.p., 1912, 2-sp., slightly used	£61
	MACBETH-PRECISION, 3½ h.p., 1912, 3-speed, slightly used	£48
	ROYAL ENFIELD, 6 h.p., 1912, 2-speed, sidecar combination, little used	£72
	PREMIER, 3½ h.p., 1911, fixed engine, absolutely new	£39
261.	BRADBURY, 3½ h.p., 1911, fixed engine	£30
18.	BAT, 8 h.p., P. and M. gear, absolutely new	£60
50.	ZENITH 3½ h.p., 1912, slightly used	£48
62.	DOUGLAS Lady's, 2½ h.p., 1911, 2-speed	£32
18.	BRADBURY, 3½ h.p., 1911, fixed engine	£33

## Second-class Stock.

Stock No.	Model.	Price.
18.	MOTOSACOCHE, 1911, free-engine, good condition	£19
261.	INDIAN (Red), 5½ h.p., 1910	£30
261.	N.S.U., 3½ h.p., 1908, mag., L.C.C.	£17
250.	MOTOSACOCHE, 1½ h.p., 1909	£8
176.	DOUGLAS D, 2½ h.p., 1911, fixed engine	£23
	REX, 2½ h.p., 1910, fixed engine	£16
682.	TRIUMPH, 3½ h.p., 1910, Mabon clutch	£20
681.	P. and M., 3½ h.p., 1909, 2-speed, free-engine	£30
468.	MOTO-REVE, 2½ h.p., 1910, fixed engine	£15
659.	MOTO-REVE, 2½ h.p., 1910, fixed engine	£18
675.	SCOTT, 3½ h.p., 1910, 2-speed, free-engine	£28
250.	TRIUMPH, 3½ h.p., 1910, fixed engine	£29
261.	DOUGLAS, 2½ h.p., 1910	£19

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261, Deansgate, Manchester.  
62, High Street, Leicester.  
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## MOTOR BICYCLES FOR SALE.

ENFIELD, 2½ h.p., 2-speed, free engine, as new; c 52 gns., except £35.—Barnes, Colbrook. [36]

TRIUMPH (late), 1911, free engine, in first-class condition; £42.—Pye, Moreton-in-Magna, Glos. [36]

SINGER, 3½ h.p., free engine, 1911, good condition throughout; £40.—2, Warwick St., Oxford. [36]

BRADBURY, 1912, free engine model, brand new shop-soiled only; £49.—Ginger, Motors, Banbury. [X95]

TRIUMPH, 1912, free engine model, new, in stock immediate delivery; £55.—Ginger, Motors, Banbury. [X96]

F.N., 4 cyls., spring forks, Bosch, excellent condition; £20, cheap.—Warrilow, Beckford, Tostbury. [34]

FOR Sale, or exchange, Clement-Garrard light motor cycle, just overhauled; £10.—Hooper, Gt. St., Stroud. [3]

5½ h.p. Twin Rex-engine Chater-Lea, mag., excellent condition, £18; sidecar, £3.—Smith, "The Hornet" Melkham. [X2]

RUDGE, 1912, 3½ h.p., free engine, absolutely as new been five miles, luxurious; £48.—Staaley Gals High Wycombe. [34]

GRIFFON, 2½ h.p., splendid condition; wanted, £105 covers, tube, or good vulcaniser; sell, £125. Williams, Bicester. [X91]

MOTOSACOCHE, 1909, 1½ h.p., accumulator, running order, accessories; £10.—A. Brown, Bourne End, Bucks. [X91]

DOUGLAS, late 1911, run only 900 miles, new condition, lamp, horn, etc.; £27; must sell.—50, Victoria Rd., Aldershot. [3]

1912 Number, 2 h.p., Armstrong 3-speed and chain horn, spares; cost £45 April, accept £23. Poyntz, Dorchester, Oxon. [3]

1912 Douglas, single speed model, used twice only, absolutely as new, best offer secured.—N. J. Woburn House, Cheltenham. [30]

3½ h.p. James, 1911, heavy Kempshall, P. and H. horn, mirror, tools, spares, new 1½. Dunlop £54.—Shuttrely, Witney, Oxon. [3]

TRIUMPH, 1910, Cowey speedometer, Romby Dunlop front tyre, spares, just overhauled; £28.—York, Albany Rd., Salisbury. [3]

3½ h.p. Rex; £8/10; any trial; excellent tyres, new light, horn, tools, ride 20 miles.—Box 10, The Motor Cycle Offices, Coventry. [X91]

MATCHLESS, 8 h.p., passenger model, just delivered; offers wanted; makers' price, £73/10. Freeman, 151, Barton St., Gloucester. [3]

2½ h.p. Minerva, 26 in. wheels, 3 accumulators, 1 speedometer Brown and Barlow, fast; £24. Kingston, 5-6, Market St., Maidenhead. [X]

MOTOR Cycle, 2 h.p., V.A.F. engine, good order; Dunlop tyres, dry battery, Fuller coil; £26/10. offers.—Bourne, Wantage Rd., Didcot, Berks. [3]

BRADBURY, in perfect condition, N.S.U. 2½ gear, free engine, as good as new, not done miles; offers.—Britton, Embleton, Newport Pagnell. [X]

2½ h.p. Motococche, 1911, var. gear, spare to 22 Whittle, Lugo, spares, etc. £30, or exchange 4 h.p.—Box L8,288, The Motor Cycle Offices, 20, T. St., E.C. [3]

2½ h.p. Enfield, late 1911, tyres, enamelling, 22 plating as new, accessories, lamp, horn, mirror sacrifice for 27 gns., cost £44.—H. 38, Bloomfield Gloucester. [3]

2½ h.p. Kerry, Druid forks, Brown and Barlow, Box 23, splendid order, spare new tube, tyre, all accessories; £18; going abroad.—Lucena, Hannans Hill Lee-on-Solent. [3]

BERKELEY, 5½ h.p. twin, m.o.v., low, fast, h. belt nearly new, footboards, foot brake; £12 or exchange modern drop frame machine, less engine 94, Belmont Rd., Maidenhead. [3]

DOUGLAS Model K Motor Cycles in stock, ready immediate delivery; £50.—The Motor Cycle Dept, 43, Pallumerston Rd., Boscombe. Tel.: 1248 Bournemouth. Telegrams: Alsford, Boscombe. [2]

NEW Hudson, 1912, 3½ h.p., 3-speed, new, in owner unable to take delivery; Dunlop ty standard finish and equipment; accept £52/10 for sale.—Seen at The Morris Garage, Oxford. [X9]

1909 Twin Rex de Luxe, engine just overhauled makers, Roco clutch, 1911 Amac, 1 in. L. carrier, stand, toolbag, horn; any trial; bargain, £22 Box 1,111, The Motor Cycle Offices, Coventry. [2]

FOR Sale, 1912 Premier M.C., 3½ h.p., with Sturt Archer 3-speed gear, free engine, 1912 Lucas h and Jones speedometer, ridden 600 miles; owner to sea; £45.—Box L8,324, The Motor Cycle Offices, Tudor St., E.C. [3]

4½ h.p. Centaur-Minerva, competition winner 42 20th, Fit-all 2-speed, Bosch, sight feed pump lubrication, spring forks, Lyco saddle, tools, machine practically new condition, with sidecar; £3242, Desboro' Rd., High Wycombe. [3]

RUDGE, 3½ h.p., April, 1912, T.T. machine, as series include 2 pairs of handle-bars (T.T. tourist), 2 belts, Cowey speedometer, long distance with large filler caps, in perfect condition; cost price £40.—Jackson, Ramillies Barracks, Aldershot. [3]



## MOTOR BICYCLES FOR SALE.

109 Triumph, 3½ h.p., recently rebushed, 1912 piston, good tyres, new ½ belt, new Portland 111 sidcar, topping hill-climber, accessories, £38/10; 4 h.p. Ormoud, Kelecom engine, good tyres, new, very reliable, £14; Palmer cover, 26x24, good, £6; trailer, 25/-—Sydney Lawrence, Bourton-on-the-War. [X9568]

## SECTION VIII.

Hatfield, Essex, Middlesex, Surrey, Kent, and Sussex.

WALKER'S, Harwich,

Can supply the following 1912 machines from stock:

DOUGLAS, 1912 models, K., instant deliveries from stock. Get our quotations; exchanges.—Walker's, Harwich.

DOUGLAS, 1912 models, G., instant deliveries from stock. Get our quotations; exchanges.—Walker's, Harwich.

TRIUMPH, 1912, free engine models; instant deliveries from stock. Get our quotations; exchanges.—Walker's, Harwich.

NEW Hudsons, 1912-13 models, fitted with 1913 Armstrong 3-speed gears and kick starters; instant deliveries; get our quotations.—Walker's, Harwich.

BRADBURY, Enfield, B.S.A., 1912 models; instant deliveries.—Get our quotations; exchanges.—Walker's, Harwich.

DOUGLAS, 1911½, fixed engine, run only 800 miles, as new, £30; Rex twin, 1909-10, fast, powerful, beautiful condition, £20; others equally cheap; write now lists; offers invited. Get our quotations; exchanges.—Walker's Motor Depot, Harwich, Essex. [5597]

HENDY Hobart, brand new, shop-soiled only, £25.

ENFIELD, 6 h.p., sidcar model; immediate delivery. The Agents.

ENFIELD, 2½ h.p., 2-speed; immediate delivery.

NEW Hudson, all models in stock.

WRIGHTS, 6 h.p.; in stock, no waiting.

MERYA, 4½ h.p., mag., complete with sidcar; £28.—The Croydon Motor Mart, 86, South End, Croydon. Tel.: 797 P.O. [X9575]

CENTAUR, 3½ h.p., long bars, low; bargain, £8/15.—108, Camberwell Rd. [3916]

SALES.—Triumph, 1911, free engine model, new condition, all accessories; £41.

SALES.—New Hudson, 2½ h.p., 1911 model, J.A.P. engine, 3-speed gear and free engine; £35.

SALES.—Triumph, free engine model, late 1911, 1912 spring forks, all accessories; £40.

SALES.—N.S.U., 3 h.p., single-cyl., mag., 1911 spring forks, specially built machine, enamelled cross, price £27.

SALES.—N.S.U., 2½ h.p., latest pattern model, Bosch mag., loop frame, rear spring, 2 speeds, free chain, Cowey speedometer, P. and H. head lamp, as new; £37.

SALES.—Excelsior, Chater-Lea, 3½ h.p., low built, h.c., adjustable pulley; £11/10.

SALES.—N.S.U., 4 h.p. twin, late 1910, m.o. valves, 2 speeds, free engine; £30.

SALES.—N.S.U., 3½ h.p., 1908, magneto, spring forks, 1912 B. and B., carburettor, adjustable valves; £17/10.

SALES.—N.S.U., 6 h.p., latest model, twin, with 2 speeds, free engine; £61/15 (the ideal sidcar machine); delivery from stock.

SALES.—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engines, from £15; for Triumph, £6/15, for Bradbury £7.

SALES.—We have a few brand new 3½ h.p. 1911½ S.U. (86x38 Model de Luxa, just delivered fine machine for sidcar work, Bosch mag., 1912 spring forks and other improvements, finished in latest style, complete with stand, carrier, tool case, full set of tools, 37; S.U. 2-speed gears £5/15 extra; Millford Herald decal with No. 1 torpedo body, £7/15 extra; deferred payments, exchanges entertained.

SALES and Co., High St., Acton.—N.S.U., West London district agency. Immediate delivery of 1912 models; liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X165]

HAER-LEA-J.A.P., No. 7, 3½ and 2½ h.p. 3-speed gears, T.T. Rudge in stock.—Below.

1½ h.p. Zenith, 1912, and sidcar, only used 390 miles owing to doctor's orders, spares, £54; 1910 Triumph, £37.—Below.

1 N.S.U., 3 h.p., 2 speeds, in fine condition, and 1st, £34; 1911 2½ h.p. New Hudson-Jap, 3 speeds, go-anywhere machine, £34/15.—Crow Bros., 10, 12th St., Guildford. [3952]

2 N.S.U. clys., Simms-Bosch mag., excellent condition; £4.—C.B.B., 18, Calkehorpe St., London. [X71]

1½ h.p. N.S.U., perfect order, new tyres in June; £10.—94, St. Saviour's Rd., Croydon. [3706]

# The Humber Depot

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## Henry Garner Ltd.

Opposite G.P.O.,

### BIRMINGHAM,

Is the very best second-hand market in the Midlands.

*Second-hand machines in first-class running order and superb condition at great bargain prices. The following are samples:—*

Ariel, 3½ h.p., 1911  
Variable pulley and decompression 36 0 0

Douglas, 2½ h.p., 1911  
Two speed gear, handle starting 36 0 0

Humber, 3½ h.p., 1911  
Single speed. Lamp. Horn, Generator .. .. 30 0 0

Humber, 3½ h.p., 1911  
Two speed, all accessories .. 38 0 0

Humber, 3½ h.p.  
Brooklands model, chain drive.. 26 0 0

Humber, 2½ h.p., 1911  
T.T. Armstrong 3 speed, special machine .. .. 37 0 0

Humber, 2 h.p., 1911  
Armstrong 3 speed, as new .. 33 0 0

Humber, 2 h.p., 1912  
Lady's, Armstrong 3 speed, special machine, all accessories .. 43 10 0

L.M.C., 3½ h.p., 1911  
Two speed, all accessories .. 25 0 0

Humber, 2 h.p., 1911  
Single speed, shop soiled only .. 31 10 0

Zenith, 3½ h.p., 1911  
Gradua gear .. .. 38 0 0

N.S.U. 3½ h.p.  
Single speed, accessories.. .. 10 0 0

All overhauled and guaranteed in perfect running order

*This is a selection only. Plenty of others from £8 upwards.*

*Whatever you want, write or call.*

*Satisfaction absolutely guaranteed.*

*Full stock of new HUMBER machines*

*always on hand, and special sidecars to*

*suit same.*

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### Opposite G.P.O., New St.

#### BIRMINGHAM,

Wires: "Dependable, Birmingham."

Telephone : : Central 7298.

## MOTOR BICYCLES FOR SALE.

DOUGLAS.—Immediate delivery from stock.—Keys, 44, Finsbury Pavement, E.C. [3680]

DOUGLAS, K., slightly soiled; £38.—Keys, 44, Finsbury Pavement, E.C. [3681]

MATCHLESS.—Immediate delivery from stock.—Keys, 44, Finsbury Pavement, E.C. [3682]

NEW Hudsons.—Immediate delivery.—Keys, 44, Finsbury Pavement, E.C. [3683]

B.S.A.—Immediate delivery from stock.—Keys, 44, Finsbury Pavement, E.C. [3684]

B.S.A., only ridden 300 miles; £37.—Keys, 44, Finsbury Pavement, E.C. [3685]

IMMEDIATE Delivery of Douglas, the great little T.T. winner; Matchless, the famous sidcar model; New Hudson, the unrivalled solo-cum-machine; B.S.A., the reliable no-trouble machine, if ordered at once; cash or terms.—From Keys, 44, Finsbury Pavement, E.C. [3686]

BRADBURY, 3½ h.p., standard; £48; in stock.—Agents, Bright and Hayles, Camberwell. [X214]

BRADBURY, 3½ h.p., 2-speed; £55; in stock.—Agents, Bright and Hayles, Camberwell. [X215]

BRADBURY, 3½ h.p., spare parts and repairs a speciality.—Agents, Bright and Hayles, 73, Church St., Camberwell Green. Phone: Hop 50. [X216]

REX, 3½ h.p., h.b.c., 1911 B. and B.; bargain, £10.—Dixon, 24, Anerley Park, Anerley, S.E. [3740]

DOUGLAS, 1912, Model D, not ridden 1,000 miles; £36.—W. Shutes, 3, Wilbury Av., Hove. [X317]

1912 3½ h.p. Win Precision; £36, or exchange sidcar combination.—Flynn, Cotterill Rd., Surbiton. [3826]

TRIUMPH.—1911, standard, perfect condition; £35.—Bounds Garage, 53, Willesden Lane, N.W. [X54]

TWIN Rex, 1907, 2-speed and free, h.b.c., good running order; £17.—13, Maple Rd., Surbiton. [X275]

3 h.p. Fafnir, good condition; bargain, £6/10; new piston fitted; nearest.—W. Body, Biddenden. [3727]

N., 2½ h.p., mag., spring forks, h.b.c.; £14; photo, appointment.—227, Underhill Rd.; E. Dulwich. [X370]

CLYDE, 3½ h.p., low tension mag., running order; £7/10.—Morris, Swiss Cottage, Finchley Rd., N.W. [X2]

PREMIER, 1911, 3½ h.p., 2-speed, P.E.; £35.—Morris, Swiss Cottage, Finchley Rd., N.W. [X3]

2½ h.p. Motor Cycle, good running order; £10.—Cooper, 15, Webb's Rd., Battersea Rise, S.W. [3777]

1912 3½ h.p. 2-speed Centaur, condition as new; £45.—G. Wadden, 6, Quadrant, Weybridge. [X26]

1911 Douglas, standard, new back tyre, done 1,500 miles; £26.—Wadden, 6, Quadrant, Weybridge. [X7]

3½ h.p. Rex, overhauled, B. and B.; £17, or with sidcar.—Billing, 41, Whitbread Rd., Brockley, S.E. [3632]

TRIUMPH, standard, late 1910; £30; complete with accessories.—Apply, Worthington's, Hythe, Kent. [3531]

ENFIELD, 1912, lady's, 2-speed, condition perfect; £37.—2, Williams Mews, Belsize Lane, Hampstead. [3917]

TRIUMPH, 3½ h.p., in splendid running order, all spares; £17.—7, Vale Terrace, King's Rd., Chelsea. [3910]

INDIAN, late 1911, 5 h.p. F.E., little used, original tyres; £40.—J. Rawlings, 26, Gloucester St., E.C. [3888]

TRIUMPH, free engine, Dec. 1909, all spares, etc.; 30 gns.—White, 14, Kingly St., Regent St., London, W. [3457]

3½ h.p. Bat, splendid order, condition, overhauled; £12.—212, offer.—85, The Av.—Bruce Grove, Tottenham. [3671]

2½ h.p. Kerry, B. and B., lamp, mirror, spare Whittle belt, perfect; £7/15.—124, Romford Rd., Stratford. [3884]

4 h.p. Centaur, girder forks, 26 in. wheels, good condition; £10.—Havelock, Western Rd., Boro Green, Kent. [3747]

2½ h.p. Kerry, Amac, h.b.c., new tyres, perfect order, fast, guaranteed; £8/10.—200, Church Rd., Willesden. [X128]

DOUGLAS, 1912, only done 200 miles; cost £42; will sacrifice £36; bought car.—67, High St., Bexley, Kent. [3617]

2½ h.p. Minerva, in running order, low, a bargain, £8/10, or offer.—Athena, Church Rd., Upper Norwood. [3607]

3½ h.p. 1911 Kerry—Abingdon, tyres, tubes, engine perfect, many spares.—8, Mayfield Place, Eastbourne. [X9573]

SPLENDID Zedel, 2½ h.p., low, 26 in. Dunlops, £10; road-racer, cost £10/10 this year, £4.—20, Eglinton Rd., Bow. [3975]

F.N., 2½ h.p., in fine order, h.b.c., spring forks, tubular carrier, kick-up stand; £12.—Perry, Netheriton, Dartford. [3886]

1912 Humber, 3½ h.p., 2-speed, Cowey, run 1,100 miles, new condition; £42.—2, Hillhouse Ed., Streatham. [3777]

RUDGE, 1912, free engine, done 300 miles, lamp, horn, etc.; cost £58, accept £49.—239, Broadway, Crikewood. [3917]



## MOTOR BICYCLES FOR SALE.

£6/10.—Minerva, 2½ h.p., h.b.c., B. and B. carburettor, Palmer tyres, thorough order.—109, Clova Rd., Forest Gate. [3889]

WE Can Give Immediate Delivery from stock of the following new 1912 models; deferred payments arranged.

SINGER, 2½ h.p., 2-speed, control wire covers, £49/2/6; 3½ h.p., 3-speed, £58/15.

L.M.C., 3½ h.p., adjustable pulley, £48; 4 h.p., 2-speed gear, spring footboards, £65.

A.S.L., 3½ h.p. Precision engine, complete h.b.c.; £52/10.

HUMBER, 3½ h.p., Humber-Roc 2-speed gear, foot operated; £52/10.

SWIFT, 3½ h.p., free engine, var. gear, spring saddle pillar; £55/5.

MUNN and Underwood, motor cycle agents and repairers, Junction Garage, 165, Above Bar, Southampton. [X59]

1911 L.M.C., T.T. model, perfect condition; £29, or near offer for cash.—Tibbs, South Rd., Weybridge. [X107]

BRADBURY, 1912, June, free engine, run 200 miles, condition perfect; £45.—Putney Garage, Putney. [X8715]

1912 Phelon-Moore, practically brand new, ridden 700 miles; £52, no offers.—Matthews, pawnbroker, W. Croydon. [X162]

ZENITH, Rudge, and Douglas, all models, for immediate delivery; trade supplied.—Roy, 5, Heath St., Hampstead. [X890]

KERRY, 3½ h.p., low, powerful, just overhauled, new tyres, X'all forks; £10.—19, Woodville Rd., Golder's Green. [371]

KERRY-ABINGDON, 3½ h.p., 1910, standard, fine condition, accessories, and spares.—53, Park Rd., Wandsworth. [365]

8-10 h.p. J.A.P., B. and B., low, very fast, splendid order; £24, or offer.—Lancaster House, Richmond. [366]

5-6 h.p. 4-cyl. F.N., mag., good tyres, good order; £22, or offer.—Lancaster House, Richmond. [366]

3½ h.p. 1912 Ridges in stock, multi-speed gear, pedal starter, free engine, and multi plate clutch model; £60.

3½ h.p. Free Engine, multi plate clutch and pedal starter model; £55.

LARGE Stock of accessories kept; flying mascots 1/3 post paid.—The Surrey Motor Co., Eden St., Kingston-on-Thames. [375]

TRIUMPH, late 1911, nearly new condition, perfect running order; accept £36/10.—51, High St., Tunbridge Wells. [X951]

N.S.U., 3½ h.p., 1910, little used, Whittle, accessories, excellent condition; £23.—295, Garratt Lane, Earlsfield, S.W. [365]

RUDGE, 1912, free engine, only ridden 300 miles; cost £55 in June; 42 gns.—22, Hargrave Rd., Upper Holloway. [X5]

3½ h.p. Minerva, 1908, £15; 3½ h.p. Triumph, 1910, £22; both in excellent condition.—Clifford Cant, Braiswick, Colechester. [0140]

WANDSWORTH.—Great sacrifice, brand new R.N. 4 cyls. 10 months' guarantee; opportunity £45 secures.—Below.

WANDSWORTH.—Humber, 1909, 3½ h.p., m.o.v., mag., 2 speeds, Druids, handle starting; £28/10.—Below.

WANDSWORTH.—Roc, 1909, m.o.v., mag., 2 speeds, Druids, handle starting, perfect; £26.—Below.

WANDSWORTH.—Roc, m.o.v., mag., 2 speeds, handle starting, smart machine; sacrifice, £23/10.—Below.

WANDSWORTH.—N.S.U., 1909, 6-7 h.p. twin, mag., free engine, spring forks, runs fine; £18/10.—Below.

WANDSWORTH.—N.S.U., 3½ h.p., m.o.v., mag., new Whittle belt, all in nice order; £15/10.—Below.

WANDSWORTH.—Singer, 3½ h.p., mag., B.B., h.b.c., in new condition; great bargain, £14/10.—Below.

WANDSWORTH.—Indian, latest 1910 T.T., 5-6 h.p. twin, m.o.v., mag., fast, nice order; £28/10.—Below.

WANDSWORTH.—Enfield-Minerva, 3½ h.p., running; £5/15; ex-changes.—Wandsworth Motor Exchange, Ebner St., Wandsworth Station. [X227]

F.N. 2½ h.p. Lightweight, spring forks, mag., Palmer tyres, lamp, tools, complete; £15.—Peacock, 274, High Rd., Balham. [3663]

F.N., 2½ h.p., excellent order, new tyres, lamp, tools, complete; accept £12.—Peacock, 274, High Rd., Balham. [3664]

3½ h.p. Kerry, mag., var. h.b.c. carburettor, spring forks, Danlop belt, good condition; £15.—56, High St., Bexley, Kent. [3831]

T.T. Triumph, late 1911, perfect condition, trustworthier machine, new lamp, horn; £36.—35, Denman Rd., Peckham. [3807]

5 h.p. Roc-Peugeot, 1910, 2-speed, Bosch, Whittle F.R.S. lamp; £26, lowest.—Garaged, Meek's, 254, Acreway Rd., Highbury. [3840]

## CORDINGLEY

"The Motor Bazaar of the North."

## FOR IMMEDIATE DELIVERY.

SCOTT, fitted with XL All saddle ..... £65  
LYNO, 5-6 h.p., with sidecar ..... £84  
DOUGLAS, Model K ..... Offers  
WAG, Multi ..... £60

## HARDEN CYCLECAR

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## SHOP-SOILED BARGAINS

MUST BE CLEARED.

	Usual Price	Clearance Price
BAT-J.A.P., 3½ h.p., P. & M. 2-speed, chain drive, handle-starting, 2½ in. studded tyre rear, spare exhaust valve, complete with lamp, horn, generator, and sidecar	£67 10	£40 0
One CENTAUR, 2 h.p., 3-speed	47 10	40 0
1912 3½ h.p. ROVER, free-engine model	55 5	47 0
One BRADBURY, 2-speed, belt drive	56 6	48 0
One BRADBURY, 2-speed, chain drive	58 10	53 0
One SINGER, 4 h.p., 2-speed, bracket gear, pedal engine starter	65 0	57 10
NEW HUDSON, 3½ h.p., 3-speed	59 17	54 0
One ROVER, 3-speed, sidecar machine	61 12	54 0
One B.S.A., 2-speed	60 0	53 0
BRADBURY, free-engine model	54 10	46 0
One PREMIER, free-engine model	54 17	46 0
One PREMIER, 2½ h.p., free engine	43 7	38 0
One RUDGE, free-engine model	55 0	48 0

No reasonable offers refused.

## SPECIAL TERMS TO THE TRADE.

## SECOND-HAND MACHINES

A Special Bargain.—ZENITH, 6 h.p., 1912 model, Jap engine, variable gear, Hutchinson 3½ in. tyres, fitted with Miller rd cabrio cane sidecar, F.R.S. lamp, generator, speedometer, all tools, spares, etc., a really smart combination; had very little use, and absolutely perfect; owner bought car Cost over £100; accept for sharp sale ..... £70 0

T.A.C., 1911 model, 4-cylinder, shaft drive, 3-speed gear box, absolutely as new, not run 600 miles, guaranteed faultless; cost last August £75; accept ..... £45 0

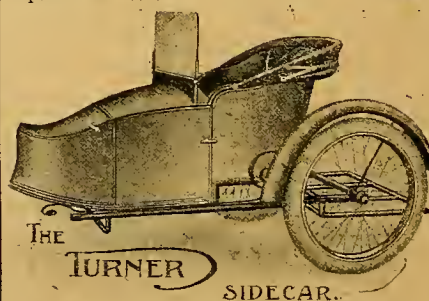
BRADBURY, 3½ h.p., 1911 model T.T., exceptionally fast machine ..... £30 0

RUDGE, 3½ h.p., 1912, T.T. model, special machine for competition work, shop-soiled; clear for ..... £42 10

ENFIELD 1912 model, 2½ h.p., twin, two speeds, free engine, handle-starting, helio, only run 400 miles; perfect; Cowey, mirror, lamp, horn, etc. ..... £44 0

ENFIELD, 2½ h.p., 1911, 2 speeds, with lamp, horn, tools, and registered ..... £30 0

MOTO-REVE, 1910 model, 2½ h.p., grey new tyres, perfect order ..... £20 0



Turner Sidecar, complete as above, green, 2½ in. tyre.

Usual price, £18 10s. Our price, £16.

Whatever you want appertaining to motors, write us. We can save you pounds.

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## MOTOR BICYCLES FOR SALE

1912 Bradbury, 3½ h.p., free engine, run 300 miles, excellent machine, not scratched, new end Jap £48.—Loke, Winchester. [X]

TRIUMPH, 1912, 3½ h.p., free engine model; immediate delivery; £55.—P. Spearman, Bridge Bishop's Stortford. [3]

NEW Hudson, 2½ h.p., 3 speeds, only ridden 200 miles; 40 gns.; ditto, 3½ h.p., quite new, 57 gns.—P. Spearman, Bridge St., Bishop's Stortford. [3]

CHATER-LEA-J.A.P., 4 h.p., 1910 (late), 1912 Palmer cords, Bosch (gear), lamp, horn, tools, offer.—240, Bow Rd., E. [3]

TRIUMPH, 1911, fitted with Mahon clutch, horn, lamp, and generator; £36, no offers.—Moss, 1, St. George's, Primrose Hill, N.W. [3]

1912 Rudge, just as new, Cowey, lamp, and lamp, £11/10, fitted with Palmer cord; offer.—Forest Drive W., Leytonstone. [3]

1912 Humber Lightweight, mag., lamp, spares, new; bargain, £25.—Fuller, 2, Rosemount, Finchley Rd., Hampstead. [3]

1911 Triumph, in excellent condition and on tyres unpunctured; £55, bargain.—Maths pawnbroker, W. Croydon. [X]

24 h.p. F.N., B. and B. h.b.c., tyres unpunctured, condition perfect everywhere; £9.—G.R., 10, Al St., Osney Rd., Old Kent Rd. [3]

DOUGLAS, 1911, splendid condition, accessories £27/10, or exchange 3½ h.p. machine—Pig-Tails Malbr. oks, E. Molesey, Surrey. [3]

MOTOSACOCHE, 1909, mag., accessories, excellent condition; any trial; £15.—N.C.T., Fench Southborough, Tunbridge Wells. [3]

3½ h.p. Triumph, free engine, excellent condition, £32, no offers; 3½ h.p. Humber, £25; 3½ h.p. Bradbury, £37/10.—Jeffery, High St., Guildford. [3]

3 h.p. N.S.U., m.o.v., low built, dry cell, 2 h.p. enamel and plating perfect, lamp, horn, and tools; any trial.—106, Church St., Chelsea. [3]

CHATER-LEA, new, No. 7, 6 h.p. J.A.P. engine, ready for delivery.—To be seen at showrooms, Cars, London Agency, 53, Goldhawk Rd., W. [3]

F.N., 2½ h.p., 2-speed, shaft drive, good as new, on little machine, Jones speedometer, all tools, spares; £27.—151, Beulah Hill, Upper Norwood. [3]

2 h.p. Vaf, Amac carburettor, trembler coil, horn, and boards, good condition; £6, or nearest offer.—181, Mayall Rd., Brixton. [3]

1911 Triumph, perfect condition, tyres and belt with spares and tools complete; £35, or near offer.—10, Norfolk Rd., Dorking. [3]

HUMBER, 1911, 3½ h.p., 2-speed, and sidecar, 1 foot, spares and accessories; £40, or offer.—Parish, Primrose Hill, Chelmsford. [X]

3½ h.p. Rex, Bosch, B. and B., lamp complete, etc., splendid condition; sacrifice at £18/10.—Falter, 102, Hangerston Rd., N.E. [3]

4½ h.p. Twin Minerva, very low, everything lat £22, powerful, grand condition; £15/10, or exchange.—137, Rye St., Bishop Stortford. [3]

DOUGLAS, 2-speed, clutch, new May; cost, £22, extras, £27/10; perfect, done 600 miles; offer 2, River View Gardens, Barnes, S.W. [3]

3½ h.p. N.S.U., 2-speed, and free, mag., lin. Whit B. and B. h.b.c., in good order; £17/10.—F. Wood, Gloucester Rd., Walthamstow. [3]

1912 Bradbury, free engine, and sidecar, had a little use, all as new; best offer over £25 secures.—189, Church Rd., Willesden. [X]

5-6 h.p. Twin, X'all spring forks and saddle, Hutchsons heavy tyres, excellent condition; £15, or exchange.—12, Loughborough Rd., Brixton. [3]

MOTOSACOCHE, 2½ h.p., 1912, almost new, ridden few miles; cost £40, sell £30; no offers.—W.G. 627, Barking Rd., Plaistow, London, E. [X]

3 h.p. Quadrant, B.B. carburettor, Clincher and front, new Dunlop back, engine perfect; £12, no offers.—14, Oakland Rd., Dovercourt. [3]

MINERVA, 1½ h.p., in grand running order, 2 h.p. Palmer, new accumulator, etc.; £6; would 15 miles.—44, Union Grove, Clapham. [3]

PEUGEOT 6 h.p. twin, 1911 Bosch, free engine, spring forks, Chater frame, low and fast, perfect condition.—69, Greenside Rd., Croydon. [3]

HUMBER, 1912, new July 1st, 2-speed, free engine only ridden 400 miles; cost £52/10, equal to £46.—Humber, 11, The Leas, Folkestone. [3]

MOTOSACOCHE, 1910, 2 h.p., mag., 2 h.p. head light, footrests, Druids, guaranteed; £12, lowest.—67, West Side, Clapham Common. [X]

DOUGLAS, 1909, 2½ h.p., new covers, just been overhauled, guaranteed good condition throughout price £22.—Rose, Motor Works, Uxbridge. [X]

5-6 h.p. Chater-Sarola Twin, new 26x2½ Continental B. and B., and Whittle, dry battery ignition; £14.—14, Cavendish Gardens, Clapham, S.W. [3]

3 h.p. Humber, free engine, low position, h.b.c., battery in good running order, will pull side seen any time; £5.—Rosemount, Stanley Rd., S.W. ford, N.E. [3]



# THE MOTOR CYCLE

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**August 22nd, 1912.**

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York.  
 PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.;  
 Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.),  
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### Lessons of the Six Days' Trials.

**L**AST week's thousand miles trials of the Auto Cycle Union proved to be the biggest and best organised event in the motor cycle world. The large districts covered and the reliability demonstrated in all weathers should do much to help forward the motor cycle movement. We referred last week to the special points and departures in design of the competing machines, for it is usual for manufacturers to put their models of the ensuing year through the August reliability test. Dealing now with the lessons to be learned from the results of the trials, we gather from observations made whilst riding with the competitors that, in such counties as Somerset and Devon, a change-speed gear is an indispensable attainment, but that any sort of gear will not do. By this we mean that a gear giving only a small reduction on the low speed is little better than a single gear. Many competitors who have marks recorded against them for failures on hills did not lose them owing to lack of engine power, but simply owing to being unable to use it through the medium of a low gear ratio. It is, of course, generally agreed that three speeds are better than two, and as a further proof of this contention we may cite an instructive experience on the first day. A strong easterly wind was blowing in the teeth of the riders while crossing Dartmoor. The two-speeders were noticed with their backs down doing their utmost to keep on top gear. The three-speeders, on the other hand, dropped to their middle ratio and got along comfortably. But against some of the three-speeders it may be said that the lowest ratio is not low enough to ensure an ascent of Porlock under conditions such as obtain on a wet day. In

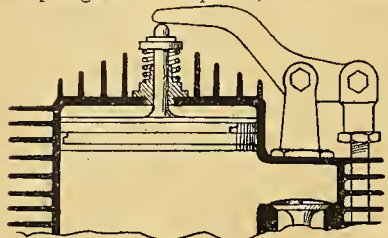
other words, the low is not an "emergency" gear as it should be.

In praise of the two-speeders it can truly be said that several successful examples more than held their own with the three-speeders. They could climb 90% of hills on top, and had recourse to the low gear for emergencies only. The variable pulley gears suffered by reason of the fact that their lowest gears were too high for precipitous hills. We pointed out last week the general improvement in protecting the belt and other vital parts of the machine; and our remarks are amply confirmed by the results, for only a single case of failure on hills due to belt slip came under our notice, and the weather was unusually bad. Belts, too, have been improved, several competitors actually never had occasion to touch them from start to finish. It should, however, be stated that chain-driven machines scored decisively, as an examination of the results will show. Altogether the trial was a huge success, but a suggestion we should like to make for next year is to award a prize for personal appearance. Some of the competitors were a disgrace to the pastime. Some carried tubes wrapped round their necks, belts around their waists, and oil tins secured by string. Such methods offend rather than attract new converts. It has been argued that the result of a strenuous trial embracing such a number of freak hills and on which there were so many failures may have a tendency to deter intending purchasers, but it must be remembered that these events are held to improve the all-round efficiency and reliability of machines, and that to settle the awards there must be an elimination. Many of the machines which failed on abnormal hills would suit more level districts.



### THE INCOMPLETE FOURTH STROKE.

The appended diagrammatic sketch serves to explain the ideas of an eighteen year old correspondent on the subject of cylinder scavenging. It will be seen that a separate piston is placed in the head and operated by cam gear through an overhead rocker. (In the specification a forked rocker, operating two plungers on the piston, is mentioned,



Diagrammatic sketch of auxiliary piston.

but for simplification only one is shown in the sketch.) At the end of the exhaust stroke, the auxiliary piston would be forced down and thus expel the last remnant of exhaust gases. The idea is quite ingenious, but is, unfortunately, not new, and the experiments that have been made in this direction have mostly failed on account of the force required to start the auxiliary piston from rest.

### A LUBRICATOR AND FILTER.

Several novel fittings to a motor cycle were recently brought to our notice by Mr. J. Bates, of West Hampstead, London. Made according to his own idea, they are fitted to a 1910 clutch model Triumph, and, we are told, act very satisfactorily.

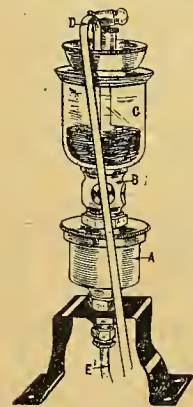


Fig. 1. An automatic lubricator.

The first, an automatic lubricator, is shown in fig. 1. To prevent oil being blown back on to the sides of the glass bowl by the pressure from the crank case, as is the case with most drip feed lubricators, a cylindrical brass box A has been interposed between the inlet to the crank case and the glass bowl, on to the sides of which the oil is flung. In the hollow portion B a jet is placed to further minimise the tendency for oil to be forced back into the upper portion of the lubricator.

The method of working is as follows: At the bottom end of the hand-operated pump is a two-way tap, so that the oil may be pumped into the crank case direct

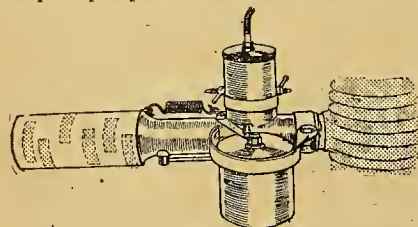


Fig. 2. A carburettor air filter.

or into the lubricator. Before starting on a ride a quantity of oil is pumped up into the glass bowl C through the pipe D; thence it is sucked to the crank case by way of the box A and lower tube E.

Fitted to the same machine is a Binks two-jet carburettor, to the air inlet of which is fitted a novel air filter. An old carbide tin forms the framework. In this six or eight slots have been cut, and the end has been removed, all the openings being then covered with fine wire gauze. The whole is clamped on to the end of the trumpet-shaped adapter by means of a spring, as shown in fig. 2. Round the top of the float chamber, as will be seen, Mr. Bates has fitted a guard of flat brass to prevent the rider's trousers catching the lid of the float chamber and pulling it off.

### A LONG CONTINENTAL RIDE.

A French motor cyclist, named Lucien Psalty (whose photograph is reproduced on this page), residing in London, sends us particulars of a 3,000 miles Continental ride accomplished in twelve days. Starting from London recently, he went

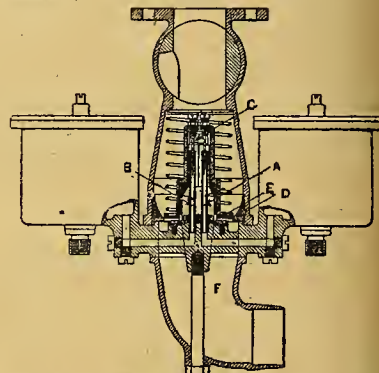


Lucien Psalty and his 3 1/2 h.p. Triumph, on which he recently accomplished 3,000 miles in twelve days.

by road to Newhaven, crossed to Dieppe, and thence by road to Paris, Bar-le-Duc, and Nancy to Strasbourg, thence to Belfort, and through Doubs, after climbing the Ballon d'Alsace, on to Neuchâtel (Switzerland), and back into France to Pontalier. Again crossing the frontier into Switzerland he visited Lausanne and Geneva, returning to Lyons by Bellegarde and Culoz. After Lyons the route was Valence, Montelimar, Avignon, Marseilles. Nîmes, Salon, through the provinces of Aveyron, Lot et Garonne, and Gironde. Thence to Nantes, Rennes, Mont St. Michel, Caen, Rouen, Paris, and back to London via Dieppe and Newhaven. He rode a Triumph motor bicycle. His international travelling pass, No. 1992, issued by the A.A., shows the Customs date stamps at various towns on the route.

### HAMILTON BIFUEL CARBURETTER.

This carburettor consists of two separate fuel nozzles A and B mounted side by side within a small choke tube C leading into the mixing chamber of the carburettor. Each fuel nozzle is in communication with a separate float chamber of the usual construction, one being fed with paraffin and the other with petrol. Mounted upon the central choke tube, and arranged to operate as a dashpot or damping device, is an air valve, held in its normal or shut position by a suitably proportioned spring or by a dead weight. This air valve is in the form of a circular disc, and is arranged to open by movement upwards against the action of the spring. The air valve E carries a bridge piece in which are adjustably mounted two tapering needles, which coincide with and slide within the orifices in the top of the fuel nozzles, thus forming variable fuel valves. The walls of the cylinder D are so shaped and proportioned that for any position of the air valve the ratio of openings presented respectively by the air valve and the combined fuel valves remains constant.



The Hamilton Bifuel carburettor, designed to consume petrol and paraffin, which are mixed at the jet in the desired proportion.

In the first place, the respective areas of the two fuel nozzles are so proportioned as to give the required percentages of petrol and paraffin required in the mixture. Suitable needle valves are then fitted to the bridge on the air valve. With the main air valve in its normal or shut position, the needle controlling the paraffin orifice is screwed down until in this position the paraffin is entirely shut off, whilst the needle controlling the petrol orifice is adjusted until just enough petrol is allowed to pass to carburet the small amount of air passing through the central bypass or choke tube. We have thus what is virtually a very small petrol carburettor sufficient to feed the engine running slowly on nearly closed throttle with no load, and also sufficient to start up with from cold, but directly the throttle is open the air valves opening automatically, bring into simultaneous operation both the petrol and paraffin orifices, and the engine continues to use the mixed fuel in the proportions as decided by the respective areas of opening of the two nozzles.

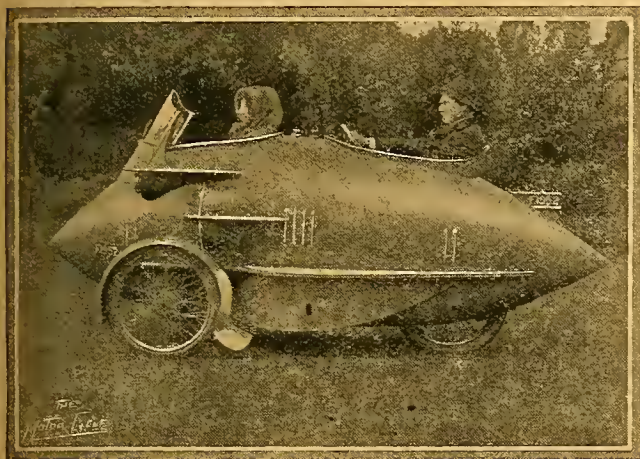
It has been found in practice that it is possible to run the Bi-fuel carburettor economically with 60% of petrol and 40% of paraffin without any further heating than that provided by the usual hot air intake pipe F.



## A STREAMLINE CONVERTED TRICAR.

**W**E have received some interesting photographs of a conversion by Mr. H. G. Featherby, an engineer of Bishop's Stortford, who writes as follows:

"I am sending you herewith some photographs of a tricar which may perhaps be of interest to some of your readers. I use the machine constantly as a business runabout, and in designing the present body I have kept to streamline form as far as conditions



Torpedo bodied tricar constructed and used by Mr. Featherby.

permit. The external fittings are as few as possible, and the wind resistance practically nil; in fact, just as good time can be made against a gale as with it.

"The underbody, which is of sheet iron, is continuous with the shell, and the clean run from end to end thus obtained renders the machine almost dustless. The shell is built of 3-ply wood,  $\frac{1}{4}$  in. thick, on a light bent wood frame. Bucket seats are slung from the coamings round the hatchways, and all the controls and attachments are inside.

"The engine is a twin Fafnir, 80 mm. bore, water-cooled, the radiators being arranged in two sets, in close fitting boxes, each side of the body. Large scoops catch and convey cold air to the boxes, and this finds its exit either through the louvred plates to the outside, or through controllable openings into the body for warming purposes in cold weather. The small louvred plates fore and aft are for body ventilation.

"The height of the glass screen can be regulated by sliding it in its frame. The lamps are electric, which permits them

being fitted in neat sockets. The top of the lamp sockets forms a step for access to the passenger seat. The tail lamp is inside the body altogether, the rays being projected down the fin-shaped box, the sides of which are cut to form the registration number. A white diaphragm down the middle of the box renders the sign quite readable by daylight, as may be seen by the photograph, and when illuminated at night it is very much clearer than the usual painted plate with outside lamp.

"The tanks are slung to the underside of the deck between the hatchways, the fillers being brought up through. The engine is fitted with a Polyrhoe carburettor and a Mea magneto, and the transmission is by chain through a 3 speed and reverse gearbox.

"When the machine came into my possession it had come off decidedly second best in an argument with a farm cart.

"If any of your readers possess a heavy tricar of this now almost obsolete type, I can recommend a conversion somewhat on these lines. It makes a most comfortable and handy runabout which handles much more like a four-wheeled car than a three-wheeler. There is an almost entire absence of the roll which is so pronounced on most tricars. There is plenty of leg room and ample space for adjustments."

This conversion is made more than usually interesting from the fact that the makers of the Raleighette the Raleigh Cycle Co., Ltd., Nottingham, are no longer makers of motor cycles. It is a thousand pities that this firm relinquished this branch of their business, as the Raleighette was one of the best tricars that was ever turned out.



End view of body fitted to an old Raleighette.



J. P. Haswell (3½ h.p. Triumph sidcar) leaving Taunton in the A.C.U. Six Days' Trials.





### The Warwickshire Battalion of Motor Cyclists.

SOME few months ago I was able to tell my readers that a cyclist battalion was to be formed in Warwickshire, and some two months later this statement was officially confirmed. That energetic officer, Colonel Ludlow, is to be honorary colonel, and we now have it on his authority that the new regiment is to consist entirely of motor cyclists. I am under the impression that Colonel Ludlow's hopes have outstripped the facts, and that the Director of Military Training and Organisation has not yet definitely considered the proposition of forming this battalion entirely of motor cyclists. Moreover, I am very doubtful whether, when he does come to a decision, it will be entirely on the lines foreshadowed by Colonel Ludlow.

### The Arming of Motor Cyclists.

The idea is that there will be some three motor cycles, and that every private will have a pillion seat fitted on the back carrier on which a second man can ride as passenger. The officers and N.C.O.'s will presumably not carry passengers. If any organisation on these lines is finally adopted, then one cannot too strongly urge that the passenger should be armed with a "Rexer" automatic rifle. This gun is capable of firing about 220 rounds a minute, and can be fitted with stays to act as a support, for, weighing just over 20 lbs., it is too heavy for a man to hold without some form of support. Experiments in foreign armies have taught that the ideal arrangement is to tell off two men for each "Rexer." One carries it and fires it, the other carries the ammunition and observes the fire; and in the case of this motor cyclist battalion the passenger would be the man with the gun, since the man who steered would make very poor shooting after holding the handle-bars for a few miles, especially on slippery or badly-made roads.

### Captain de Putron's Scheme.

This idea of using motor cyclists in conjunction with automatic rifles is not new; it was formulated a couple of years ago by Captain de Putron, one of the staff instructors at the School of Musketry, Hythe. In his monograph on the subject, which is now reposing in a pigeon-hole at the War Office, he suggested that these motor cyclists should be raised in companies of forty men, each company being attached on mobilisation to a cyclist battalion guarding the coast. He argued, and very soundly, that this would place in the hands of the officer commanding an extremely mobile unit with immense fire power which he could throw at any threatened point in a very short space of time. These men would keep the enemy busy whilst the cyclist battalion was concentrating and proceeding to oppose the landing. Covered by the battalion, the motor cyclist company would then be able to disengage itself and replenish ammunition supplies

### Pillion Seats.

At that time motor cycles were neither so powerful nor so reliable as they now are, and he overlooked the possibility of carrying men on the carrier. I would now suggest that motor cycle drivers should be armed with automatic pistols for their own defence; in an emergency they would then, to a small extent, be able to provide a covering fire for their Rexer comrades when the time came for these to extricate themselves from the fray. The principal drawback to the pillion idea is that if anything goes wrong with the bicycle it throws two men out of the fighting instead of one. That was one reason why the tandem bicycle was a failure from the military point of view.

### The Sordid Question.

Of course the question of expense is one that will weigh heavily with the authorities in giving their sanction to the raising of a motor cyclist battalion. At present the allowance to cover wear and tear, petrol, and insurance is 6s. 6d. a day, and it is now being altered to 8s. Three hundred times eight shillings for a fifteen days' camp adds up to quite a biggish sum, and each passenger machine will probably want a larger allowance than even eight shillings. There is, however, a way out of this. There would be no military value in taking the battalion out fifteen days running on a motor cycle joy ride. For the purposes of training it would be quite sufficient to motor down to camp and back again with, say, two days during the training when the motors would be required to go any distance at all. Therefore an allowance of £2 per machine for annual training would be about the correct amount, and this would total up to just about the same sum now allowed to a cyclist battalion of 525 men for hire of their cycles.

### Army Manœuvres.

All motor cyclists who wish to attend the Army manœuvres have still three days in which to join the Legion of Cyclists and to send in their applications. The cycle allowance will be on the 8s. scale, and those men not attached to a unit for messing and sleeping will draw another 8s. a day to defray living expenses.

The full period of manœuvres will be from September 8th to 20th, both days inclusive, but those unable to come for the whole period should state exactly what days they can come for; they will stand a good chance of being able to come out, but of course men applying for the full period will get the preference.

Applicants should write direct to the Hon. Sec., The Legion of Cyclists, 128, Jermyn Street, and enclose 1s. for postage and telegrams, etc., and 1s. 4d. for the Legion badge.

The list of applicants will be made up definitely on August 25th.



# Occasional Comments by "Ixion"



## Useless Straps.

It is astonishing that so many firms supply various cases designed for attachment to motor cycles either by leather straps or by ordinary bolts and nuts. I have warned the trade until I am tired that only one attachment is any use so far as my experience goes, namely, a clip composed of a flat steel plate, a bent steel plate, two D nuts, and two bolts. Please print the "D nuts" in heavy type, Mr. Compositor, for they are the heart and soul of the device. This attachment cannot break or shake loose, and in this respect it is unique in my experience.

## Some Transmission Notes.

I see Mr. T. F. Maw prefers the complete chain drive to that hybrid pattern which employs a belt as its primary unit. Each to his whim. The curious obsession which attacks most chain-drive enthusiasts is their stubbornness in ignoring the fact that British riders have always cast a heavy majority verdict in favour of the belt; and that consequently theory is a matter of small moment. Personally I am again experimenting with chain drive for next year. I make it a rule to buy at least one chain-driven machine every other year, but my last two experiences were unhappy. I selected machines of leading makes in both instances. On the first occasion my machine was technically disfigured by the fact that two of its chains shared a common adjustment. I will not say—at this lapse of time—that I had to adjust my transmission oftener than is the rule with the belt, but I will say that the adjustments were much dirtier, and occupied more time, and that even then my chains were never all three in perfect adjustment.

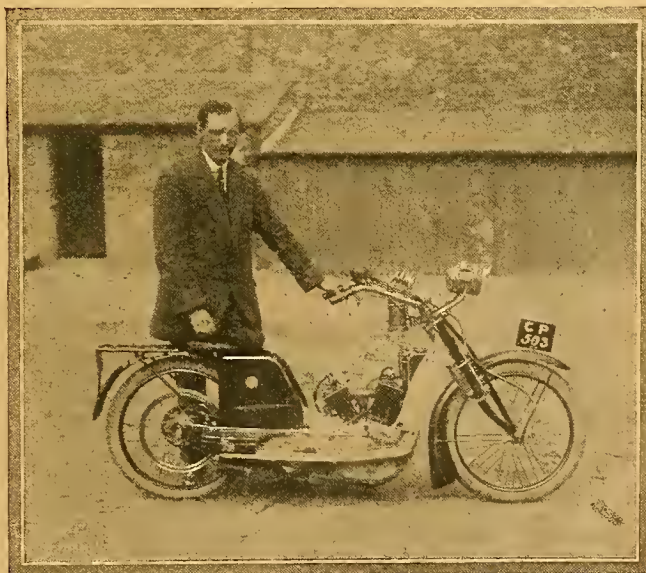
## Experiences with Chain-driven Machines.

On the second occasion I had a two-chain machine, and I adjusted its transmission eight times in the first month, after which I had to purchase new draw-bolts, as the threads were stripped, and the flimsy nuts badly burred. I then sold the machine for reasons unconnected with its transmission. In spite of these somewhat depressing experiences with the drive which a minority of the riding public are always applauding, I show my fairmindedness by ordering a chain-driver for next year. This machine again is disfigured by a grave technical flaw in its transmission design, but its public performances, and the praises showered on it by many riders, lead me to hope that this defect is less serious on the road than it is on paper. I am afraid I am an incorrigible, prenatal belt enthusiast, Mr. Maw; but if I enjoy a season of entire freedom from transmission troubles with my 1912 chain-driver, I hope I shall be frank enough to say so. The arguments in Mr. Maw's letter will only bear one interpretation, and that will not be agreeable to him. If that item of chain drive which the general public are clamouring for is the weakest item, obviously the public are being compelled against their will to resort to a length of chain for belt reasons, and are not at

all spontaneously fascinated with chain drive in itself. The facts are perfectly simple. A majority of motor cyclists clung to the direct belt drive as long as possible; but the vagaries of indiarubber belts with big engines in wet weather competitions, and the failure of direct belt drive on small-engined small-pulleyed lightweights, made some modification inevitable.

## The Two Alternatives.

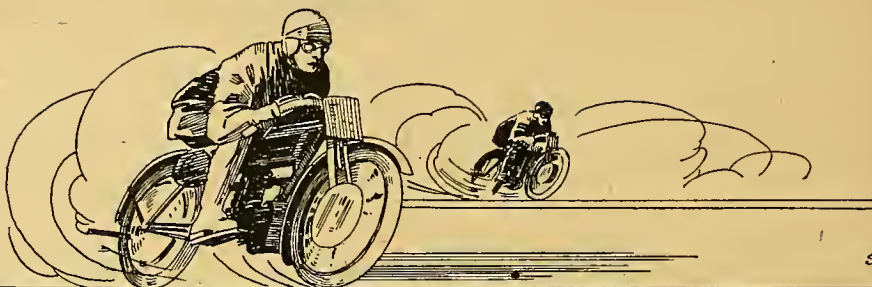
There were two alternatives—to scrap belts altogether, and adopt a complete chain drive; or to relieve the belt of its one and only weakness. The latter escape seems the more popular. In answer to another letter, I still claim the credit of popularising the combined drive for Douglas Bros. Others undoubtedly utilised it before the Bristol firm, but their machines have made its merits public property. If it were not for the counter-shaft gear box, it is quite possible that a shielded belt would have been the more popular solution; for with a very little ingenuity in the way of weatherguarding, the belt would have solved all problems on a single-gear 3½ h.p., whatever might have been needed on the small pulleyed lightweights. But the growing popularity of the counter-shaft gear box indicates a chain as the primary item; and the referendum verdict of twelve years indicates a belt as the secondary item. Of course, it may all be mere prejudice, and the chain may ultimately oust the belt. But I think it is sound judgment, founded on the simplicity of belt adjustments, the stupidity of the average amateur, who cannot trust himself to attend to chains, and the cleanliness of a (rubber) belt as opposed to the grease which haunts a well lubricated and well-used chain.



A.C.U. SIX DAYS' TRIALS.  
F. H. Thornton (5 h.p. Swan). This was one of the best mudguarded machines in the trials.



## QUESTIONS & REPLIES



SRJ

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Legal—Driving to the Common Danger.

**?** I am under the impression that a motorist must have been seen riding to the common danger by a member of the police force before a conviction can be obtained. Is this so? I am sure an answer in *The Motor Cycle* would be of great interest, as many fellow motor cyclists are of my opinion, rightly or wrongly.—R.A.L.P.

Our legal adviser writes as follows: "In reply to the letter from 'R.A.L.P.,' there is no provision under the Motor Car Act that the evidence of a member of the police force is necessary before anyone is convicted of dangerous driving. In fact one witness would be sufficient whether such witness was a police constable or not. Of course, to obtain a conviction for exceeding the speed limit two witnesses are necessary if the speed given is a matter of opinion only, but a single witness is sufficient if the speed is not given as a matter of opinion, but as a matter of fact ascertained by measurement of distance and time."

### Driving Licences.

**?** Being a regular reader of your excellent journal, I should be glad if you could favour me with some information on the following question. I have a driving licence taken out from the L.C.C. on March 19th, 1912, which is made out to me at my address in London. I now find that for business purposes I shall have to live in Cheltenham. Will the L.C.C. endorse it with the new address, or must I take out a fresh licence (and pay 5s.) from the Gloucestershire County Council?—C.F.K.

There is no need for the L.C.C., or any other authority, to endorse your driving licence with the new address, but when you take out the fresh licence in March, 1913, you will have to apply to the nearest police offices to your residence, when a fresh licence will be issued with your new address. In the case of the registration, it would be necessary for you to inform the County or Borough Council with whom your machine is registered of your change of address and send them the registration form for alteration. There is no fee for amending the particulars on the registration form. The authorities are compelled to make this alteration and provide you with a copy of the details

### Magneto Timing.

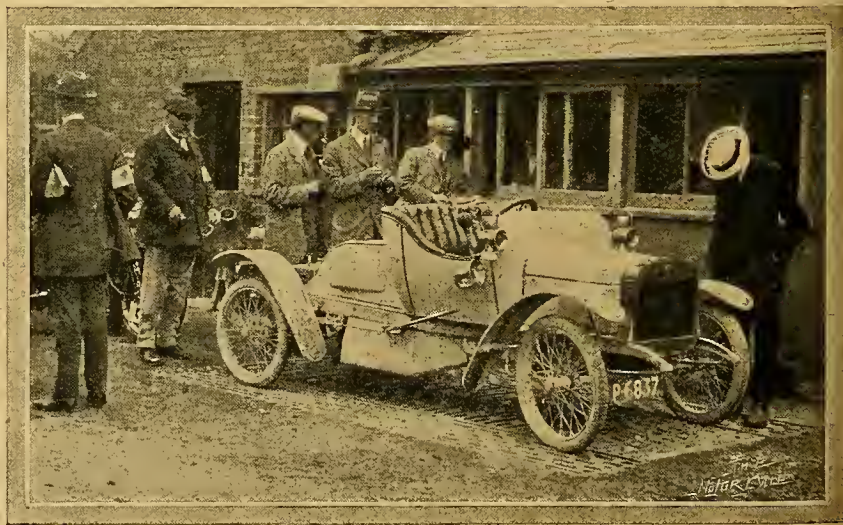
**?** My machine had a fall when I was mounting, but engine went on running for a minute or so, then stopped, the driving chain coming off. I failed to get it to work again; firing in the exhaust pipe. I took the engine down and found two piston rings broken. (1.) Do you think that was the cause of firing in exhaust? (2.) The timing I found incorrect, the spark occurring when piston was just down. I have timed it when piston is in, on downward stroke. Am I right? (3.) The spark occurs on alternate stroke. Is that as it should be?—O.M.

(1.) No firing in the silencer would be caused by an explosion being missed in the cylinder and fired by the next hot gas which entered the silencer. (2.) The driving chain you refer to as coming off is, we presume, the chain which drives the magneto, as you found engine timed incorrectly. The engine would not run at all timed as you mention. To time magneto you should retard lever to full extent, place piston on dead centre of compression and firing strokes, when contact points should be just about to separate. The spark occurs in a four-cycle engine once every other revolution of the flywheel.

### Hounslow to Newark.

**?** Would you kindly inform me the best route from Hounslow to Newark (Notts.)? I want to make as fast a journey as possible, and should be glad if you would give me (1) route avoiding London, (2) through London.—S.L.S.

Your best route would be as follows: Hounslow, past Heston-Hounslow Station, Heston, Norwood Green, straight across the main road to Greenford, where turn left and then right through Greenford Green and Harrow-on-the-Hill. At the bottom of the hill turn right. Through Pipers Green, on to the main Edgware Road; turn down this, and take the turning to the left past Hendon Station, which brings you on to the main Great North Road. Follow this through Barnet, Hatfield, Welwyn, Stevenage, Baldock, Biggleswade, Buckden, Eaton Socon, Stamford to Newark. Through London, follow the main Bath Road right through Hammersmith Broadway, then go down Holland Road, up Notting Hill, turn into Oxford and Cambridge Terrace, and straight on till you come to Lisson Grove; this brings you close to the G.C. station. Go straight into Grove End Road, bear right by a fountain and then left, which will bring you into Finchley Road, where you enter the Great North Road.



A.C.U. Six Days' Trials. The G.W.K. cyclecar on the weighbridge at Taunton. J. T. Wood, the driver, is the central figure of the three just behind the machine.



## Jockey Pulley.

**?** In your "Hints and Tips" I observe the author advises the use of a jockey pulley as a preventive for belt slip. The roads in St. Anstell during wet weather get in a vile condition owing to the china clay traffic, and the belt slipping problem is an important one, especially upon hills. In wet weather I use a  $\frac{5}{16}$  in. Watawata upon my Douglas. Having about  $\frac{7}{16}$  in. to spare I am wondering: (1.) Whether a jockey pulley would be suitable? (2.) Where could such pulley be obtained, and what size pulley? (3.) Which do you consider the most suitable place to fit upon a Douglas "E" model.—J.S.

Why not have the firm's own two-speed gear and countershaft drive fitted? This would be better than a jockey pulley. If you have made up your mind to try a jockey pulley you would probably have to have it made locally. We know of no one marketing such a device to suit any machine. In the case of a Watawata you would have to use a specially made jockey pulley with a groove in the centre to take the heads of the rivets of the large washers, otherwise no doubt noise would be caused. We think the best place to fit it would be on a bracket fastened to the seat tube like the Moto-acche, and it ought to be controllable by means of a Bowden wire or lever so that it could be tightened and slackened according to circumstances.

## Petrol Consumption.

**?** I have recently purchased a  $\frac{3}{4}$  h.p. New Hudson. During my first fortnight I did 540 miles on good roads (about 300 solo and 240 with sidecar and passenger). During this time I used nearly nine gallons of petrol, giving me an average of about 64 m.p.g. Ought I not to do more than this? I have a B. and B. carburetter. I don't know the size of the jet, but it is a large one, and has been on all the time, even when I was riding solo. You must take into consideration the fact that I live in London, and at the beginning of every ride I have a few miles of traffic to get through, which entails constant use of the low gear (10 to 1). Should I try a smaller jet, or would that give me too little reserve power for hill-climbing when using the sidecar with a passenger.—J.P.C.

We do not consider sixty-four miles to the gallon very excessive with a three-speed machine and sidecar. Probably with very careful driving you could improve on it, as it is certainly possible to do more, but if you alter the size of the jet you may reduce the power of the machine on hills, necessitating the use of the low gear for many hills which you now climb on either the top or middle speed. We should advise you to keep ignition advanced as far as possible consistent with the speed, and drive with the throttle lever as far closed as possible, using the free engine clutch to descend all long hills. Of course, you drive with the air lever open as far as possible consistent with obtaining a good mixture. These are the essential points in connection with economy of petrol. The normal jet should be No. 32.

## New Piston Rings.

**?** I have a  $\frac{3}{4}$  h.p. machine, and recently fitted new piston rings. I have also ground in both valves. Compression is not so good now as when I first fitted rings, after only 200 miles. When I had fitted them I was surprised to find compression was perfect, but now it is only really good when the engine is warm. (1.) Do you think the cylinder requires reboring? I do not see why it should, or why was compression so good when I first fitted rings and before they had run at all? (2.) Ought not this to do more on the flat than 35-40? Can you suggest anything to give more speed? I have been altering the carburetter, and have now, I think, got it at its best. My gear is  $4\frac{1}{2}$  to 1. (3.) Why does my engine overheat? It is very hot after a fifty-mile run. I run with spark advanced nearly full and as much air as possible, getting about 95 m.p.g.—W.B.

(1.) Probably either new cylinder or piston is required. You may have been deceived when fitting new piston rings. These would be tight, and what you thought was good compression may have been partly due to tightness of the piston rings. (2.) You do not say the date the machine was built. If it is an old pattern it probably wants new cylinder and piston before it will exceed 35 to 40 m.p.h. and climb hills well. (3.) We cannot tell you why the engine overheats. It may be due to a number of causes. We presume it is quite clean on piston and combustion head; that is to say, it has recently had carbon deposit scraped off. Consumption seems to be about right. Do you think the engine gets hotter than other motor cycle engines after a fifty miles run? You must bear in mind that they all get fairly hot

## READER'S REPLY.

I have noticed in "Questions and Replies" a query by "H.R.H." concerning sudden loss of power on hills. I have experienced exactly the same symptoms with my motor cycle and sidecar. I happened to change my plug (originally a Bosch) and met trouble. I use Price's lubricant, and have always found it satisfactory. The engine, though apparently seizing up, ran quite free when pedalled on the stand, and ran quite well after half a minute's rest. I diagnosed the trouble to be due to the new plug having long electrodes, which, evidently, became red-hot and set up slow combustion of the fresh charge on the compression stroke. I put in the original plug and ran over the course where I previously experienced trouble—result no loss of power nor overheating. I had previously lubricated well, and on this test I drove hard and kept the oil consumption down. I trust my experience will be of some use to "H.R.H."—G. W. TRENDALL.

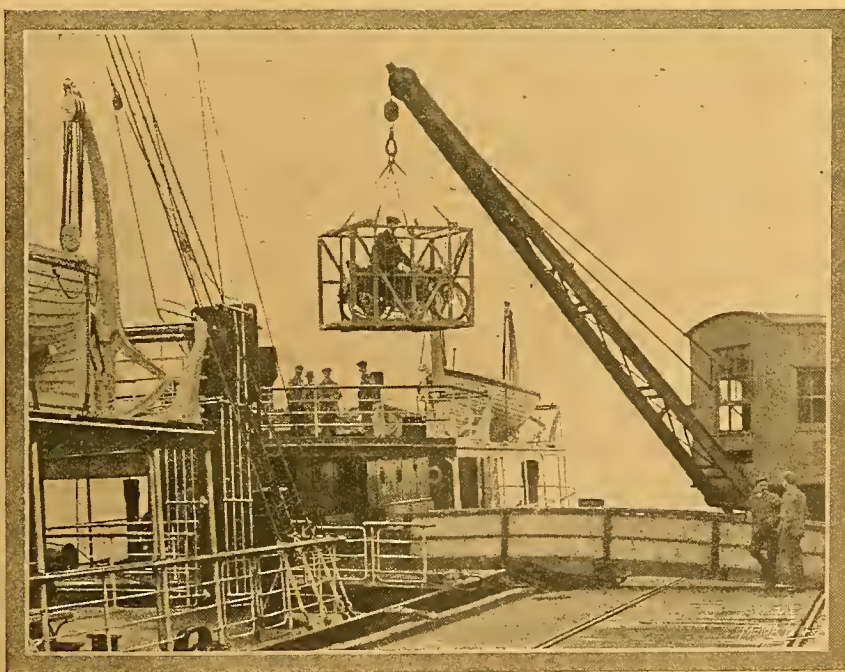
## EXPERIENCES WANTED.

"A.C." (Birmingham.)—5-6 h.p. A.J.S. and 5-6 h.p. Blumfield, both with sidecar.

"R.C.G." (Bridlington.)— $\frac{3}{4}$  and 6 h.p. Zenith Graduas with and without sidecars.

"C.F." (Doncaster.)—(1) Bowden two-speed and (2) Haden three-speed on  $\frac{3}{4}$  h.p. 1912 Triumph.

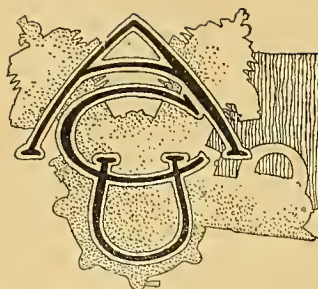
If "J.C." (Sandiacre), "Knarf" (no address given), "H.W.S." (Bacton-on-Sea), "R.R.T." (Aldershot), and "A.E.B." (Eastbourne), will comply with our rules and send stamped addressed envelopes, their queries will be answered.



## BARRED!

An incident of the English-Dutch Trial; unloading F. W. Barnes's Zenith-Gradua sidecar at the Hook of Holland. The photograph is reminiscent of the barred cage on the Zenith Co.'s stand at the last Olympia show.



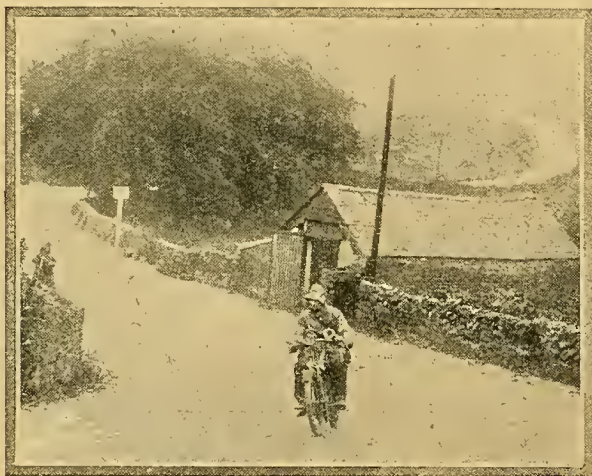


## SIX DAYS RELIABILITY TRIALS

*Taunton as a Centre*



THE 1,000 Miles Trial of 1912 will be remembered for long to come. The severity of the Devonshire hills, for years avoided by the average tourist, account for a big proportion retiring from the contest, and the survivors losing marks, but, on the other hand, last



L. Cass (3½ h.p. Quadrant), turning the corner at Two Bridges.

week's trial proved conclusively that 50% of present-day motor cycles stop at nothing. Hills with the steepest gradients do not worry the riders, and as for reliability, they can reel off mile after mile, day after day, with clock-like regularity.

### Second Day, Tuesday (continued).

Taunton, Bampton, Barnstaple, Ilfracombe, Lynmouth (slow hill-climb), Countisbury, Porlock, Bridgwater, Somerton, Langport, Taunton Distance, 160½ miles.

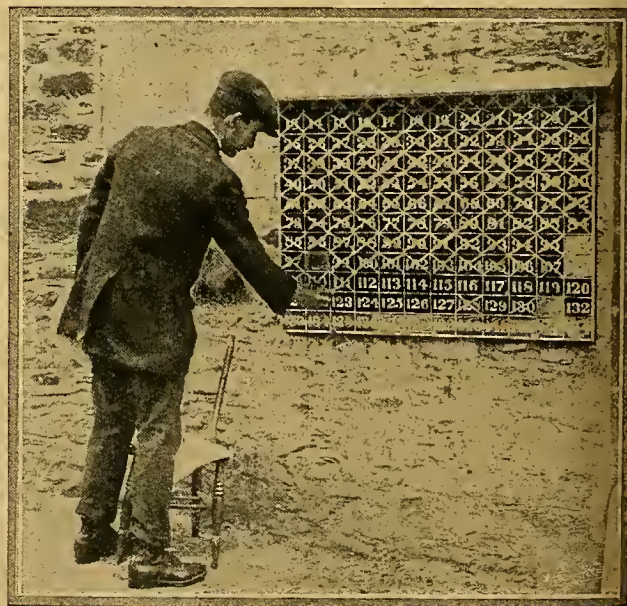
Our last week's report of the first two days' runs left off after the ascent of the tit-bit of the trial—Beggars' Roost, or Barbrook Mill Hill. From the list of successes it would be seen that quite half found the gradient of 1 in 3½—the steepest gradient in Great Britain—too much for their machines. All credit to those who were successful. Long before the tail end of the string had reached Barbrook, the vanguard had commenced the slow climb up Countisbury, after lunching at Lynmouth. Consequently *The Motor Cycle*, with its two representatives mounted on motor cycles—a B.S.A. and P. and M.—is in the happy position of being able to record from personal observation the performances on these two hills.

A clean ascent of Beggars' Roost meant a bonus of 25 marks to the successful riders, but failure did not involve loss of marks. Complete teams which easily accounted for the climb includes the James, Scott, and P. and M.—singularly enough, all chain-driven machines. Lister Cooper on the single-gear Triumph was anxiously awaited by the crowd assembled on the hill, and there was general regret on learning of his retirement owing to an engine seizure. The trouble is unaccountable, and it is worthy of note that this is the first time for years of Six Days' Trials that a trade Triumph has been withdrawn. F. G. Edmond (3½ h.p. Humber) was another who did not reach the hill, it was

subsequently learned owing to his rear tyre continually coming off the rim. C. P. Finn (Enfield sidecar) was also an absentee, and news came through that he had retired. One of the judges, Rev. E. P. Greenhill, riding a Douglas, had a valve rocker break. He was towed some miles by a sporting farmer, who left his hay and got out his motor cycle. Then Major Nicholl towed him to Lynmouth, where Fletcher supplied a replacement.

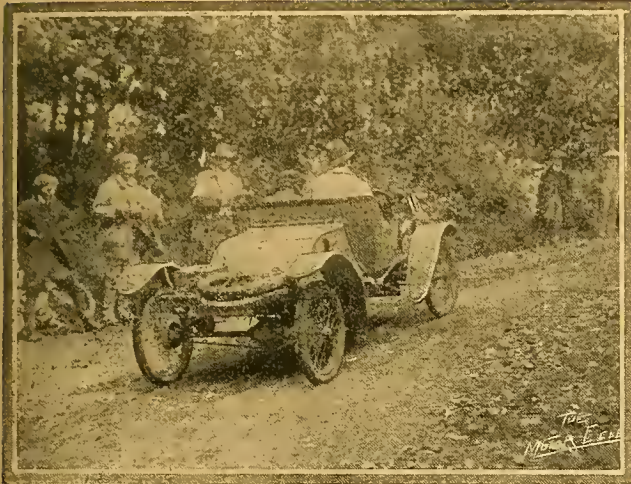
### The Slow Test on Countisbury.

Returning to our observations on Countisbury, it will be remembered that this long gradual ascent, which is preceded by a quarter-mile of 1 in 6, had to be climbed at a speed not exceeding 12 m.p.h. Excess of this speed involved loss of marks. It was not expected that there would be failures, but nevertheless several came to a standstill, most probably due to attempting the steepest section at too slow a speed. There was no rain at Lynmouth on Monday, so the surface was quite dry. J. F. Sirett (7 h.p. Indian), one of the first arrivals, impressed everyone by the silence and smoothness of running of his engine. S. C. Hubbard (Bradbury) and A. H. Alexander (3½ h.p. Indian) assisted with their feet, whilst W. Creyton (Humber) stopped, as also did L. Cass (Quadrant), R. E. Guest (Matchless sidecar), and J. Munday (A.C.). Of the others, again the whole team of P. and M.'s, Scotts, and Jameses crawled up on their low gears, evidently in an attempt to win the special prize for the slowest ascent. Other machines which toyed with the gradient were Crawley's and Newsome's Triumphs, Alan Hill's Indian, the Douglasses, New Hudsons, Motosacoche, L.M.C.'s, Enfield, and the three Rovers. Wasley did well, especially as he had taken the timing gear out and replaced it at the hill foot. Mrs. Hardee (P. and M.) and Miss Hammett (Douglas) sailed up comfortably, attempting nothing sensational, at a slow speed. The Zenith and Ariel



Marking off the starters' numbers in the Drill Hall Yard, Taunton.





J. T. Wood (G.W.K.) on Beggar's Roost. Not long ago this hill was considered almost unclimbable.

riders also appeared to be travelling at a good 12 m.p.h. W. E. Cook's N.S.U.-geared A.S.L.-Precision made a sure climb. Singularly enough, practically none of the passenger machine drivers attempted slow ascents, though they could surely have scored over the bicycles on account of their stability.

#### The Hero of Beggar's Roost.

J. R. Haswell, however, the hero of Beggar's Roost, on his three-speed Triumph sidecar, simply crawled from bottom to top. His slow ascent was as monotonous to himself as the spectators, for it appeared he would never get out of sight. How his engine is able to plug away uphill for over a mile on a 16 to 1 gear without knocking itself to a standstill is a mystery. About a quarter of an hour is Haswell's time. There was much delay in the concluding stages of the slow climb owing to coaches and cars blocking the narrow road.

We were now in the tail of the procession, and hurrying along over Exmoor by the coast road to Porlock without time to enjoy to the full the magnificent land and seascapes. We were astonished to meet competitors riding in the opposite direction. They were, however, the early birds trying Porlock, Saturday's test hill. The surface was good, so most succeeded. L. Cass (Quadrant) had a badly-burst tyre, and twice stopped to effect repairs. We also passed Collier (Matchless) with belt trouble. There is a hairpin bend on a hill out of Porlock; competitors

came upon it unawares, and several failed miserably. Near Minehead we overtook Gray (Rudge multi) with his gear in pieces by the roadside. It had run hot, and gave a free engine in all positions. Having wasted over two hours endeavouring to put matters to rights, he retired, and was towed to Minehead Station by the Kempshall tyre car. Further on Creyton (Humber) was again in trouble, his timing having shifted. He, too, lost the limit of time, so gave up. Near Williton we noticed the Duo by the roadside, and, stopping to enquire, found that one of the driving pulleys had broken. It was towed in by the Pedey tyre car. Through Bridgwater and Somerton the going was good, but the roads extremely dusty, in contrast to Monday's rain, as bad as it is, dust was preferred. H. E. Haswell (Bradbury) collided with a car and bent his footrest, but continued, whilst nearing Taunton W. Land Dibb (6 h.p. Rex) ran into a wood cart and wrecked his machine, hard luck indeed, as he had lost no marks up to this point. Turning into the Drill Hall yard, Thornton (Swan) ran into the gate and knocked a spectator over.

List of marks lost on Countisbury Hill:

ONE MARK.—P. Grout (4½ h.p. Quadrant) and R. Holloway (Premier).

THREE MARKS.—F. C. Wasley (Douglas), G. B. Fry (3½ h.p. Quadrant), and W. E. Cook (A.S.L.)

FOUR MARKS.—P. Weatherill (3½ h.p. Zenith), J. H. Kerr (3½ h.p. N.S.U.), and J. M. Oakley (Matchless).



A. D. Arter (3½ h.p. James) on Countisbury.

SIX MARKS.—F. C. North (Ariel), J. Haslam (6 h.p. Zenith), W. E. Phillips (Triumph), G. H. Donnelly (4 h.p. Swan), and Miss Hammett (Douglas).

NINE MARKS.—Mrs. Hardee (P. and M.) and Hugh Gibson (Bradbury sidecar).

SIXTEEN MARKS.—L. Newey (3½ h.p. Ariel).

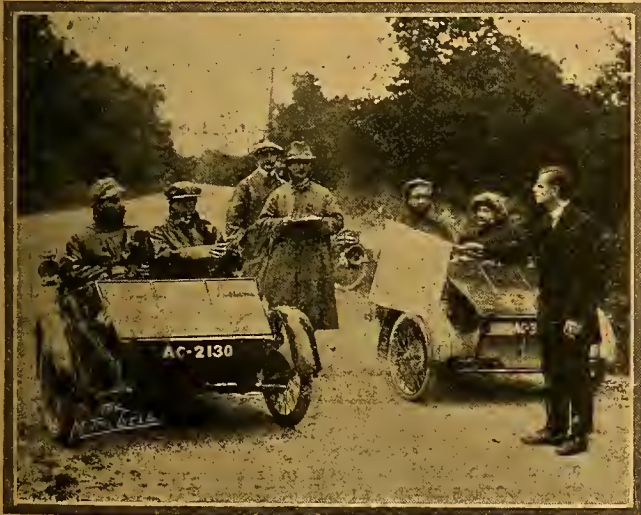
The slowest ascents in the motor bicycle class were by A. R. Penny (2½ A.J.S.), 10m. 26s., and Geo. Cocker (2½ h.p. Singer), 10m. 3s.

In the passenger the slowest were A. J. Stevens (A.J.S.), 17m. 5s., and J. R. Haswell (3½ h.p. Triumph), 13m. 35s.

#### Third Day, Wednesday.

Taunton, Bridgwater, Cheddar Gorge, Bristol, Birdlip, Cirencester, Malmesbury, Chippingham, Bath, and Wells. Distance, 196½ miles.

The morning was dull, and the weather appeared showery, while the roads were very wet owing to heavy rain in the early hours. As this was the longest day, the men were started in pairs, a practice which might well be followed on most days, save on those on which very narrow roads have to be traversed. As it was only seven miles to the surprise hill of the morning, an early start was made. We soon overtook the two ladies, who were greeted in all the villages with cheers. Abbott, however, seemed in a hurry, so he had to be overtaken, as we were bent on observing the ascents of all the competitors. Major Nicholl, whose Clyno



Two A.C. sociables in the check at the bottom of Telegraph Hill.



## A.C.U. Six Days' Trials.—out



H. C. Mills, (3½ h.p. Green-Precision) ready to start.

was temporarily *hors de combat* owing to tyre troubles, borrowed Loughborough's Matchless, and as he was on duty as observer, he pushed ahead, and was just in front of us on the steepest part of the hill when the back tyre suddenly collapsed.

The hill is approached by a sharp rise, followed immediately by an acute corner; then the gradient eases for a stretch, and culminates in a section of about 1 in 6, followed by a long and fairly easy gradient. The surface was wet at first, but became very greasy later on.

The following competitors climbed the hill successfully:

Mrs. Hardee (P. and M.), Miss Hammett (Douglas), Abbott (Bradbury), Herdman (Rudge), Catt (Triumph), Kerr (N.S.U.), Dr. Moss-Blundell (Corah), Haswell (Bradbury), Holloway (Premier), Peachey (Swift), Watson (Swift), Haslam (Zenith), Oliphant (Premier), Griffith (Zenith), Little (Premier), Brough (Brough), Weatherill (Zenith), Berwick (New Hudson), Mundy (Quadrant), Dixon (New Hudson), Cocker (Singer), Morris (Zenith), who skidded slightly, Bah-



The Scott Team climbing Countisbury Hill, Frank Philipp leading.

ington (Bat), Wilberforce (Douglas), Castagnoli (L.M.C.), Donnelly (Swan), Thornton (Swan), Hunt (Campion), Gibb (Douglas), Evans (Humber), Dixon (Singer), Phillips (Triumph)—the latter is a member of the Taunton Club; he is of quite an unmechanical turn of mind, so we are informed, and yet he has gone so far without losing a mark—South (Rudge), McMinnies (Triumph), Pratt (O.K.), Pratt (P. and M.), Penny (A.J.S.), Shaw (P. and M.), Mills (Green-Precision), Sirrett (Indian), Spruille (P. and M.), Drake (P. and M.), Hill (Indian), C. T. Newsome (Rover), Noble (Rover), Scott (Rudge), Spraxton (Rover), Phillips (Douglas), Newey (Ariel), Sangster (Ariel), North (Ariel), Brown (James), Arter and Pollock (James), Crawley (Triumph), Holroyd (Motosacoche), Newsome and Hardee (Triumph), Wells (Bradbury), Moffat (Douglas), Platt (Bradbury), Clarke (A.J.S.), Soresby (L.M.C.), Haddock (A.J.S.), Corke (A.J.S.), Philipp, Baker, and Longfield (Scott), Sawyer (Premier), Dickson (Zenith), Dickson (Indian), Collier (Matchless sc.), Tassell (Matchless), Guest (Matchless), Haswell (Triumph sc.), Colver (Enfield sc.), Wood and Keiler (G.W.K.), F. Smith (Clyno), R. C. Davis (Chater-Lea sc.), Gibson (Bradbury sc.), Jameson (Enfield), Morgan (Morgan runabout), Stevens (A.J.S. sc.)

The following competitors were unsuccessful:

Cass (Quadrant), plug blew out; Alexander (Indian), Grant (Quadrant), Wasley (Douglas), Fenn (Humber), broke a piston at the foot of the hill and retired; Fry (Quadrant), Cooke (A.S.L.), Nott (Matchless sc.), clutch slipping.

Cotthelston Hill occurred in the 43½ miles non-stop section.



Three competitors in Cheddar Gorge.

A descent followed into Bridgwater, and a long stretch of fairly level road brought us to Cheddar Gorge. Spectators were gathered here in large numbers, quite a crowd being on the banks at the worst bend, which is also the steepest part of the Gorge. Cheddar is not a stiff climb, but it tried some of the passenger machines fairly well, particularly the single-cylindere sidecars.

### The Ascent of Cheddar Gorge.

Most competitors climbed the Gorge satisfactorily. Miss Hammett was first up, followed by Mrs. Hardee. They received an ovation for particularly neat ascents. A. H. Alexander again came to a standstill. He is having bad luck; he attributes his failure to the assembling of his engine, for the timing is wrong. He cannot rectify the trouble in running time, as the timing gear is in the crank case. Another who stopped on the difficult S bend was J. Munday (A.C.), whose compression tap blew out with a loud report. A few miles further on, the non-stop section of 43½ miles from Taunton ended at Wellsday Inn. From that point nothing in the form of serious gradients occurred till Dundry Hill was reached.

The traffic of Bristol city is usually most difficult to negotiate, but, thanks to good directions, the assistance of the police and boy scouts, the route was easily followed over Clifton Down on to the Gloucester Road at Filton. Soon after Filton, down fell the rain, drenching roads and competitors. At Falfield the main road was left and a hilly course followed over the Cotswold range into Gloucester, with glorious views of the Severn and Bristol Channel. On the steep hill out of Falfield W. Heaton and L. A. Bees were seen stopped. The rain had rendered the surface very treacherous on parts of this section.





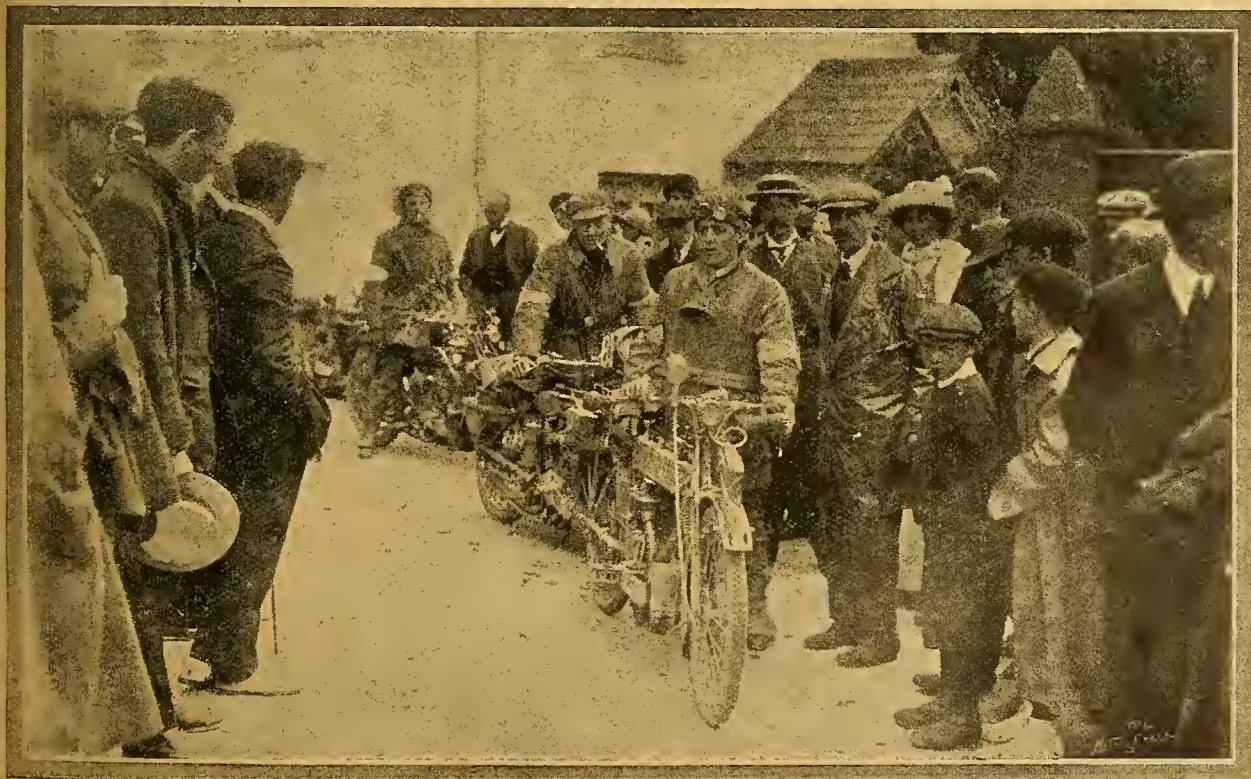
(Left) Frank Philipp (Scott), (right) W. Heaton (A.J.S.) at top of Chellia Gorge.

Lunch was served at the Bell, Gloucester, and the checking and timing arrangements being under the control of Mr. A. G. Reynolds was a guarantee of their being well carried out. J. Cocker (2½ h.p. Singer) had to change a plug a few hundred yards from the restart. After lunch Birdlip was ascended, this well-known acclivity accounting for more failures than it should have done, considering its notoriety and the knowledge most competitors have of its gradient and severity. A few miles from Birdlip summit we saw Pollock (James) adjusting his machine by the roadside; also R. H. Wells (Bradbury). Beyond Birdlip

there was little to interfere with the modern motor cycle of almost any power. Rain fell at intervals nearly all the afternoon, the storms between Bath and Chewton Mendip being particularly severe. The cold for the time of year was felt keenly, and commented on by all. The route from Birdlip was through Cirencester, Malmesbury, Chippenham, Bath, over the Mendips (where there were some fairly stiff ascents and descents), through Wells and Glastonbury to Taunton.

### Greenore Check.

At Greenore check, near Wells, a good deal that was of interest could be learned. The check was outside an inn which bore the curious sign, "Ne Nimium" ("Not too Much"). Shortly after our arrival just before Abbott, who evidently was afraid of being late, the rain came down in torrents, and it was very cold. Garrey (Swan) lost a bolt out of his clutch rod. Donnelly (Swan) skidded in Bath, and damaged the side plate of the frame. In Bath also a competitor side-slipped and bumped into W. Pratt, who in turn cannoned off and knocked a butcher boy over who was riding a carrier tricycle. Mills suffered a puncture. Evans's Humber and the P. and M.'s were conspicuous for their clean crank cases. Someone had bumped into Grout's machine while it was jacked up by the roadside and bent the stand. Dr. Moss Blundell had a spill in Gloucester and another in Bath, bent and damaged the chain guards, tore out the exhaust lifter, and as a result he had to put in two hours' work straightening things up. R. C. O. Wells had magneto trouble, and took out his plug and dismounted his carburetter in looking for it. He thought he had traced the trouble to the high-tension carbon brush, and just as he was starting he noticed his front tyre was flat. Guest pulled the valve out of his back tyre. Baker wore an apron on his Scott, and kept himself beautifully warm and dry. Mud was flying about, so Frank Smith cleaned his float chamber as a precaution. On the way home, Morgan was seen with the bonnet open in Glastonbury. Stugster, who, like several others, had lost a filler cap, was apparently suffering valve trouble five miles from Taunton, and about two miles from the finish Jones had a puncture. The road back was lumpy, and over Sedgemoor there were several



Three competitors at a check. The machines are a Bradbury and two twin Zeniths.



## A.C.U. Six Days' Trials.—

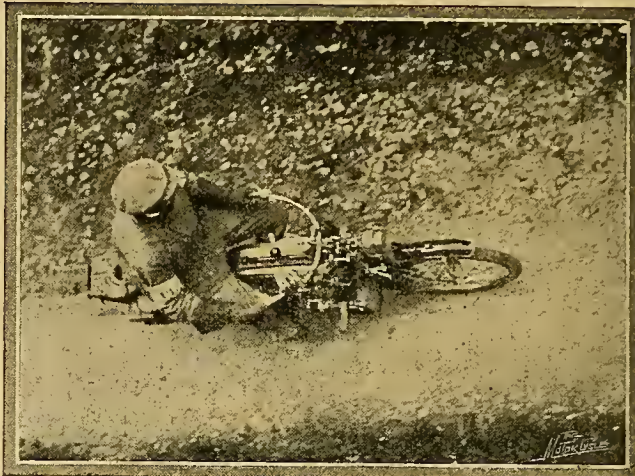
bad *dos d'ânes*. A dangerous bridge, one and a half miles from Glastonbury, marked by a red lamp, required caution, and at Burrow Bridge the tollgate, with which anyone who was unwarned might easily collide, came as a surprise to the competitors. A red lamp gave notice of our approach to it, and Major Lloyd gave warning at the Greenore check of both the above-mentioned dangers. The rain fortunately cleared off before Taunton, which was reached before dark.

Sixteen miles from Taunton we came across J. Oliphant (Premier), whose Sturmey-Archer gear locking arrangement had turned in the fork end and broken the frame; he had to abandon the machine, and H. Colver very kindly took him into Taunton on his Enfield sidecar.

Near the finish, W. B. Little (Premier) ran out of petrol, and enquiring for paraffin at a neighbouring cottage was surprised and pleased to learn that the occupant had a small supply of petrol.

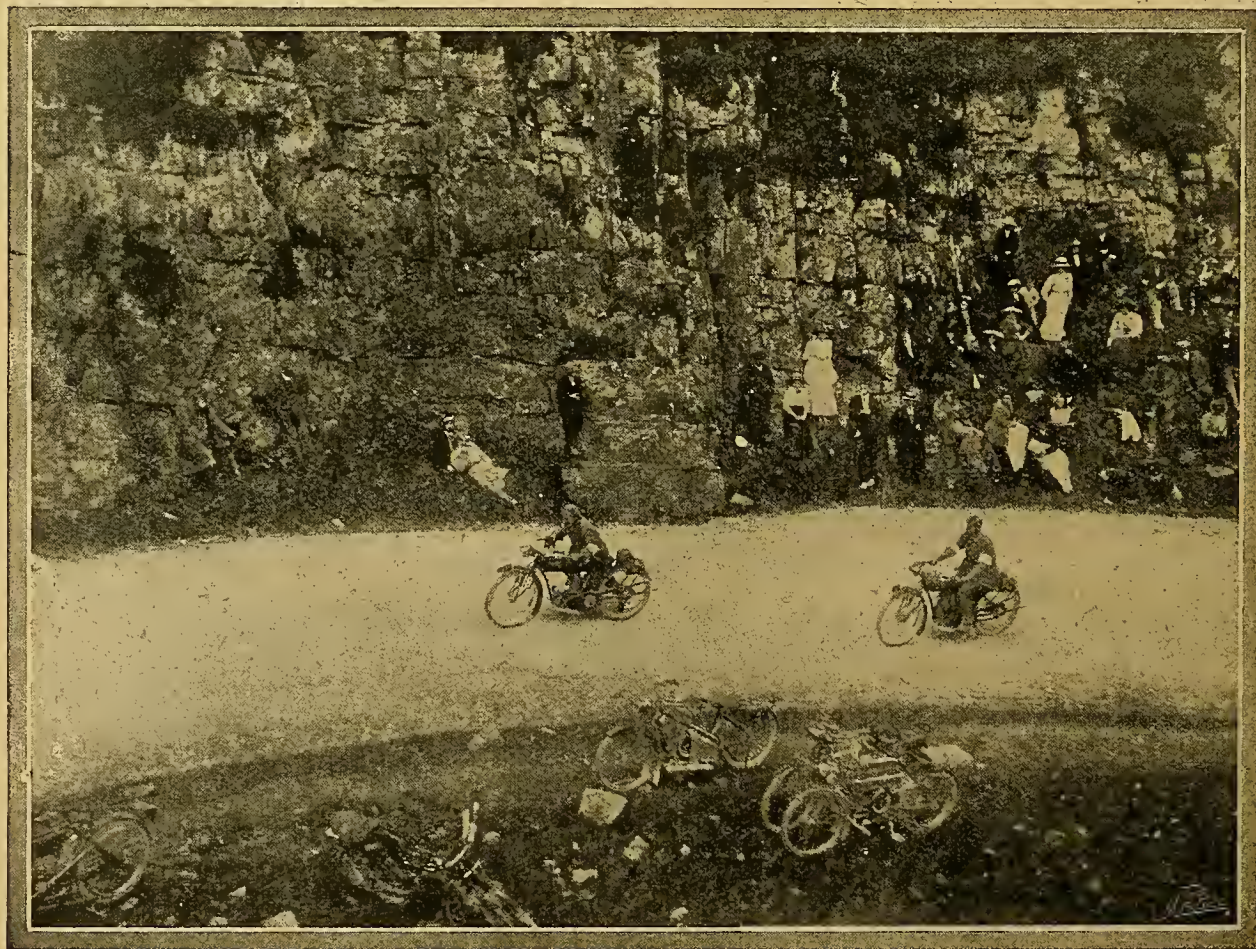
Several riders finished on flat tyres, including Miss Hammett (Douglas), who changed a cover during the day, F. C. North (Ariel), and "No. 13," P. Shaw (P. and M.).

The competitors presented a sorry sight at the finish; for they had had alternately extremely dusty roads, then pouring rain—a combination which tested the most hardened spirits. The ladies, however—there are several on the passenger machines—were no more perturbed by the adverse weather than some of the men. Although they had been despatched in pairs for Wednesday's long run, it was dark before the back-markers checked in. Several arrived very late, including Dr. Moss Blundell (Corah). Punctures had been the chief trouble during the day, though the wet found out weak spots in the ignition system, and skids were



E. P. Dickson (6 h.p. Zenith) ascending Countisbury Hill. The photo is taken from the bank almost directly above.

not unknown. At the replenishment depot—which was very systematically arranged—an attendant put oil into Owen-Wells's petrol tank. This was the last straw, as that rider had suffered innumerable troubles during the day, but stuck gamely to his task.



A. H. Alexanier (3½ h.p. Indian) and J. F. Sirett (7 h.p. Indian) in Cheddar Gorge. Alexanier's Indian was reported to be wrongly timed.





A competitor descending Porlock.

**Fourth Day, Thursday.**

Out and home from Taunton through Somerset lanes, see maps in last week's issue, page 929. Distance, 154½ miles. A secret course until the morning of the fourth day.

"The brave old Duke of York, he had ten thousand men, First he marched them up a hill, then marched them down again."

Thus did the Auto-Cycle Union with the survivors of the trial on Thursday last. The route was a maze of turnings and surprise hills, and single figure gradients were common objects of the country side. Before lunch the district west of Taunton was covered. We left betimes this morning the start was at 7 a.m., and our destination was Collier's Hill, where we were asked to officiate as observer. The weather was dull and threatening, and the roads were wet with recently fallen rain. The way out of Taunton was shown by boy scouts, and every corner was marked both with arrows and confetti. Soon the arrows turned us off the main roads and lanes were traversed which were narrow, rough, and greasy, and both winding and steep. A hill beyond Rowford was a forecast of what was to come. Then the surface became even worse, and finally there ensued a steep descent, at the foot of which there was a sharp corner—the awkward approach to Collier's Hill. The surface here was excellent, and the gradient was no worse than 1 in 5½. Nearly everybody made a clean ascent; Mrs. Hardee led the van as usual and made a splendid climb. It now began to rain and never ceased at this particular spot, a heavy downpour alternating with a Scotch mist.

Despite the inclemency of the weather, Morris (Zenith) wore no cap. Grout (Quadrant) failed, and as his low gear was jammed the intermediate (5 to 1) was too high for the gradient. Knowing the nature of the route Grout decided to retire. Wasley (Douglas) dismounted owing to his petrol tap being turned off. Baker (Scott), being unaware that an obscured hill was confronting him, stopped at the foot to pump his front tyre. Mills (Green-Precision) came up well as usual, but by way of a lark pretended to pedal. Our assistant observed, and entered in his notebook in all seriousness that he had employed this form of assistance. Platts (Bradbury) had a bad squeak when the top gear was in engagement. Kerr (N.S.U.) stopped owing to too slack a belt. Miss Hammett arrived very late, as she changed a cover in the garage. A mile or two after Collier's Hill there are cross roads where the arrows clearly showed the way, but at one point a little farther on one of these must have pointed in the wrong direction as several men climbed Cothelstone Hill twice.

After Cothelstone the route lay through Pagborough and Watts House to a watersplash near Elwerthy on the road leading to Raleigh Inn. The water was not deep, but the ford was followed by a hill of approximately 1 in 12. W. D. South (Rudge Multi) came to a standstill owing to his belt being saturated with water. J. Peachy (Swift) also stopped owing to the water and a rich alluvial deposit on his magneto. The water put out Hugh Gibson's magneto like snuffing a candle. Through Washford to Dunster the road continued ever winding and undulating. There were few incidents to record, though several skids were reported. P. J. Evans took a toss over the handle-bars, breaking his watch and chain and at the same time losing a gold medal, which he would very much like restored to him. At last J. R. Haswell had to give up his plucky attempt to take the experimental three-speed Triumph through such a severe trial. He has had trouble all along in changing down to the low gear; this action first causing the back wheel to skid along and then suddenly taking the bit between its teeth. Naturally something must give way under such conditions, and Haswell himself predicted an early withdrawal. It came to-day as the low gear dogs were sheared off leaving him with but two effective speeds. He could plod along in this manner, but the ascent of Porlock on Saturday would have proved too much for him with the 16 to 1 ratio inoperative, so he retired. Wheddon Cross to Bampton was the next section, but this provided no severe test.

**Twenty-four Failures on Byber's Hill.**

Byber's Hill, Waterrow, was the real test of the morning, and this climb accounted for twenty-four failures. The gradients were kindly supplied to us by Captain Davidson, R.E., who was an interested spectator. Beginning with a short easy stretch, followed by a right-angled turn to the left, when the bend is negotiated the steepest part, averaging 1 in 4½, is encountered. Small loose granite rendered a firm grip for the wheels impossible, and several failures were due to this cause. After the steep section the hill eases off to 1 in 8, culminating with a hundred yards of 1 in 7. Quite a crowd assembled here in the anticipation of seeing fun, and they were not disappointed. Before referring to the performances, we think it necessary to draw attention to the lack of judgment of some of the competitors, both on this and other hills. Knowing full well by the crowd at the corner that something good was in store, many were foolish enough to round the bend on top gear, and then lost way in changing down, their engines having no chance to pick up.



The Morgan Runabout starting the ascent of Byber's Hill.



### A C.U. Six Days' Trials.—

Mrs. Hardee (P. and M.) led, as before, but paddled with her feet, though apparently her engine had ample power. H. G. Dixon (New Hudson), G. Brough (6 h.p. Brough), and J. F. Siret (Indian) shone conspicuously, all three making use of their top gears on the easy stages. Mundy (Quadrant) just got up by skilful jockeying. Babington (Bat) succeeded, though his engine was misfiring. Miss Hammett (Douglas) changed gear too late, whilst C. L. Scott (Rudge) had hard luck in breaking his belt in sight of the top. A. J. Dixon (Singer) made a clean and fast ascent, though his stand was trailing. Really easy climbs were made by Noble and Spruston (Rovers), and Holroyd (Motosacoche), who went up in a bunch, Newsome (Rover), and the James trio—Arter, Pollock, and Brown. This team, with the A.J.S., Scott, and P. and M. riders, can always be relied upon for clean and sure ascents, and their consistency is the main topic of conversation when a hill-climb is in progress. Crawley and Newsome on their Triumphs, Holloway and Little (Premiers), are also competitors who are as sure on hills as it is possible for any rider to be; the first-named was as fast as anyone on Pyber's Hill, passing three or four others on his way up. Wilberforce, after rounding the bend, charged the bank and tore a finger nail off, which caused him to faint. Recovering in about fifteen minutes, he made one of the best ascents of the day on his Douglas. G. H. Donnelly (Swan) failed, and in remounting charged the bank, but did no real damage. Penny and Corke (A.J.S.) were not up to form, for they had their first stops recorded against them. Greaves (Enfield) also stopped, though having seen him climb Barbrook one would have thought that no hill was too steep for his little twin. W. E. Phillips (Triumph) was appalled by the gradient facing him after rounding the bend, and came to a standstill. The Ariels—Sangster, North, and Newey up—climbed well, and the Douglases ridden by Fletcher and Moffatt made excellent ascents. Hardee (Triumph) got to the hill summit, but noticed his engine pulley running eccentrically. Investigation at the top proved that one of the flywheels had come loose, so he reluctantly withdrew, though he had not up to this point a single mark against his name. Platt's Bradbury passed issuing an ominous squeak. W. E. Cook (A.S.L.) changed gear too late and stopped. Abbott (Bradbury) almost stood still, but picked up in surprising fashion and made a clean ascent. P. Weatherill and Griffiths, on Zeniths, went up well, but Haslam was not so fortunate, as he skidded in the loose stones, narrowly missed a group of spectators, and bumped his head on the ground. Thornton (Swan) was balked on his first attempt, but did well next time. Catt (Triumph) travelled excellently. S. K. Jones's L.M.C. made light of the steepest section.

### The Passenger Machines.

The passenger mounts were eagerly awaited. First Frank Smith (Clyno) showed the way, and was applauded for a good show. Colver (Enfield) went over the crest very neatly, also Jameson on a similar turnout. The silent running G.W.K.'s got up well, but the driving wheels were inclined to slip. Munday's A.C. actually stopped with the back wheel churning a deep rut in the stones. Gibson skilfully piloted his Bradbury sidecar. Stevens (A.J.S.) made a sure ascent as usual, though he was overhauled by the Morgan runabout. It was left to C. R. Collier to make the fastest climb, to all appearances, on his Matchless. Tassell (Matchless) was slow, but sure; but G. Nott stopped, and next time thrilled the spectators and came near to wrecking his machine. Rounding the bend at a good 20 m.p.h.—an impossible speed—the sidecar lifted in the air, and, coming down with a bump, threw out Mrs. Nott on one side and the driver on the other, the machine turning turtle without suffering the slightest damage. Undaunted, the plucky pair tried again, and nearly repeated the performance, the sidecar wheel being a foot in the air all the way round the bend. Guest (Matchless) did well. Dr. Moss Blundell (who was late) ran on to the grass at the roadside, but cleverly recovered, and got up well. Later in the day continual chain breakages, gear trouble, and the result of yesterday's fall caused him to retire, which was hard luck as his machine had been travelling well.

It was noticed that several who started on Thursday morning were missing at Pyber's Hill, the constant rain and the severe nature of the course telling their tale unmistakably.

It was at first arranged to climb another steep ascent in this neighbourhood, which meant passing through a deep water splash near Chipstable. Though a temporary bridge was specially erected, it was at the last moment decided to cut this section out.

Just outside Milverton there was another steep observed ascent, which proved the undoing of Frank Smith, who ran out of petrol and came to a standstill.

After lunch at Clarke's Hotel the main road to Wellington was followed, then ensued more lane work, but the surface was good until the foot of Buckland Hill was reached, where the road was very loose, and at this point several of the men had to dismount as the corner was sharp and the arrow was not seen until one was almost on it. Among these unfortunates was Cass (Quadrant), and Evans (Humber) was reported to have had a tumble. The Blackdown Hills had to be climbed three times in all, and in every case this necessitated a long climb, but in no case was the gradient worse than 1 in 5. Perhaps the stiffest of these (in the sense that it required the most skill to negotiate) was Monument Hill, which finished with three lacets. The only failure was Tassell (Matchless), who stopped through belt trouble. We watched a certain number of the men on all three ascents, finishing up with Corfe Hill, which was a good test for



V. Wilberforce (Douglas) has a fall on Pyber's Hill.

colonial models as it began with corners and steep pitches. The surface was roughish at first, but it became more and more grass-grown, culminating in ruts, a fairly deep water course, and finally a steep pitch leading on to the high road. Each of these hills was over a mile long, but failures were few, Wells's being the only one recorded on Corfe Hill. The next section of interest was between Churchingford and Bishop's Wood, where there were several hills to be negotiated. Thereafter all was plain sailing through Ilminster to Langport. One mile from the latter place a turn to the right was taken and a bad road with many greasy patches had to be negotiated until the foot of Red Hill was reached, immediately at the foot of which thick mud covered the road for several yards.

The hill possessed several bends but few failures were recorded. Among these was Miss Hammett, who again misjudged her speed-changing and tried to engage the top too early. The remainder of the run was over easy roads to Taunton. Near the finish Bees (L.M.C.), who had time to spare, was seen cleaning his machine with a bucket of water and a rag. During the afternoon Wood (G.W.K.), who had not lost a mark, stripped a tooth in the differential gear and had to withdraw.





Reg. Holloway (3½ h.p. Premier) at the top of the 1 in 4½ section of Byber's Hill.

Further retirements on Thursday were as under: P. Grout (Quadrant), low gear jammed; A. H. Alexander (Indian) engine wrongly timed; and G. H. Donnelly (4 Swan), frame twisted.

### Smoking Concert.

On the evening of Thursday a smoking concert was organised by the Taunton and District M.C.C., at which all the competitors, officials, and many local motorists attended. Col. Boles presided, and later on in the evening the Mayor of Taunton took the chair. The entertainment was of the best and was much appreciated. There was some slight disorder in the centre of the room caused by certain motor cyclists whose spirits often got the better of their discretion, otherwise the concert would have passed off without a hitch. Rear-Admiral Sir R. K. Arbuthnot proposed a vote of thanks to the Mayor, who made a brief but excellent speech, mildly rebuking the originators of the disturbance, which he diplomatically and jokingly attributed to the invigorating air of Taunton.

### Some Protests and the Result

Numerous protests were received by the committee against marks being deducted from competitors who exceeded the time limit in the garage in the morning. It was found that the rule governing the question of the time to be spent on the machines previous to starting had in some cases been too leniently exercised, and in consequence an announcement was made to the effect that the marks lost up to Thursday would be cancelled, but the rule would be rigidly enforced on Friday and Saturday.

### Fifth Day, Friday.

Bournemouth and back. Outward journey: Crewkerne, Dorchester, Weymouth, lunch at Bournemouth, returning through Blandford, Sherborne, Yeovil, and Ilminster. Distance 150½ miles.

From the contour in the official programme, Friday's run promised to be the easiest of the six, and thus it proved but for two or three hours' rain. More hills were descended than ascended, and we are confident it would have been more strenuous if the course had been followed in the reverse direction. The several retirements of Friday left in the running this morning eighty-nine starters. Through Chard and then Crewkerne the course led to Weyyards Gap, which was to be the second slow hill-climb. There were some exceedingly slow ascents on this hill, but the gradient was not steep enough. Lengthening the measured stretch to two miles helped to test the cool running qualities of the engines more severely. Holloway (Premier) seemed as slow as anyone, though Frank Philipp appeared especially anxious to win the prize, for he travelled slowly and swayed from one side of the road to the other. Corke (A.J.S.) and others followed suit. P. D. Walker's Rudge ran hot, and he had perforce to dismount. The passenger machines were again at an advantage owing to their stability. G. Nott (Matchless sidecar) ran hot and stopped. E. Dickson (Indian) and Newsome and Crawley's Triumphs were also noticeably slow, but as the ascent was so easy we continued our way over undulating roads ever twisty to Dorchester, where crowds were as usual assembled at street corners. Incidentally we may observe that the blue covered journal containing a list of the competitors with their numbers was greatly in evidence here, as in most other towns passed through. At the top of Ridgway Hill, Upwey, a magnificent view of the coastline was obtainable, with Weymouth on the right and several warships in the bay. No doubt this sight at once attracted the attention of Rear-Admiral Sir R. K. Arbuthnot, Bart., R.N., who was a few minutes ahead of us on his Triumph. On this section we were in close company with the Scott riders, whose smooth running machines so greatly impress the villagers and townspeople. If they have a fault it is their propensities for smoking. The Rover team, too, may yet be in the running after Porlock. They are sure hill-climbers, and have gained full marks to date.

### A Fall on a Bend.

Skirting Weymouth by a hairpin corner at the entrance to the town, the riders ran along the coast to Warmwell. On this hairpin, Mrs. Hardee suffered a fall. The vivacious Hal Hill was officiating at the check. His first remark to the writer was "Well, fancy riding a P. and M.!" Of course it is well known that Hal Hill is a member of that sporting section who must have a big T.T. twin, fitted with overhead valves, and making a big noise. Let him, we would not change! On such an easy course it was no surprise that incidents were rare, the puncture fiend, however, was ever present. The Bradbury team riders were going much better to-day. Platt had got rid of that irritating squeak, and they had a no-trouble run. S. K. Jones and L. A. Bæes have been noticed as running very consistently, and this evening's topic has been almost solely concerning the final tithits on



F. C. North (Ariel) rounding the bend at the hill foot. The steepest section of 1 in 4½ follows.

CLIMBING BYBER'S HILL, WATERROW.  
H. Be- (New Hudson) going well. The few Hudson riders were usually fast on hills.

P. W. Moffatt (Douglas) nearing the summit.



### Winyards Gap Slow Hill-climb.

The following are the results of the slow hill-climb on Winyards Gap, near Crewkerne:

#### MOTOR BICYCLE CLASS.

1. G. L. Fletcher (Douglas) ... 23m. 4s.
2. S. Crawley (Triumph) ... 22m. 30s.
3. J. Cocker (Singer) ... 21m. 36s.

Marks lost for exceeding 12 miles an hour: Mrs. Hardee (P. and M.), 6; S. K. Jones (L.M.C.), 8; Haswell (Bradbury), 5; and Miss Hammett (Douglas), 5.

#### PASSENGER CLASS.

1. A. J. Stevens (5 A.J.S. sc.) ... 26m. 46s.
2. R. E. Guest (7 Matchless sc.) ... 22m. 39s.
3. R. C. Davis (7 Chater-Lea sc.) ... 16m. 27s.

J. Peachey (Swift) and P. D. Walker (Rudge) failed, and in consequence lost 10 marks each.

### Sixth Day, Saturday.

Saturday, Taunton to Exeter and back, *via* Dunster, Porlock, Lynmouth, South Molton, Tiverton, Sidford, Bridport, and Crewkerne. Distance, 167 miles.

In order to avoid the coaching traffic on Porlock a very early start was made on Saturday morning. The first man was sent off at 5 a.m., and when we started it was just light enough to see without lamps. The road was greasy at first but improved later, and the going was quite good from



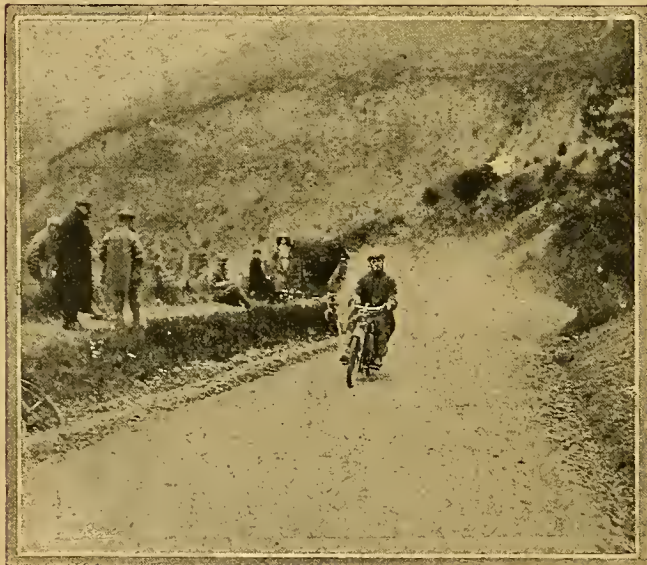
G. Griffith (6 h.p. Zenith) suffers his one and only puncture on Friday afternoon. One of "The Motor Cycle" representatives watching the tube changed.

Saturday, "Porlock and Lynton." It is generally expected that these two notorious climbs will settle the issue in the team award and special cups.

Lunch was taken at the Central Hotel, Bournemouth, the morning's run being about eighty miles. During the interval rain began to fall and continued until Sherborne, once more rendering the pot-hole roads a mass of surface water. Through Yeovil to Ilminster the going greatly improved, and residents evinced surprise at the mud hespattered riders bedecked in oilskins when they had seen no rain at all. A few miles from home we caught up Griffith (Zenith) who had suffered the first puncture, a screw penetrating the rear Pedley cover. A lightning repair did not benefit him, for he had to stop again two miles further on. With five minutes to go he had four miles to cover, and it suffices to say that he did it, thanks to the speed and power of his 6 h.p. Jap. Mrs. Hardee (P. and M.) and Miss Hammett (Douglas) rode side by side most of the afternoon. They had good luck and were always in front rather than behind time. G. B. Fry (Quadrant) retired owing to water in the magneto, and Thornton (Swan) also withdrew.



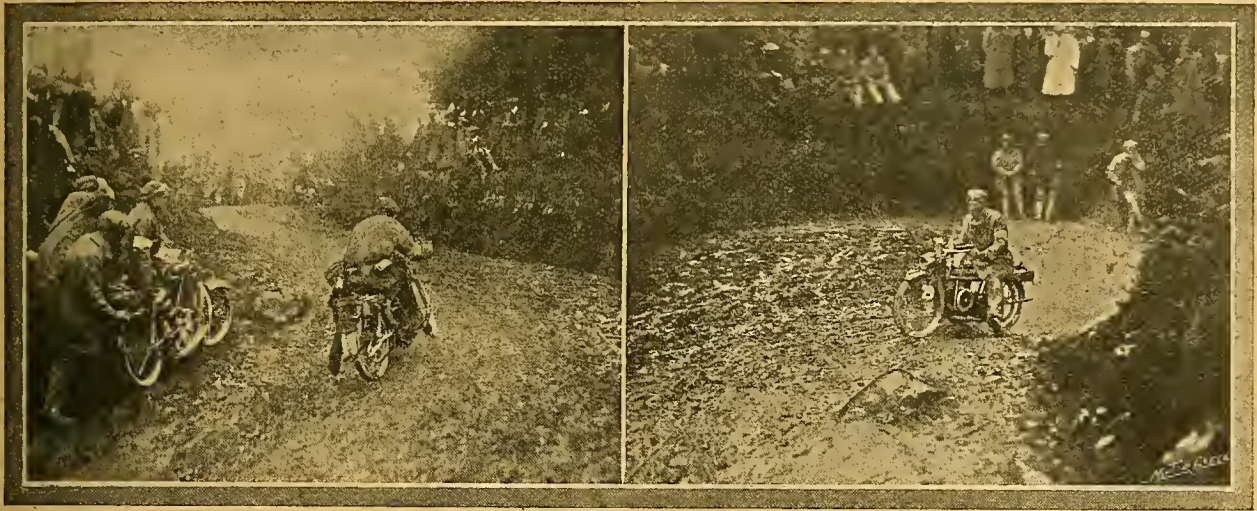
The second slow climb up Winyards Gap. F. J. Watson (Swift) passing a gun carriage of the Wolverhampton Royal Engineers (T.) Territorials.



G. L. Fletcher (2½ h.p. Douglas) climbing Curry River.

Williton to the outskirts of Minehead. Mr. A. H. Priestley on his Rex-Jap sidecar led the way, and during the journey, though the day was young, numerous motor cyclists, some of whom rode machines of ancient pattern, were encountered on their way to see the most striking hill-climb of the Six Days' Trial. Johnny Gibson, who rode his Trump-Jap out to the hill-climb, had a nasty fall where an official signalled the beginning of the non-stop section, but though he hurt himself somewhat, he, fortunately, did not injure the wound in his head, the result of his accident in the Isle of Man, which is not yet healed. Porlock Hill was in a most appalling condition. No hill ever ascended in a Six Days' Trial has ever presented such enormous difficulties. The higher one went the worse the surface became. It was bad at the first bend, fearful at the second, and above a sea of mud from four to eight inches deep, with not a strip of even reasonable surface on which to ride. In most places one could hardly obtain foothold, and how any rider could make a clean ascent was a puzzle to every one. There was a large crowd of spectators, most of whom concentrated on the second bend. Up to this point only was the hill officially observed. Owing to the length of the hill it was impossible for one man to carry out the observation of the riders, so the two representatives of *The Motor Cycle* were stationed one at each bad corner, and this report is compiled from the notes of both. Wells (Bradbury) stopped between the two corners, and Newsome (Triumph) pulled up, but restarted. Mrs. Hardee





TWO ASPECTS OF THE SECOND AND MOST DIFFICULT BEND ON PORLOCK.

N. O. Soresby (L.M.C.)

P. Philipp (Douglas).

(P. and M.) made a particularly plucky attempt, but skidded in the mud. Sawyer (Premier) fell, likewise Heaton (A.J.S.).

It was agreed to allow paddling with the feet without penalisation, owing to the abnormal surface encountered. Several competitors, however, made absolutely clean ascents, and these were Newsome (Rover), Noble (Rover), North (Ariel), Pollock (James), Corke (A.J.S.), and Evans (Humber). The following were recorded as having made successful ascents, though in each of these cases foot assistance was given: Castagnoli (L.M.C.), Sproston (Rover), Pratt (P. and M.), Shaw (P. and M.), Drake (P. and M.), Sproule (P. and M.), Crawley (Triumph), Moffatt (Douglas), Newey (Ariel), Wilberforce (Douglas), Brough (Brough), McMinnies (Triumph), South (Rudge), F. Philipp (Scott), The successful passenger machines were: H. V. Colver (Enfield), Keiller (G.W.K.), Davis (Chater-Lea), Jameson (Enfield), F. Smith (Clyno), Morgan (Morgan), and Guest (Matchless). The lightweight noticeably steered better in the thick mud than the heavy machines, Corke's (5 A.J.S.) proved a handful, but the clever steering of its rider brought it safely round the bends. Evans received loud applause for a particularly fine ascent. Of the passenger machines, the Morgan runabout made a splendid performance and was the only one in which its passenger (Mrs. Morgan who accompanied her husband throughout the trial) was seated in a normal position. The G.W.K. with the wheels bound round with cord carried the passenger on the locker at the stern of the vehicle.

#### A Foolish Spectator.

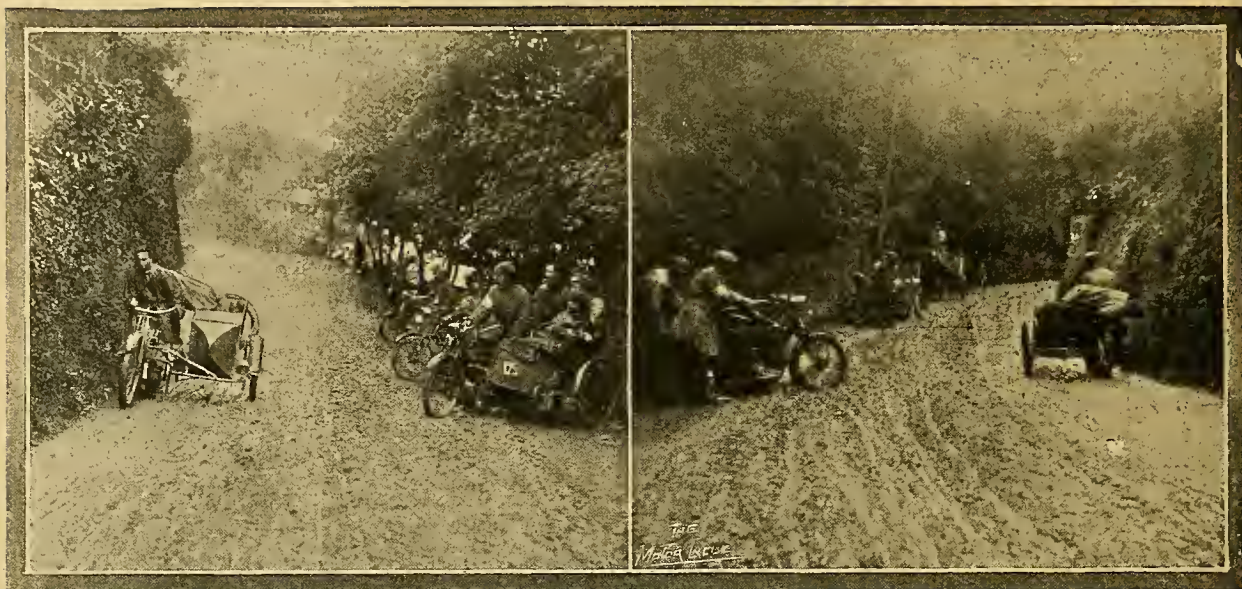
The failures were interesting and afforded considerable excitement. Mundy skidded round, kept his seat, and proceeded to descend, but was reminded by an official that he must proceed up and not down the hill; Haswell (Bradbury) ran into a labourer who, despite Priestley's persistent warning, was standing in a dangerous position, but fortunately neither was hurt. Just above the first corner there was a bay into which the failures could conveniently be pushed and their wait till their owners were ready to proceed. Many of the men came up quite fast to the first bend, and more often than not too fast and skidded. Herdman (Rudge) fell into the hedge, Catt (Triumph) tried to get up by means of excessive clutch slipping and failed, Phillips's Triumph ran into the bay mentioned above. At the first bend several even of the successful men skidded in the most alarming manner, among them McMinnies and Pollock (James). Tassell and Collier, in company with the other Matchless riders, wound cord round their tyres in order to obtain greater adhesion. Tassell was travelling well past the first corner when the cord broke, wound round the rear guard, and stopped the machine, also damaging the tyre, and similar trouble happened to Collier at the second corner, and in

each case valuable time was lost in setting matters right. Sangster (Ariel) unfortunately just stopped his road wheel though he restarted without assistance, Dickson (7 Indian) stopped in the same position as the majority, namely, inside the second bend, Bees (L.M.C.), like many others, had plenty of power, but stopped in the thick mud. Philipp, who was travelling splendidly and without the sign of a skid lower down, was baulked by Miss Hammett, and a collision seemed a certainty, but they managed to keep their engines running and got away in good form. Miss Hammett had stopped after the first bend. Soresby (L.M.C.) treated the spectators to a marvellous exhibition of trick riding, his machine skidding from one side to the other. The two privately owned Scotts (Baker and Longfield) skidded, although their engines never faltered. The latter charged an almost perpendicular bank and fell under his machine. Holloway (Premier) and Dixon (Singer) got into a rut between the bends and stopped, but restarted and completed the climb. Haslam and Griffith (Zeniths) stopped almost side by side below the second corner. Babbington (Bat) took the bend in a particularly skilful manner. Little (Premier) ran into the side of the road, stopped his road wheels on a bump, and restarted without leaving the saddle. Brough, as usual, made a clean ascent.



H. F. S. Morgan with Mrs. Morgan as passenger on the second bend on Porlock. The Morgan runabout gained a special cup for the best passenger climb up this hill.





Frank Smith (three-speed Clyno) passing unsuccessful competitors on Lynton Hill. It will be remembered that Smith was the first to climb Lynton on a sidecar.

C. R. Collier (Matchless) hugging the wall on Lynton Hill. His back tyre refused to grip on the steepest part.

Splendid assistance was rendered by Mr. O. Collier, a Douglas private owner, who pushed one unsuccessful competitor after another until he was well-nigh exhausted. As regards the team performances, the two complete teams to make successful ascents were the P. and M. and Rover.

#### Special Prizes for Porlock.

Two prizes were offered by Taunton residents—Mr. Marshalsea, of Marshalsea's Garage, and Mr. Powell—to be awarded in any way the A.C.U. thought fit. It was decided to give these to the best performances on Porlock. Mr. Marshalsea's prize was awarded to P. J. Evans (3½ Humber) for the best performance of a solo machine, and Mr. Powell's to H. F. S. Morgan (Morgan runabout) for the best ascent of a machine entered in the passenger class.

A spectator on the hill, who wishes to remain anonymous, was so much impressed with the magnificent pluck shown by the competitors on Porlock that he offered to award a gold medal to every man who made a clean ascent and has not

otherwise earned a gold medal or won either of the above prizes.

#### Over Exmoor to Lynton.

Over terribly bumpy roads to Countisbury, with huge pools of water, the competitors proceeded to the second bonus hill-climb—Lynton Hill, Lynmouth. Near the foot of Countisbury a brake test was arranged, Messrs. Brooker and Sharp suddenly waving a red flag in front of the competitors. The holding rather than the sudden stopping powers of the brakes was more particularly noted. It was permissible to stop in Lynmouth.

#### Performances on Lynton Hill.

The following gained a bonus of twenty-five marks each for making clean ascents of this hill:

Newsome (Rover)	Watson (Swift)
Noble (Rover)	Peachey (Swift)
Sproston (Rover)	Platt (Bradbury)
Wasley (Douglas)	Holloway (Premier)
Scott (Rudge)	Haslam (Zenith)
South (Rudge)	Griffith (Zenith)
Penny (A.J.S.)	Morris (Zenith)
Pratt (P. and M.)	Wilberforce (Douglas)
Shaw (P. and M.)	Castagnoli (L.M.C.)
Drake (P. and M.)	Babington (Bat), retired
Spronle (P. and M.)	Little (Premier)
Sirett (Indian)	Brough (Brough)
Hill (Indian)	Mundy (Quadrant)
Holroyd (Motosacoche)	Berwick (New Hudson)
Newsome (Triumph)	Dixon (New Hudson)
Crawley (Triumph)	E. V. Pratt (O.K.)
Moffatt (Douglas)	McMinnies (Triumph)
Phillips (Douglas)	Garrey (Swan)
North (Ariel)	Gibb (Douglas)
Newey (Ariel)	Dixon (Singer)
Arter (James)	Evans (Humber)
Brown (James)	PASSENGER MACHINES.
Philipp (Scott)	Keiller (G.W.K.)
Baker (Scott)	Jameson (Enfield)
E. D. Dickson (Indian)	Smith (Clyno sc.)
Bees (L.M.C.)	Morgan (Morgan)
Haddock (A.J.S.)	Stevens (Stevens sc.)
Heaton (A.J.S.)	R. C. Davis (Chater-Lea sc.)
Corke (A.J.S.)	



Leaving Maiden Newton. G. Brough (6 h.p. 3-speed Brough) in front.

In the passenger class there was a large percentage of failures, the oolite surface being too greasy for the hack wheel to gain sufficient adhesion. Only six made clean ascents.



# A.C.U. SIX DAY TRIALS.

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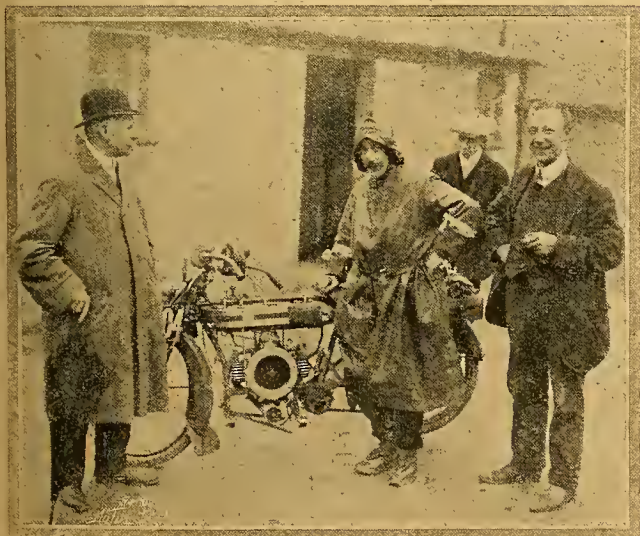
H. Mellor Jameson (6 h.p. Enfield sidecar) who gained all possible marks, and was awarded "The Motor Cycle" private owners' cup for best performance on a passenger machine.

### The Luncheon Interval at Exeter.

Lunch was arranged at Exeter, the route being *via* South Molton and Tiverton. Troubles were not yet over. Miss Hammett reported that her carburettor temporarily caught fire, and her belt had also given trouble. Rain had fallen incessantly since the Porlock climb, and penetrated to the interior of the magneto of J. Cocker's Singer. He struggled along gamely for miles, and missed his lunch in order to finish, but finally the magneto gave out altogether, and for the second time in Six Days' Trials Cocker had to retire on the last day; could anyone imagine anything more unlucky? Another who retired at Exeter was Gordon Fletcher. He, too, had seen life on this last eventful morning. First one cylinder gave out, and he continued on the other until No. 2 also stopped firing. He was also in great pain, as he fell on the Taunton tramlines at the start and sprained his shoulder.

### A Strange Incident.

At Bridport, on the last section of all, Wilberforce was descending a hill when an exhaust valve cap came unscrewed and flew into the hedge. A hunt for it proved fruitless, so he procured a brass plug and turned it up to fit in a blacksmith's shop. Trouble was prevalent to the bitter end. W. D. South broke a valve, and was lucky to finish to time.

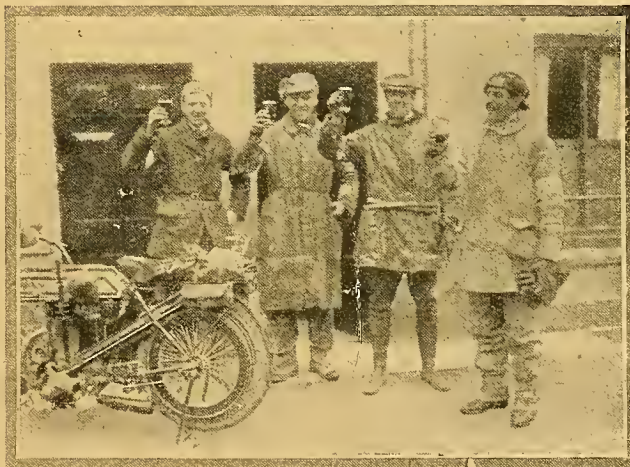


W. B. Gibb and P. W. Moffatt (2½ h.p. Douglas) chatting with Mr. Douglas, sen., at the finish on Saturday.

George Brough encountered a van broadside on in the roadway and unfortunately hit the wheel and cut his leg. With true British pluck he had it hastily bandaged, and, assisted into the saddle by Berwick and Dixon, he made a non-stop run to the finish, and had to be lifted off the saddle again, but he had accomplished his object—full marks throughout! Eight miles from home Babbington's magneto became saturated inside, and refused to spark. Reluctantly he accepted Admiral Arbuthnot's offer to tow him to Taunton. The crowd at the finish was much amused by his mud-bespattered appearance, dirt having been flung all over him from head to toe by Admiral Arbuthnot's Triumph. R. C. Davis (Chater-Lea), who had lost no marks to date, exceeded his time limit by several hours. His delay was due to water in the magneto on the last stage of the 1,000 miles. Other retirements were G. Nott (Matchless), Phillips, the local rider of a Triumph; Haswell (Bradbury), front wheel bearing trouble; and Sangster (Ariel), valve trouble, which caused him to arrive outside time.

### Re-examination of Machines and Tyres.

On returning all the solo machines using tyres and belts entered for test were taken into the small garage, and there these accessories were removed and the tyres examined to see if they still bore the A.C.U. stamp, and to ascertain their condition, and were weighed. They were weighed before the trial after purchase, and by the amount of weight



A dust layer in Maiden Newton. The competitors are: E. Herdman (Rudge), G. Griffith (Zenith), G. Brough (Brough), and A. E. Catt (Triumph).

lost the degree of wear will be judged. Major Lindsay Lloyd and Mr. H. J. Macnamara were in charge of these arrangements. Some of the tyres were in magnificent condition, and we could not help noticing the rear Pedley cover off Griffith's Zenith, which appeared to be in almost perfect order, and showed little if any wear. The Palmer tyres on Smith's Clyno were equally good, and it was almost impossible for any casual observer to tell the difference between the rear one and a new cover. Hutchinson tyres behaved consistently with their excellent record under similar circumstances. The Stelastic tyres also came through the test well. The Roms on the James machines were in very good condition. The John Bull tyres were also well worthy of notice. The Pedley belt was pre-eminently successful, and the Service belt also behaved well in the wet weather. The machines were examined by the judges early in the morning after the trials had finished. They were, of course, in an extremely dirty condition owing to the dreadful weather experienced. Their condition mechanically was good on the whole, though the following lost marks as under.

F. C. North (Ariel), stand broken, 5 marks lost.

S. Sawyer (Premier), front mudguard clip broken, 5 marks lost.

A. P. Morris (Zenith), back hub out of adjustment, foot-rest broken, 5 marks lost.

G. Brough (Brough), head loose, 5 marks lost.

M. Garrey (Swan), back wheel damaged, frame distorted, 5 marks lost.



## THE OFFICIAL AWARDS.

**The Team Prize.**

For the four-year running Messrs. Phelon and Moore have gained the team prize. Not only did their machines obtain the highest number of marks—3,150—but their appearance throughout the trial aroused favourable comment on all sides. Messrs. Pratt, Shaw, and Drake deserve our heartiest congratulations, and also Mr. Sproule, who gained a gold medal. Each of the three riders mentioned above gains a gold medal, while Mrs. Hardee, the plucky lady rider of a P. and M., is awarded a silver medal.

The Silver Cup, given by Dr. Hes of the Taunton M.C.C. for the best performance of a private owner of a solo machine in the slow hill-climb. Jesse Baker (3½ h.p. Scott). His total time on the two hills was 31.3m.; speed, 5.75 miles an hour.

The silver cup presented by Messrs. Harrisons' Hotels, Ltd., for the best performance of a private owner driving a passenger machine in the slow hill-climbs. J. Tassell (7 h.p. Matchless sc.). Total time on the two hills, 21.35m.; speed, 8.44 miles an hour.

**"The Motor Cycle" Cups.**

The cup presented by *The Motor Cycle* for the best performance of a private owner on a solo machine was awarded to W. G. McMinnies (Triumph), who also gains the cup presented by Col. Boles, M.P., M.F.H., for the same performance. The other private owners' cup presented by *The Motor Cycle* was awarded to H. Mellor Jameson (6 h.p. Enfield sc.), who made the best private owners' passenger performance. Jameson also gains the cup awarded by Mr. T. S. Penny, J.P., for the best private owner passenger performance on the hills.

**Tyre Awards.**

The special tyre prize was awarded to the Palmer Tyre Co. for the set of tyres (26 x 3in.) on F. Smith's Clyno and sc.

The special belt prize was awarded to Messrs. Pedley and Son, set No. 17, used on P. Weatherill's 3½ h.p. Zenith.

**Analysis of Results.**

The following is an analysis of the results:

Phelon and Moore, Ltd., five machines and gained four gold medals, one silver, and team prize.

The Rover Co., Ltd., three machines, gained three gold medals, and came second for team prize.

A. J. Stevens, Ltd., five machines, gained four gold medals and one silver, losing the fifth gold medal by eighteen marks.

Hendee Mfg. Co., four Indians, three gold medals.

Enfield Co., four machines and gained three gold medals,



The winning P. and M. team: in the pouring rain. Left to right: W. Pratt, P. Shaw, and W. C. Drake. P. and M. riders have secured the team prize since 1909 (tying last year)—a wonderful record of excellence and consistency.

one silver, and two special prizes.

Motosacoche, Ltd., entered one machine, and, following their usual practice, gained one gold medal.

Components, Ltd., entered three Ariels and gained two gold and one bronze medal.

James Cycle Co., Ltd., three machines, three gold medals.

Scott Engineering Co., Ltd., three machines and gained three gold medals and one special prize.

Premier Cycle Co., Ltd., five machines, three gold medals.

Zenith Motors, Ltd., five machines and gained two gold and three silver medals.

Lloyd Engineering Co., four machines and gained three gold and one bronze medal.

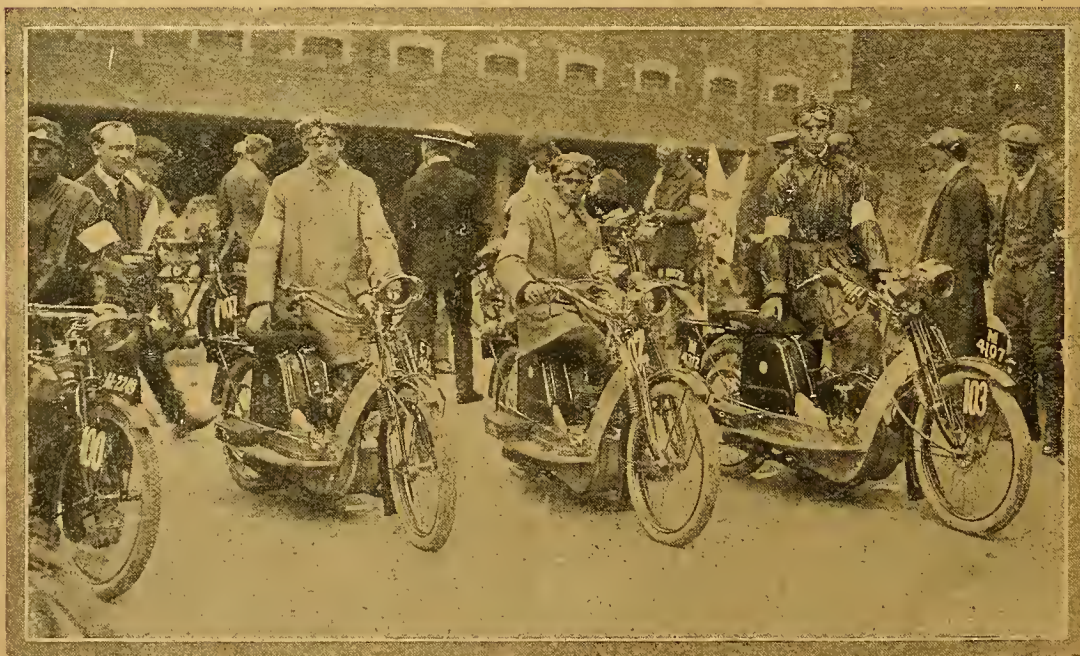
Swift Co., Ltd., two machines, two gold medals.

Collier and Sons, Ltd., five Matchless machines and gained two gold and one silver medal and a special prize.

G. Brough and Co., one entered and one gold medal.

Green Precision, one entered and one gold medal.

Morgan and Co., one entered and one gold medal and special prize.



The Swan Tear, photographed in the yard of the Drill Hall, Taunton. These machines have open spring frames and pan seats, but were unlucky in the trials.



## A.C.U. SIX DAYS' TRIALS.

TABULATED LIST OF AWARDS, MARKS LOST ON HILLS AND FOR TIME.

Name of Rider and Machine.	Monday.		Tuesday.		Wednesday		Thursday.		Friday.		Saturday.		Awards. Maximum marks, 1050.
	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	
C. T. Newsome (3½ Rover) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
D. H. Noble (3½ Rover) .....	—	—	—	—	—	—	—	—	—	—	—	—	975 Gold Medal.
A. J. Sproston (3½ Rover) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
C. L. Scott (3½ Rudge) .....	—	—	—	—	—	—	50	—	—	—	50	18	903 Silver Medal.
W. D. South (3½ Rudge) .....	—	—	—	—	50	—	—	—	—	—	—	—	1000 Gold Medal.
*A. R. Penny (2½ A.J.S.) .....	—	—	—	—	—	—	50	—	—	—	50	—	950 Gold Medal.
W. Pratt (3½ P. & M.) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
P. Shaw (3½ P. & M.) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
W. C. Drake (3½ P. & M.) .....	—	—	—	—	—	—	—	—	—	—	—	—	1025 Gold Medal.
*W. J. M. Sproule (3½ P. & M.) ..	50	—	10	—	—	—	—	—	—	—	—	—	990 Gold Medal.
J. F. Sirrett (7 Indian) .....	—	—	—	—	—	—	—	—	—	—	50	—	1000 Gold Medal.
B. A. Hill (7 Indian) .....	—	—	—	—	—	—	—	—	—	—	50	—	1000 Gold Medal.
H. Greaves (2½ Enfield) .....	—	—	—	—	—	—	50	—	—	—	50	—	925 Silver Medal.
J. S. Holroyd (2½ Motosacoche) ..	—	—	—	—	—	—	—	—	—	—	50	—	975 Gold Medal.
*Mrs. Hardec (3½ P. & M.) .....	50	—	—	—	—	—	50	—	—	—	50	—	905 Silver Medal.
*R. C. O. Wells (3½ Bradbury) .....	—	—	—	—	—	—	—	—	—	—	50	—	832 Bronze Medal.
W. F. Newsome (3½ Triumph) .....	—	—	—	—	—	—	—	—	—	—	50	—	1000 Gold Medal.
S. Crawley (3½ Triumph) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
S. Moffatt (2½ Douglas) .....	—	—	—	—	13	—	—	—	—	—	—	—	1012 Gold Medal.
P. Phillips (2½ Douglas) .....	—	—	—	—	—	—	50	—	—	—	50	—	925 Silver Medal.
L. Newey (3½ Ariel) .....	—	—	—	—	—	13	—	—	—	—	—	—	1034 Gold Medal.
F. C. North (3½ Ariel) .....	—	—	—	—	25	—	—	—	—	—	—	—	1039 Gold Medal.
F. C. Sangster (3½ Ariel) .....	—	—	—	—	—	—	50	—	—	—	150	—	775 Bronze Medal.
T. Pollock (3½ James) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
A. D. Arter (3½ James) .....	—	—	—	—	—	—	—	—	—	—	50	—	1000 Gold Medal.
*S. Brown (3½ James) .....	—	—	—	—	—	—	—	—	—	—	50	—	984 Gold Medal.
F. Philipp (3½ Scott) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
*Jesse Baker (3½ Scott) .....	—	—	—	—	—	—	—	—	—	—	50	—	1000 Gold Medal.
*J. N. Longfield (3½ Scott) .....	—	—	—	—	—	—	—	—	—	—	50	—	975 Gold Medal.
*S. Sawyer (3½ Premier) .....	—	—	—	—	—	—	—	—	—	—	50	—	970 Gold Medal.
*E. D. Dickson (7 Indian) .....	—	—	—	—	—	—	—	—	—	—	50	—	1000 Gold Medal.
*F. P. Dickson (6 Zenith) .....	—	—	—	—	—	—	—	—	—	—	50	34	951 Gold Medal.
W. E. Cooke (3½ A.S.L.) .....	—	—	—	—	50	—	150	—	—	—	100	—	697 Bronze Medal.
P. Platt (3½ Bradbury) .....	—	—	—	—	—	—	—	—	—	—	50	—	967 Gold Medal.
L. A. Bees (3½ L.M.C.) .....	—	18	—	—	—	—	—	—	—	—	50	—	982 Gold Medal.
S. K. Jones (3½ L.M.C.) .....	—	—	—	—	50	40	—	26	—	—	50	—	8



## PASSENGER CLASS.

Name of Rider and Machine.	Monday.		Tuesday.		Wednesday.		Thursday.		Friday.		Saturday.		Awards.
	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	Hill-climb	Time.	
H. V. Colver (6 Enfield).....	—	—	—	—	—	—	—	—	—	—	—	—	1000 Gold Medal.
C. M. Keiller (8 G.W.K.) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
H. Gibson (3½ Bradbury s.c.) .....	—	—	—	—	—	—	—	—	—	—	50	—	1000 Gold Medal.
*H. M. Jameson (6 Enfield) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
F. Smith (5-6 Clyno s.c.) .....	—	—	—	—	—	—	50	—	—	—	—	—	975 Gold Medal.
H. F. S. Morgan (Morgan) .....	—	—	—	—	—	—	—	—	—	—	—	—	1050 Gold Medal.
J. Munday (6 A.C.) .....	—	61	10	—	—	—	100	52	—	—	50	—	637 Bronze Medal.
A. J. Stevens (5 A.J.S. s.c.) .....	—	—	—	—	—	—	—	—	—	—	50	—	975 Gold Medal.
C. R. Collier (7 Matchless s.c.) ..	—	—	—	—	—	—	—	—	—	—	50	—	975 Gold Medal.
*R. E. Guest (7 Matchless s.c.) ..	—	—	—	—	23	—	—	—	—	—	—	—	965 Gold Medal.
*J. Tassell (7 Matchless s.c.) .....	—	—	—	—	—	—	50	—	—	—	50	17	883 Silver Medal.



A.C.U. Six Days' Trials. J. Oliphant and R. Holloway (Premiers) passing Upottery school. Note the enthusiastic onlookers.

### Tyres in the Six Days' Trial.

It is worthy of note that the tyres fitted to the P. and M. team machines ridden by W. Pratt, P. Shaw, and W. C. Drake were Kempshalls. The same tyres were also used to the fourth P. and M. ridden by W. J. M. Sproule.

### Taunton Topics.

J. R. Haswell knew early on Monday that he was in for trouble with his experimental gear. The shell of it ought to revolve forwards on the high gear, backwards on the low gear, and to remain stationary on the middle gear; but on Monday it was revolving forwards all the time. It was hastily assembled late on Saturday night, and when it was finished it was hardly in good trim. But time prevented its being taken down again. ☹

### Some Scottish Notes.

**A JOINT HILL-CLIMB.**—The Scottish Border M.C.C. and the Edinburgh M.C.C. are to hold a joint hill-climb on August 24th at Lanton Hill, near Jedburgh, the place of the Anglo-Scottish matches.

**THE S.A.C.U.**—The Scottish Auto Cycle Union continues to progress rapidly, and there is now no doubt of its claim to the control of Scottish motor cycling. With all the important clubs such as Edinburgh, Glasgow, Perth, etc., giving their support, and only a few minor clubs un-

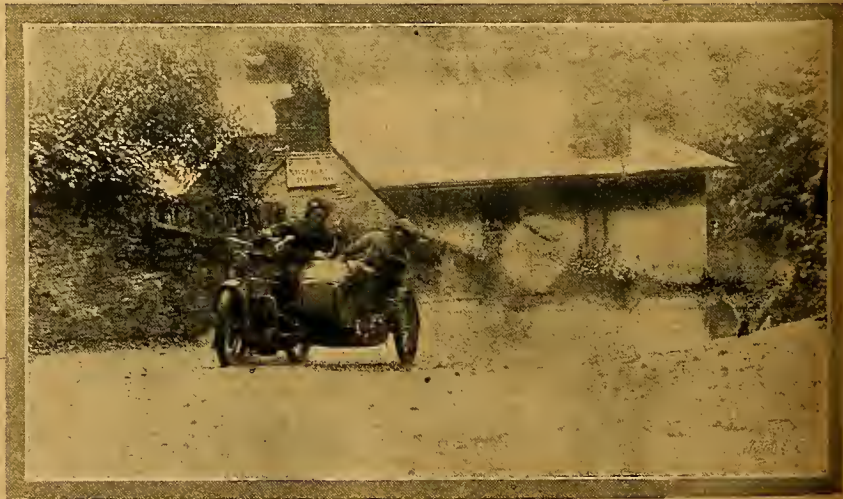
attached, the Union is in a very strong position. The Union badge is now being issued, and is a striking production with its red lion rampant on a yellow ground. With attractive insurance schemes (includ-

ing an unlimited third party policy for £1), free legal defence, touring and hotel facilities, use of R.A.C. and S.A.C. scouts, etc., it is no wonder that the Scottish clubs are experiencing a great accession to their ranks.

**NO SCOTTISH SHOW.**—An attempt was made to include a motor cycle section in this year's Scottish Motor Show, held in Glasgow last January, but the trade refused their sanction. The Scottish Motor Trade Association hoped, however, to hold a combined motor cycle, industrial vehicle, and motor boat show in Edinburgh next year, but, unfortunately, this also has fallen through, so that Scottish motor cyclists have yet to see a representative selection of modern machines, and this in a country where more motor cycles are owned in proportion to the population than in England.

### The Trade in the United States.

We understand that with the exception of two important firms, which have made exceptional arrangements for quick production, all manufacturers in the States are behind in deliveries and cannot cope with their orders. Several are making additions to their factories and one firm's addition alone will cost about £25,000. We also understand that more than one American firm contemplates building in Canada to escape tariff duties.



THE LAST SEVERE HILL ON THE SIX DAYS' TRIAL ROUTE. R. C. Davis (8 h.p. Chater-Lea sidecar) on the acute bend of Lynton Hill, Lynmouth. This was one of the two bonus hills.





### TIME TO LIGHT LAMPS.

Aug 22nd	...	...	8.8	p.m.
" 24th	...	...	8.3	"
" 26th	...	...	7.59	"
" 28th	...	...	7.55	"

### Saturday at Brooklands.

There is a fine entry for the B.M.C.R.C. meeting at Brooklands next Saturday, a number of prominent riders having entered for the 150 miles race, which is the chief event.

### German Hill-climb.

The results of a hill-climb held near Bavaria recently are: 1, Dietz (1½ Motosacoche); 2, Oberlaender (2½ Motosacoche); 3, Bernstein (2¼ N.S.U.) The fourth and fifth riders also bestrode N.S.U.'s

### French Race Banned.

The motor cycle race announced for next Sunday over the Fontainebleau circuit, and in which it was expected a number of British motor cyclists would take part, will not prove the success anticipated, for the Auto Cycle Union has stepped in and threatened to suspend all British contestants.

The next important race in France is on the 8th prox.

### Northern Speed Trials.

On Saturday last the Rotherham and District M.C.C. held a speed trial over half mile course with the following results: 1, J. Baker (¾ Rudge), 33½s.; 2, L. Shephard (¾ Triumph), 34½s.; 3, Hardwick (¾ Ivy), 42s. Sidecars—1, H. S. Watson (¾ Premier), 4½s.; 2, E. J. Willis (¾ James), 45½s.; Dr. Sedgwick (¾ Humber), 59½s.

### French Clubs and Their Differences.

The delegates of the different French clubs who have refused to recognise the Automobile Club of France as sole ruling power will meet on November 2nd and 3rd at the Moto Club de Lyon's headquarters. At this meeting the calendar for 1913 will be elaborated, and delegates elected to represent France at the International Congress, which is to be held in London at the end of November.

### Range Requests.

Some strange requests hail from overseas. We have just seen an enquiry from a member of a native regiment Southern Nigeria who wants a motor cycle and anticipates that for £7 10s. he will be able to get an up-to-date light-weight engine in such condition that no one would know it from a new machine. Solid tyres are also specified, and on a lightweight! Finally the machine is to be supplied on the easy payment system

### Six Days' Trial in France.

The six days' event (1,500 kilometres) to be organised by the Automobile Club of France next month must, says a recent decision, receive at least fifty entries. "But France will only provide a very small contingent," remarked somebody to an influential member of the A.C.F. "Well, we will fetch the others from England" was the reply. Will the English firms agree though?

### The M.C.F. Grand Prix and Other Races.

The Automobile Club de France, which claims the control of motor cycle events in France, all of which must be run under its rules, has discountenanced the following competitions; the Circuit de Fontainebleau, organised by the Moto Cycle Club de France, to be held on August 25th, and the Paris Tour, to be run by the Touring Moto Club de France on September 29th. Any riders taking part in these events will be suspended by the ruling body. Owing to the agreement existing between the Automobile Club de France and our own Royal Automobile Club, with whom the Auto-Cycle Union works in perfect harmony, the A.C.U. warns British riders against taking part in these events, as should they do so suspension is bound to ensue. The Automobile Club de France is organising a six days' trial early in October, and the Auto-Cycle Union will be happy to undertake the organisation of sending over British riders who wish to compete as far as foreign licences and the journey are concerned.

### Roads Improvement Association.

The above Association has decided to present a petition to the House of Lords against the use of tramcar trailers and coupled tramcars in the Metropolis, as it is thought that these will add very considerably to the congestion and danger of the already thickly trafficked London streets.

### French International Cup Race.

For the above event, which will be run under A.C.F. rules on September 8th-9th, and therefore a race in which British riders may take part without incurring the ban of the R.A.C. and A.C.U., the following entries have been received: Vernon Taylor and Scott (Rudge-Whitworths), Ravelli (Triumph), Grapperon (New Hudson), four Peugeots, three Terrots, two Alcyons, and a Wanderer. In this race motor bicycles with engines exceeding 500 c.c. will not be admitted. Entries should be sent to the Secretary A.C., de la Sarthe au Mans, or L'Auto, 10, rue du Faubourg, Montmartre, Paris.

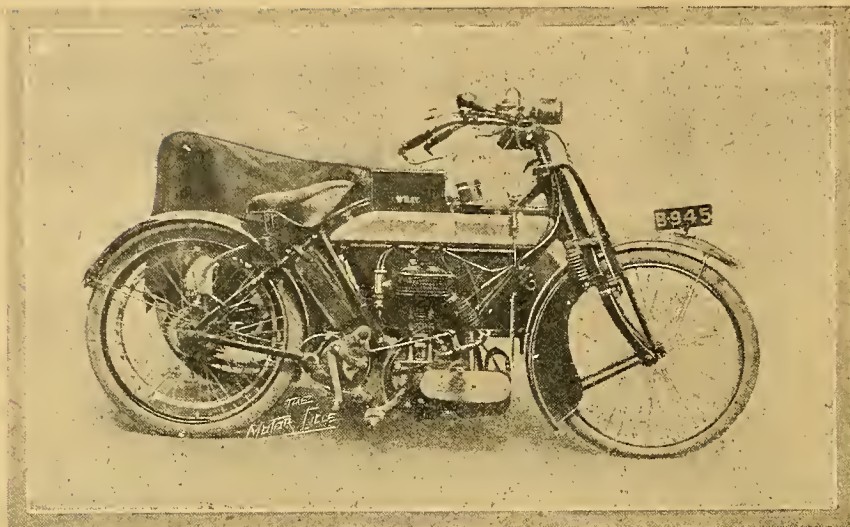
### A Cross Road Improvement.

A notable improvement has been effected at a dangerous junction of roads at Beckenham, Kent, where four roads meet in the form of a cross. On a signpost erected at the junction a mirror about three feet high and the same width has been fitted. It is of concave form and shows the approaching traffic.



English-Dutch Trial. One of the numerous railway crossings. Observe the gates which are moved vertically.





Geo. Wray's 4 1/2 h.p. Wray-Precision sidecar which has a Bowden countershaft gear.

#### Ferry Charges for Cyclecars.

The A.A. and M.U. are endeavouring to obtain more reasonable charges for cyclecars at ferry crossings. At present such vehicles are being charged full car rates at many ferries, although the charge for motor cycles and sidecars is very much less.

#### Rumours that will not die.

A short time ago we published a denial from the Ford Company stating that they were not building or contemplating a cyclecar. This denial, however, was not sufficient to kill the rumour, for it has again reached our ears in a more definite form than on previous occasions.

#### Rand M.C.C. (Transvaal).

A reliability trial was held recently. Jackson's Drift Hill was officially observed. Result: 1, P. Flook (2 1/2 Chater-Precision), hill-climb 56, reliability 55, total 111; 2, G. Weddell (3 1/2 New Hudson), 51, 52, 103; 3, Coulson (3 1/2 T.T. James), 48, 52 1/2, 100 1/2; 4, Taylor (3 1/2 Indian), 57, 43, 100, and Gwilliam (2 1/2 Douglas), 60, 40, 100, equal.

#### Imports and Exports of Motor Cycles.

The value of the imports of motor cycles and parts has increased by nearly £10,000 in the last two years, this increase being almost entirely in parts. The exports, as usual greatly in excess, have increased by over £44,000 in the same time. The value of these exports for the first seven months of the present year is £325,697, more than four times as great as it was two years ago.

#### Motor Cycles at the Paris Show.

A few weeks ago we published a paragraph stating that no motor cycles would be exhibited at the Paris Salon. This should have read, "no French motor cycles," as we understand that English and foreign firms other than French will exhibit motor cycles. The reason French machines will not be exhibited is because a year or two ago the motor cycle manufacturers agreed not to exhibit in Paris or elsewhere in the Department of the Seine before January, 1913.

FUTURE EVENTS	
Aug. 31.—	Coventry and Warwickshire M.C. Open Hill climb.
31.—	Dublin M.C.C. Open Sidecar Reliability Trial.
Sept. 7.—	Streatham and District Open Hill-climb.
" 7.—	Liverpool M.C.C. Open Reliability Trial.
" 14.—	B.M.C.R.C. Race Meeting.
" 16.—	Edinburgh and District M.C.C. Open Hill-climb on Amulree.
" 21.—	Herts. County M.C.C. Open Hill-climb.
27.—	Birmingham M.C.C. 24 Hours' run to Edinburgh (Open)

#### Coventry Club's Open Hill-climb.

There are already a good number of entries for the seventh open hill-climb of the Coventry and Warwickshire Motor Club on August 31st, entries for which close at ordinary fees to-morrow (Friday). Eight classes are down on the programme. A good proportion of the trade are included among the entries. We understand that the hill chosen is a safe one.

#### The Petrol Committee.

The first interim report is to hand and contains much interesting matter. The committee has been engaged in investigating the methods of handling petrol in this country, and is of opinion that, if the Port of London Authority will allow the transport of consignments of 1,000 tons to pass up the river for local storage, the possibility of shortage owing to labour troubles will be much reduced. The sittings will be renewed in September. Copies of the report may be obtained from Mr. J. W. Orde, Secretary R.A.C., Pall Mall, S.W., at 1s. 2d. post free.

#### Touring and Hotel Charges.

One or two enquiries have reached us from affiliated members of the Auto Cycle Union regarding the use of the officially appointed hotels. It is not made absolutely clear in the A.C.U. handbook that on presentation of the affiliated membership card the reduced tariff at these hotels can be made use of by members of affiliated clubs. These hotels will be found in most instances both well appointed and moderate in charges; apart from this it is a convenience to know exactly what one is going to be charged at an hotel, and such information is clearly set forth in the handbook. In most instances the letters S.B.B.A. appear under the name of each hotel, these signifying supper, bed, breakfast, and attendance. Table d'hôte dinner is not usually included under this heading, and it is advisable to bear it in mind.



H. Colver (6 h.p. Enfield Sidecar) rounding the lower bend on Beggars' Roost. Higher up he unfortunately collided with the bank.



# SCOTT

YOU CAN GET A SCOTT IF YOU GO TO THE

## COLMORE

Colmore Row, BIRMINGHAM.

Deansgate, MANCHESTER.

### WHAT A RECORD FOR RELIABILITY!

T.T. Race	-	-	-	-	First
Scottish Six Days	-	-	-	-	Private Owners' Prize.
A.C.U. Six days	-	-	-	-	Three Gold Medals.

Each machine entered obtained a Gold Medal, and Baker (Private Owner) on Scott gained special prize for climbing Test Hill in slowest time (Average, 5.75 m.p.h.) thus proving flexibility.

It is the machine for the gentleman rider in a class by itself for Speed, Reliability, and Simplicity.

## COLMORE FOR SCOTTS.

**L.M.C.** A.C.U. Six Days' Reliability Trials. **100%**

In this arduous test

**FOUR L.M.C. MACHINES WERE ENTERED**  
**ALL FOUR FINISHED THE COURSE**  
 and secured

**3 GOLD MEDALS AND 1 BRONZE MEDAL**

*For Business or Pleasure ride the L.M.C.*

Makers: THE LLOYD MOTOR ENGINEERING CO., LTD.,  
 L.M.C. Works, Monument Road, BIRMINGHAM.



# STILL ANOTHER



## SUCCESS.

### A.C.U. SIX DAYS' TRIALS.

## THREE ARIELS ENTERED.

Result:

## TWO GOLD MEDALS.

## ONE BRONZE MEDAL.

Two Ariel riders, L. Newey and F. C. North, secured the bonus of 50 extra marks for successfully climbing the Two Special Hills—Beggars' Roost and Porlock.

### SCOTTISH SIX DAYS' TRIAL.

THREE ARIELS ENTERED and secured ONE GOLD MEDAL, ONE SILVER MEDAL, and ONE BRONZE MEDAL.

---

Send for Art Catalogue, Dept. 2.

## ARIEL WORKS, BOURNBROOK, BIRMINGHAM.

London Address: FRISWELL'S, 1, Albany Street, N.W.



## SIX DAYS' TRIALS NOTES.

N. Soresby was first announced as having made the west ascent of Countisbury Hill on Tuesday; but it was subsequently ascertained that he broke a chain and stopped effect repairs.

It is a distinct score for the A.J.S. to be credited with the slowest ascents of Countisbury Hill, both in the bicycle and passenger classes.

The new baby Norton accompanied the trials riders on several days, F. A. Hardy, the press secretary, being in the saddle.

Petrol supplies were carried out in a systematic way. The Shell Co. supplied competitors, free of charge, and arranged for ample supplies at the mid-day stops. Approximately 1,400 gallons were used. Mr. A. E. Cockerton supervised the arrangements.

Although, as we observed last week, scorching to make up time in case of trouble was permissible, we saw very little real racing. This was due to the competitors riding just within minimum time and thus having twenty minutes in hand for possible delays.

On Wednesday, between Felton and Falfeld, we saw a weird contraption in the shape of a tandem-motor bicycle, with two bucket seats. A heavy downpour drove its occupants to shelter, and as we were on a competing passenger machine we could not stop to examine it. We should imagine it is a risky vehicle on grease.

Some fear was expressed early in the week that competitors would arrive at Taunton after lighting up time. Thanks, however, to careful organisation no man who rode to schedule arrived later than the hour at which lamps have to be lit. The evenings, however, were cloudy and dark, and several had to light their lamps on Wednesday—the longest day's run.

The secret check system has worked well. If a man was late he had, of course, to try and make up time, but those who had no trouble care not push too far ahead for fear of arriving at some unexpected check too early. Thursday was much appreciated, as owing to the tricky course there were no checks. There was a marked difference in the way the men rode on Thursday to that in which they drove on the other days.

Boy Scouts were of inestimable service in directing the way. Several hundred were employed in this manner during the week. Special praise must also be accorded to the police for assistance in guarding cross roads.

How interested were the public in the lady competitors! In all the towns and villages the residents were especially interested in the doings of Mrs. Hardee and Miss Hammett.



Crawley (Triumph) on the first bend of Porlock. He was one of the twenty-six who successfully climbed the hill.

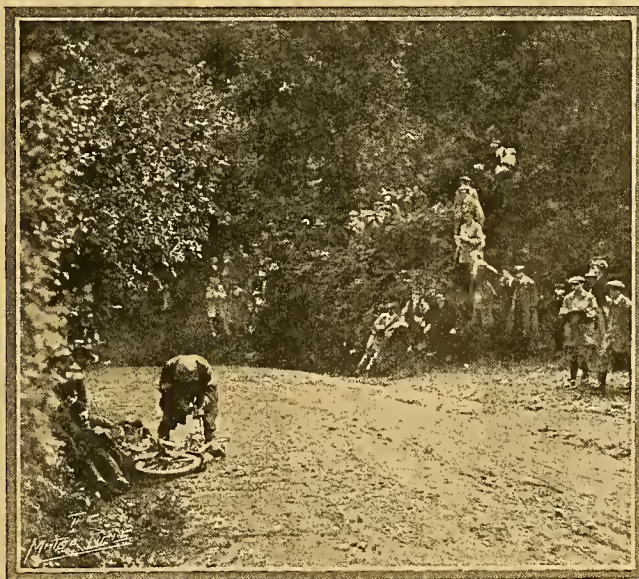
Fifty-nine competitors succeeded in making clean ascents of Beggars' Roost and received the special bonus of twenty-five marks.

The number of retirements on the various days forms interesting reading. The number who gave up on Monday was 11, Tuesday 14, Wednesday 5, Thursday 10, Friday 5, Saturday 4.

Philip Grout, dressed as a Dutchman, caused much amusement by riding through the main streets of Taunton, on Friday evening, on a bone-shaker quite forty years old, the property of a well-known Taunton resident.

One well informed daily paper announced on Wednesday morning that a lady was still leading in the great motor cycle race in which there were 132 competitors!

On Tuesday evening the officials of the Auto Cycle Union were entertained to dinner at Clarke's Hotel (where, by the way, the arrangements have been excellent). Colonel Hles. M.P., M.F.H.) presided, and on his right sat Alderman W. F. Whittingham, Mayor of Taunton. In proposing to toast of the Auto Cycle Union, Colonel Boles referred to the beauty of the country traversed during the trials, to the hills in which he would back against any in the country for going up or coming down. The trials were good not only for the pastime, but helping to encourage a machine to manufacture of which was an adjunct to the trade and business of the country. He coupled with the toast the name of the Rev. E. P. Greenhill. Mr. Greenhill made an excellent speech in reply, and spoke of the great help rendered by members of the Taunton club. Major Lindsay Boyd then proposed success to the Taunton and District A.C.C. The Mayor and Mr. Potter replied, and in his speech the latter referred to the interest taken in the trial by the inhabitants of Taunton. Among those present was Mr. T. Goldsworthy Crump, who has done magnificent work in helping to organise the trials. He is the district surveyor, and was mainly responsible for the route.



H. E. Haswell (B'adbury) skidded into the ditch on the first bend of Porlock, and knocked down a spectator who persisted in standing on the corner.



## Six Days' Trials Notes.—

## The Work of the Officials.

The officials have done their work so well it is almost impossible to give praise to any individual for fear of offending others whose names might by accident be omitted. Grateful thanks must be rendered to Messrs. Potter, Crump, and other members of the Taunton Club to whom the success of the trial is in no small measure due. Major Nicholl spent ten days of a well-earned leave in acting as judge. Mr. Nisbet, as clerk of the course, and general superintendent of affairs, was, of course, splendid. Mr. Macnamara worked hard and effectively, while too much praise cannot be given to Mr. H. A. Cooper, who, after retiring on the first day, devoted the whole of his time to the A.C.U. and rendered invaluable services. Mr. A. H. Priestley, who has had control of the marshalling arrangements, had an important and responsible position, which he filled in a most able manner. The numerous other officials did excellent work, but mention must be made of the untiring efforts of Mr. T. W. Loughborough, whose inexperience in long distance trials work placed him at a disadvantage, but who carried through his task in a most efficient manner, and sight must not be lost of the work of the assistant secretary, Mr. H. P. Beasley.

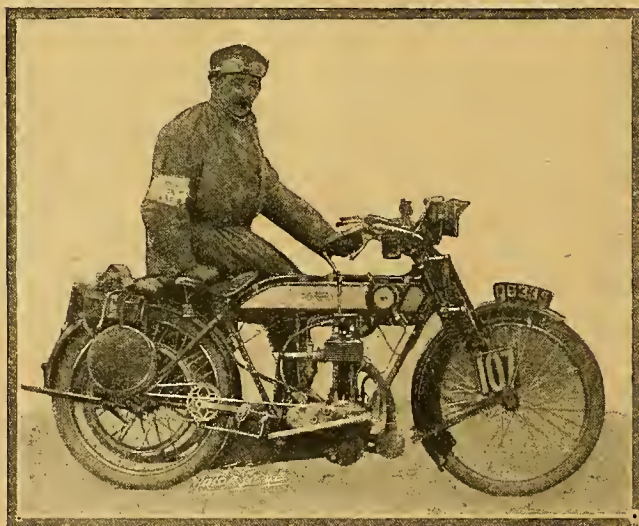
## Fletcher's Retirement.

On arriving at Taunton on Saturday night Fletcher announced that his engine had been ruined by some miscreant having put sand in his oil tank. The judges carefully examined his engine and found that his statement was absolutely correct. There was no doubt whatever that the foreign matter was silver sand and not road dust. The cylinder and bearings were, in consequence, very badly scored. Of course there is no trace of the originator of this dastardly act, of whom no words can adequately express our opinion.

The trial was a strenuous one for competitors, officials, and pressmen alike. Few averaged more than six hours' sleep, and some much less, owing to the early starts and the immense amount of checking and figures due to the record entry.

## Unruly Behaviour.

It is our unpleasant duty to have to record that on Saturday night there occurred some incidents to which we would rather not refer, but we feel we cannot let such behaviour which was seen on that occasion pass without comment. Fireworks were let off in the bar, a table was smashed, and the conduct of certain people was of a most disorderly nature. Those responsible are few in number, we are happy to say, but some means must be found, and that without delay, to put a stop to such goings on once and for all.



P. J. Evans (3½ h.p. 2-speed Humber) with 1913 kick starter. Evans shone conspicuously throughout, winning a special cup for the best ascent of Porlock, and gaining maximum marks.

Various ingenious owners of obsolete machines, desirous of accompanying the trials, are said to have found some twenty different ways of getting out of Lynmouth.

The machines without sidepieces to the front mudguards were plastered with red mud from end to end, and were at least four times as dirty as the standard patterns.

The observation on the test hills was linx-eyed. One rider thought he had spotted where all the officials were standing, and he furtively gave two lightning dabs with his outside foot. But he found himself penalised fifty marks when the sheet was posted.

One of the judges stored his machine in a public garage. While he was cleaning it one evening, three nefarious competitors entered very furtively, with bits of their machines in their pockets. The garage manager says "Faded" is the only word which adequately describes their exit.

A spectator made a clean ascent of Beggars' Roost on a single geared Triumph on the day of the test. He passed several variably geared competitors struggling to prevent their machines running backwards which was not complimentary to the trials men. Practically everybody stopped to cool at the hill foot.

Several forfeited 5 marks at the foot of Porlock in order to cool their engines.

The secret checks and 20 m.p.h. rule were the chief bugbear of the competitors, who otherwise enjoyed the trial.

G. Nott (Matchless sc.) finished four and a half hours late and lost 212 marks. He was so late that the arrows had been removed and he lost his way.

The surface of Porlock was in such a bad state that the judges talked of ignoring the failures on this ascent, but as 25 were successful in reaching the summit, 50 marks were deducted for failures according to the rules.

Should detachable wheels on passenger machines be barred? The A.C.U. judge's decision was in the affirmative, but detachable wheels seem a feature which should be encouraged.

Beggars' Roost, the steepest hill in England, gradient 1 in 3½, is not nearly steep enough to stop the best motor cycles nowadays. It would really be interesting to know what is the limit of a motor cycle's climbing powers.

Cleaning machines outside checks was again the rule. It is said that a certain chain-driven team carried Selvyt rags and polishing paste. Anyway, their spotless machines did them great credit.

One can especially sympathise with those competitors who retired on the last day.

Saturday's continuous rain penetrated to the interior of several magnetos and put a fullstop to their owners' records.

The 3½ h.p. Humber, ridden by P. J. Evans, which is practically a 1913 model, ran throughout the trial without a single adjustment. The Dunlop belt was not even shortened and the Continental tyres unpunctured. The rear tyre was a steel-studded pattern which accounts for his steadiness on Porlock.

P. and M. riders have not failed to gain the top award since 1909.

A 40 h.p. Daimler, belonging to Mr. Torkington, rendered invaluable service, as also the official 20 h.p. Humber car kindly lent by Humber, Ltd., and ably handled by J. Idicins.

There was great slaughter among the Devon and Somerset fauna: the bag included a fox cub, a hedgehog, a rabbit, a cat, sparrows, and several partridges.

Nearing Taunton each night certain trade riders might be seen riding "hands off" and cleaning their machines with a paraffin brush at 25 m.p.h.



# ENGLISH SIX DAYS' TRIALS

1909

1910

1911

1912

## KEMPSHALL'S

AGAIN WIN  
THE TEAM  
PRIZE

FOR THE  
FOURTH YEAR  
IN SUCCESSION

Coming through this severe Trial  
WITHOUT A  
PUNCTURE

Read the Telegram from Mr. W. Pratt below:

Handed in at Taunton.

To Studless, London.

"Kempshall Tyres on four P. & M's. in Six Days' Trials came through without a puncture. This is the fourth year in succession Kempshall Tyres have been fitted to Mr. Pratt's P. & M. and gone through without a puncture, truly a genuine record, hearty congratulations."

PRATT.

THE KEMPSHALL TYRE CO  
(OF EUROPE), LTD.,  
97-98. Long Acre, LONDON, W.C.

Telephone: No. 244 Gerrard (two lines).

Telegrams: "Studless, London."

Birmingham: Reginald G. Priest, 71, Lionel St. Paris: 46, Rue St. Charles. Antwerp: 48, Meir. Cape Colony: The Motor Supply Co., 7, New York Buildings, St. George Street, Cape Town. Agents for the United States: Cryder & Co., 583, Park Avenue, New York. Sole Agents for New Zealand: Goldingham and Beckett Ltd., Palmerston, N., New Zealand. Glasgow: 5, Royal Exchange Square.

C.D.C.



THE SUCCESS OF THE RELIABLE

# PREMIER

in the

**A.C.U. SIX DAYS' RELIABILITY TRIAL.**

S. Sawyer .. .. .	(3½ H.P. PREMIER.)
W. B. Little .. .. .	(3½ H.P. PREMIER.)
R. Holloway.. .. .	(3½ H.P. PREMIER.)

were awarded

## THREE GOLD MEDALS

The trial was held under most difficult conditions, the state of the roads and hills being extremely unfavourable to the competitors.

Write for full details—

THE PREMIER CYCLE CO., LTD., COVENTRY.

### HIGHEST POSSIBLE MARKS AND FINEST HILL CLIMB.

Made by "STERNOL" Users

in the A.C.U. 6 Days' Trial at Taunton.

22 Riders used "STERNOL"

(Standard Quality Oil)

and completed the 1,000 MILES, of whom10 secured Gold Medals3 obtained Silver MedalsAnd 4 took Bronze Medals

Mr. T. J. Evans, on a 3½ h.p. Humber, secured the highest possible marks (1,050), and made the finest performance up Porlock Hill.

Mr. Corks, on a 5 h.p. A.J.S., secured an extra Gold Medal for performance on the same hill.

This, in addition to the 6 Days' Sidecar Record recently beaten, where "Sternol" Oil was used, is a proof of its sterling quality, which never varies.

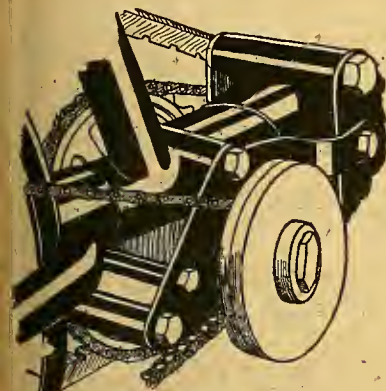
Write to-day for particulars and price list.

**STERNOL,**

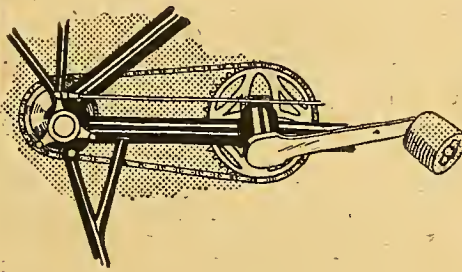
56, Royal London House,  
Finsbury Square, LONDON, E.C.



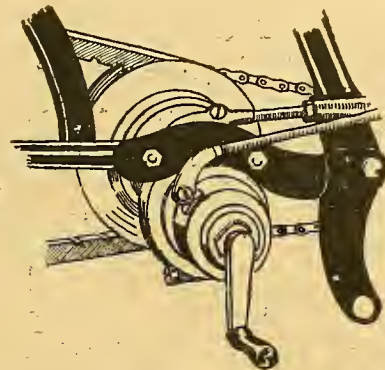




L.M.C. chain and belt 2-speed gear.



Kick starter on new 3-speed Humber.



Triumph bottom bracket 3-speed gear, used by J. R. Haswell.

One private owner's language was picturesque on Monday night, when he paused outside control to drain off the waste lubricant. The factory mechanics had fitted his special silencer in such wise that it was impossible to remove the crankcase drain plug.

The Rudge owner who brought to Birdlip an enormous decar resembling a giant vegetable marrow is requested to communicate with the advertising manager of Sutton's seeds, Reading, from whom he will hear of something to his advantage.

The rules say that "passenger machines must ascend the steepest hills with the passenger seated in a normal position." Definitions of "a normal position" by our own representa-

tive: (1.) With her face in the oiler on the far side of the rear hub. (2.) With her toes chocked in the carrier, body horizontally rigid, head 2ft. outside side wheel. (3.) Toes on the seat, body on the carrier, tongue cleaning the back number plate (apparently). (4.) Under the seat (on straight, easy hills only). (5.) Sitting bolt upright, jerking violently in parallelism with driver (on low-powered outfits only).

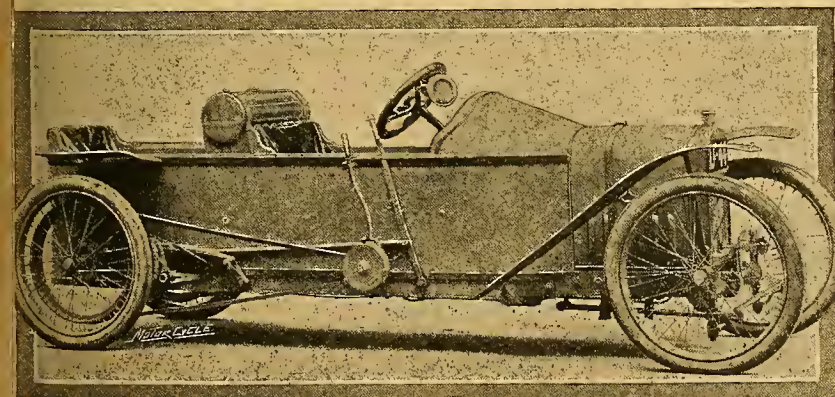
Some of the three-wheeled cyclecars carried enormous portmanteaux on their back carriers. Four garage attendants, finding one such suit case lying about, endeavoured to lift it. They sent for a steam crane. It is suggested that the A.C.U. supply 56 lbs. weights at the foot of each hill in future. Those single back wheels want a lot of holding down.

## WEIGHTS OF COMPETING MACHINES. Fully loaded and ready for the road.

ct. qr. lb.	ct. qr. lb.	ct. qr. lb.	ct. qr. lb.
T. Newsome (Rover) .. 2 0 9	T. Pollock (James) .. 2 2 10	P. Weatherill (Zenith) .. 2 0 24	H. Berwick (New Hudson) .. 2 1 20
H. Noble (Rover) .. 2 0 4	A. D. Arter (James) .. 2 2 10	G. Griffith (6 Zenith) .. 2 2 3	H. Dixon (New Hudson) .. 2 1 18
J. Sproston (Rover) .. 2 0 26	S. Brown (James) .. 2 2 8	J. H. Kerr (N.S.U.) .. 2 0 9	J. Cocker (2½ Singer) .. 1 3 12
B. Fry (Quadrant) .. 2 0 0	F. Philipp (Scott) .. 2 0 12	A. R. Abbott (Bradbury) .. 2 0 22	W. E. Phillips (Triumph) .. 2 0 2
L. Scott (Rudge) .. 2 1 3	J. Baker (Scott) .. 2 1 2	A. E. Catt (Triumph) .. 2 0 2	E. V. Pratt (O.K.) .. 2 0 26
V. D. South (Rudge) .. 2 1 2	J. N. Longfield (Scott) .. 2 1 8	D. Herdman (Rudge) .. 2 0 15	W. G. McMinnie (Triumph) .. 2 0 3
R. Penny (2½ A.J.S.) .. 1 2 4	S. Sawyer (Premier) .. 2 0 4	A. P. Morris (6 Zenith) .. 2 1 4	H. C. Mills (Green-Precision) .. 2 1 23
V. Pratt (P. & M.) .. 2 0 7	E. D. Dickson (Indian) .. 2 2 0	V. Wilberforce (Douglas) .. 1 1 23	G. Hunt (Campion) .. 2 0 23
Shaw (P. & M.) .. 1 3 22	F. P. Dickson (6 Zenith) .. 2 0 27	G. Castagooli (L.M.C.) .. 2 1 2	M. Garrey (5 Swan) .. 2 2 6
V. C. Drake (P. & M.) .. 2 0 1	W. E. Cooke (A.S.L.) .. 2 0 0	E. T. Babbington (7-8 Bat) .. 2 2 6	F. H. Thornton (5 Swan) .. 2 2 0
V. J. M. Sproule (P. & M.) .. 1 3 19	P. Platt (Bradbury) .. 2 0 24	W. B. Little (Premier) .. 2 0 3	W. B. Gibb (Douglas) .. 1 2 14
A. Hill (Jodian) .. 2 2 6	L. A. Bees (L.M.C.) .. 2 0 14	G. Brough (Brough) .. 2 0 24	Miss Hammett (Douglas) .. 1 2 8
I. Greaves (Enfield) .. 1 2 5	S. K. Jones (L.M.C.) .. 2 1 3	L. Cass (4½ Quadrant) .. 2 0 12	A. J. Dixoo (3½ Singer) .. 2 0 19
S. Holroyd (Motosacoeche) .. 1 2 6	L. M. Soresby (L.M.C.) .. 2 1 4	R. Mundy (3½ Quadrant) .. 2 0 10	P. J. Evans (Humber) .. 2 1 15
Mrs. Hardee (P. & M.) .. 2 0 12	B. Haddock (A.J.S.) .. 1 2 24		
C. O. Wells (Bradbury) .. 2 1 15	W. Heaton (A.J.S.) .. 1 2 10		
V. F. Newsome (Triumph) .. 2 0 5	J. D. Corke (5 A.J.S.) .. 2 0 26		
Crawley (Triumph) .. 1 3 23	H. E. Haswell (Bradbury) .. 2 2 25		
Moffatt (Douglas) .. 1 2 17	F. J. Watson (Swift) .. 2 0 20		
L. Fletcher (Douglas) .. 1 2 6	F. Peachey (Swift) .. 2 0 13		
Phillips (Douglas) .. 1 2 20	P. D. Walker (Rudge) .. 2 0 24		
Newey (Ariel) .. 2 0 19	R. Holloway (Premier) .. 1 3 24		
C. North (Ariel) .. 2 1 7	J. Oliphant (Premier) .. 2 0 13		
C. Sangster (Ariel) .. 2 0 20	J. Haslam (6 Zenith) .. 2 1 8		

## PASSENGER CLASS. Fully loaded with fuel, etc.

ct. qr. lb.	ct. qr. lb.
C. M. Keiller (G.W.K.) .. 11 2 7	J. Munday (A.C.) .. 8 3 19
R. C. Davis (Chater-Lea sc.) .. 7 2 7	A. J. Stevens (A.J.S. sc.) .. 5 3 24
H. Gibsoo (Bradbury sc.) .. 5 2 7	C. R. Collier (Matchless sc.) .. 6 2 14
H. M. Jamieson (Enfield sc.) .. 6 2 3	R. E. Guest (Matchless sc.) .. 6 2 3
F. Smith (Clyno sc.) .. 7 0 24	J. Tassell (Matchless sc.) .. 6 3 14
H. F. S. Morgan (Morgan) .. 7 3 17	G. Nott (Matchless sc.) .. 6 3 0
F. Hill (A.C.) .. 8 3 7	



The Super, a new belt driven cyclecar of smart design with tandem seats. The engine is a water-cooled Anzani of 8-10 h.p., and there are 16 speeds.



Perrin (Peugeot) winner of the Mont Ventoux hill-climb.

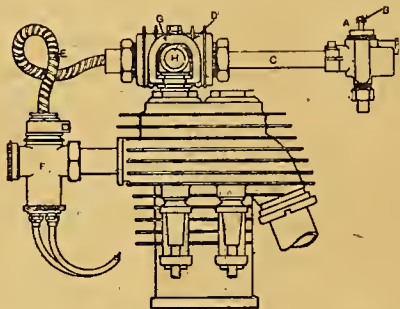


# Another Device for Burning Paraffin.

This apparatus known as the Fear-nought comminuter has been designed by Mr. Griesbach, of the M.G. and G. Motor Patents Syndicate, Ltd. One of the greatest troubles in the use of paraffin for power is pre-ignition, and on that account the compression must not exceed 64 sq. lbs. to the sq. in. Of this fact Mr. Griesbach takes advantage by providing a vaporising or heating chamber off the combustion head of the engine, and the extra compression space thus afforded naturally lowers the compression.

Referring to figure, the fuel is sucked in by the engine at A. It is sucked past the seating of a very lightly-loaded spring valve (the top of the spindle can be seen at B), which prevents its return and then meets with the currents of inspired air that cut right across its flow and break it up. The mixture then flows along the feed tube C, but as this and all the tubing that follows is of small diameter the velocity of the vapour has to be proportionately great. D is the vaporiser, or comminuter, in connection with the combustion head of the cylinder, and therefore the extension of the tube C, which passes through the comminuter.

is surrounded by the hot gases resulting from each cylinder explosion. At this part of its passage, too, the vapour meets a flat strip of metal that has been twisted helically, and is inserted in the extension of the tube C. This acts much as the rifling of a gun acts on a bullet,



and the centrifugal force that it imparts to the particles tends to throw the mixture against the heated walls of the small tube, and still further breaks it up. Finally, still at high velocity, the gas is conducted by the flexible tube E

to the chamber F, which is merely an inverted B. and B. carburettor throttle worked by wires and lever control.

The comminuter itself consists merely of a cast-iron ribbed cylindrical chamber with an offset passage communicating with the cylinder head and clamped down to its seating by the dog G. The offset passage is further extended at H to accommodate the displaced sparking plug.

In addition to preventing condensation, the high velocities of the gases lead to a scouring action being secured on the inner walls of the feed tube, so that there is no deposit, and, though this copper tube is of only 21 gauge, one that has been in work two years as yet shows no signs of giving out.

Mr. Griesbach has fitted his device on a  $3\frac{1}{2}$  h.p. White and Poppe engine, and tells us that it will take him up any hills. In fact, with paraffin, the engine, if anything, seems to develop slightly more power up to speeds of 800 r.p.m., though above that limit naturally the slower combustion of the paraffin begins to tell, and "all out" petrol holds an advantage of 2 or 3 m.p.h. The device can be applied to single or twin engines.

## CLUB NEWS.

### Newcastle and District M.C.

The Gordon-Roberts reliability trial will take place on the 24th and 25th inst. Route, *via* Lanchester, Alston, Penrith, Keswick, Windermere, Kirkstun Pass, Shap, Kirkby Lonsdale, Brough, Barnard Castle, Darlington, and Neville's Cross.

### The Motor Cycling Club.

The awards in the standard reliability and hill-climbing trial, held on the 3rd and 5th inst., are as follow: Silver cup, presented by Mr. H. E. Hull—A. J. Dixon. Gold medals—B. Mariani, L. A. Baddeley, H. Karlslake, D. Popplewell, R. M. Mariani, C. T. Newsome, and A. J. Spruston. Silver medals—R. Charlesworth, G. T. Gray, C. W. Meredith, W. E. Rootes, W. P. Tippet, P. H. Bentley, P. D. Walker, D. S. Baddeley, J. H. Kerr, R. E. Guest, A. da Silveira, R. C. Davis, C. Percival, and G. P. Howe. H. F. S. Morgan was disqualified for being more than 15m. ahead of schedule time.

### Derbyshire and North Stafford A.C. (Motor Cycle Section).

On Saturday, members of the above club held a highly successful hill-climb on Hob Hill, Hazelwood. The weather conditions during the earlier part of the morning were of the worst, but towards noon the road dried up. Competitors were handicapped on trial run times, any competitor reducing his trial time by more than five per cent. being disqualified. This system proved most suitable, as some of the exciting finishes fully testified.

HEAT I.—D. C. Bolton ( $3\frac{1}{2}$  Rudge), bye; H. Russell ( $3\frac{1}{2}$  Bradbury), 4 $\frac{1}{2}$ s.; beat J. A. Marshman (Rudge); E. G. Linnell ( $3\frac{1}{2}$  Bradbury), 10s., beat E. S. Brittain (Triumph); E. Russell ( $3\frac{1}{2}$  Russell), 5s., beat A. F. Greeves (Triumph); C. Smith ( $2\frac{3}{4}$  Douglas) beat T. Newton (Triumph), 3 $\frac{1}{2}$ s.; G. G. Walkdon ( $3\frac{1}{2}$  Bradbury), 11s., beat F. Smith (Douglas).

HEAT II.—H. Russell, 16 $\frac{1}{2}$ s. start, beat D. C. Bolton; E. G. Linnell, 9s. start, beat E. Russell; C. Smith beat G. G. Walkdon 9 $\frac{1}{2}$ s.

FINAL FOR FIRST PLACE.—E. G. Linnell beat H. Russell.

FINAL FOR SECOND PLACE.—H. Russell beat C. Smith.

E. G. Linnell thus takes the silver goblet, and H. Russell a silver medal. Fastest time of the day was made by D. C. Bolton, riding his famous "red" Rudge, in 1m. 2s., so gaining a silver medal.

### Portsmouth and District M.C.

A paperchase was held on the 14th inst. Captain Tappen-den on his  $3\frac{1}{2}$  h.p. Premier and so. was the "hare," and had ten minutes' start, but was not caught, although the bounds were very close on him at the finish. The route was across Purbrook Common to Denmead, Hambledon, Catherington, to Horndean.

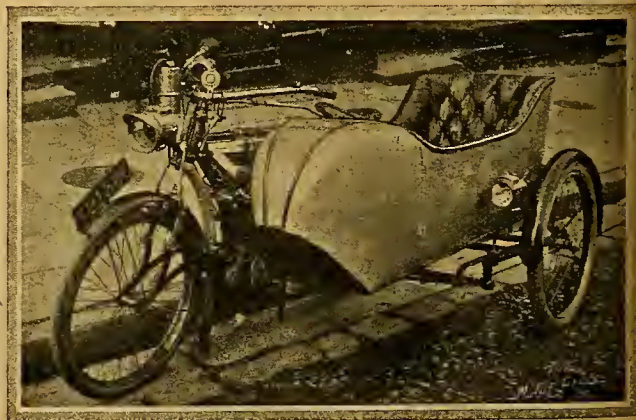
### Essex M.C.

A members' gala meeting was held on Brooklands Track on the 17th inst. Results:

Short Sidecar Race (about 5 $\frac{1}{2}$  miles): 1, D. S. Kapadia (3 Rex-Jap), scratch; 2, C. F. Michell (6 Bat), 8s. Speed, 40.77 m.p.h.

Short Motor Cycle Race (about 8 $\frac{1}{2}$  miles): 1, A. da Silveira (7 Indian), scratch; 2, J. H. Whitlark (6 Rex), 9s.; 3, J. A. Campbell ( $3\frac{1}{2}$  Rudge), 30s. Speed, 69.39 m.p.h.

Long Motor Cycle Race (about 13 $\frac{1}{2}$  miles): 1, J. H. Whitlark (6 Rex), 15s.; 2, J. A. Campbell ( $3\frac{1}{2}$  Rudge), 50s.; E. G. Brown ( $3\frac{1}{2}$  Triumph), 35s. Speed, 63 m.p.h.



A newly designed sidecar with sheet steel body called the Dukelet.





A.C.U. Trials. 1. Competitors passing through Porlock Village.

2. Scene on Byber's Hill. Note the loose surface.

**North London M.C.C.**

A club is being formed with the above title. Headquarters, 78, Turnpike Lane, Hornsey, N. Hon. secretary, E. E. Pickerdite, Ecclesbourne, Kelross Road, Highbury, N.

**Purley and District M.C.C.**

The results of the re-run flexibility hill-climb on the 10th inst. were as under (fast time divided into slow): 1, R. Charlesworth (6 Zenith), 4.52; 2, R. W. Gaskins (6 Rudge), 3.63; 3, P. Newbold (6 Zenith), 3.37. These subject to confirmation by the committee.

**Leeds M.C.C.**

The Leeds to London and back reliability run, held on the 20th and 21st ult., resulted as follows: 40 guineas trophy and gold medal, H. E. Haswell (3½ Bradbury); gold medals, Cockroft, Moore, Bullus, and F. K. Langton. The Billy Cup for best sidecar performance was won by Mr. and Mrs. Jenkins (3½ Triumph), both driving and qualifying for gold medals.

**Middlesbrough and District M.C.C.**

An "old crock" hill-climb was held on Saturday, the 10th inst., at Ormesby Bank. Nine riders competed, and Challenger was declared the winner. The next two events will be a paperchase and a sidecar trial.

**Westmorland M.C.C.**

A secret hill-climb was held last week on Towtop, Wither-slack. Result: 1, B. Jefferys (Bat); 2, L. S. Parker (Scott); 3, J. H. Nelson (Scott). Fastest time: L. Pierce (Corah). After the climb the competitors were kindly entertained to tea at the Derby Arms by Mr. S. Watson-Heatherburn, the donor of the challenge bowl.

**Liverpool A.C.C.**

The second open reliability trial will be held on Saturday, September 7th. The course will be a circular one in North Wales, and will pass the following places. Birkenhead, Hawarden, Bwlch Gwyn, Wrexham, Chirk, Llangollen, Llandegla, Corwen, Bala, Festiniog, Bettws-y-Coed, Llanrwst, Denbigh, Caerwys, Hoiywell, Northop, and Queen's Ferry. There will be several steep hills officially observed. The whole competition will be divided into classes. The principal award is the Reliance challenge cup, and gold, silver, and bronze medals in each class.

**The Motor Cycling Club.**

A members' hill-climb for motor cycles and cars will be held on September 7th.

CONDITIONS.—This hill-climb is intended to be a test of flexibility of the machine and clutches, or gears, if fitted, can be used. The hill will be divided into two sections. The first section to be covered at as slow a pace as possible. The road wheels of the machine must be brought to a standstill at the end of the first section, and the remaining portion of the hill must be covered at as fast a pace as possible from a standing start. The order of merit in all classes will be decided on the formula S - F, S equalling time for slow section, and F equalling time for fast section. No competitor will be allowed to assist his machine with his feet in the first section. Machines and sidecars must be standard touring types as usually sold to the public, fully equipped for the road.

CLASSES.—I., for motor cycles from 350 to 560 c.c. II., for motor cycles over 560 c.c. III., for motor cycles under 350 c.c. IV., for motor cycles with sidecar attached. V., for cars (which must be standard touring types) limited to 30 h.p. by R.A.C. rating.



One of the travelling marshalls in the A.C.U. Trials.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### The Silencer Tests.

Sir,—Reading your article on "Silencers" on August 8th, and being worried about the noise of my  $3\frac{1}{2}$  h.p. 1912 Humber, I have ordered a Dunlop Ejector silencer, 5in. diameter, 14in. long, to be placed in front of the engine, an elbow 2in. long to catch a 10in. long pipe  $\frac{1}{2}$ in. bore, which pipe will run and finish under the footboard. I expect this silencer shortly, and no doubt this will satisfy as to noise. I do not think the silencer put as I have described will disfigure the machine in any way, and if it reduces the noise by half or two-thirds I shall be very pleased. Thanks for your article.

C. DUPLESSY.

#### The Problem of the Automatic Carburetter.

Sir,—Regarding the articles on "Automatic Carburetters," allow me to state my experience with the J.A.P. automatic. I ride a 7 h.p. J.A.P. engine, and its carburetter will average 110 miles on one and a half gallons of petrol with sidecar, and I recently rode from Newcastle to London in thirteen hours. I have been using a J.A.P. a.o.i.v. engine five years and have never been stopped on the road with engine trouble nor had a valve break. I put it down to the automatic inlet valves, which allow the exhaust valves to keep comparatively cool at speed. Of course, I always keep my machine in tune, as I cannot afford to take chances on my long business journeys. I have taken your paper since its first number.

VICTOR TRAVERS.

#### Pillion Seats.

Sir,—In reply to your correspondent, "H.M.," in your issue of August 1st, I should like to express my opinion on the subject. I happen to be on a visit to the Homeland from Australia, and a few weeks ago, at the invitation of a friend, I went for a hundred miles spin as a passenger on a  $3\frac{1}{2}$  h.p. Triumph fitted with a Pantalía passenger seat and footrests. I may say I have travelled extensively by almost every form of conveyances, but never in all my experience have I had such an enjoyable run. It was simply perfection, and, in order to prove my statement, if "H.M." will communicate with me I shall be only too pleased to send the address of a person who will be prepared to give him the opportunity of testing same for himself, when he can form his own opinion of its safety and utility. I have no interest whatever in the trade. I simply read "H.M.'s" letter, and am writing, thinking perhaps that my experience will be of interest to him and motor cyclists in general.

W.R.

#### Inglorious Devon.

Sir,—I noticed in your columns various complaints of the Devonshire roads, and in no case do I think the complaints exaggerated. I myself am a constant user of the Devon roads, and I have found some of the main roads almost unrideable, having been cut up by heavy lorries. Surely some steps could be taken to limit the weight of these nuisances, as the damage which is being done will cost thousands of pounds to repair, and the district boards seem to be useless in this respect. Around Torrington and Barnstaple the roads seem to be in the worst condition, and in this district I have heard of several motorists breaking their car springs and literally having their motor cycles shaken to pieces. Another caution necessary for motor cyclists contemplating riding at night in Devon is to keep a very good look out for animals on the road, as sometimes in the early morning I have seen sheep lying asleep in the middle of the road, having strayed off neighbouring moors; these are a positive danger by night.

THE OLD SWINGROAT.

#### Waterproof Magnetos.

Sir,—We notice in your paper the report of the judges on the Scottish Six Days' Trial, and contained therein is a report on magnetos, and about which the judges state they "were particularly disappointed at the poor show given by magnetos, scarcely one of which was really rainproof in the correct sense of the word, and during the wet weather caused a great deal of difficulty to the competitors, especially in starting." We think that before judges should make such a sweeping statement they should have investigated every machine. We are of opinion that the much better plan is to put a magneto where it is not likely to be affected by rain, as it is rather a hopeless job to make a magneto waterproof in the strict sense of the word.

MOTOSACOCHE, LTD.,

O. DE LISSA, Managing Director.

Sir,—I observe with great satisfaction that the judges of the Scottish Trials in their very excellent report comment strongly on the failure of the so-called waterproof magnetos to justify its name. Speaking from a short experience of a twin-cylinder model, I say without hesitation, that it is by no means as waterproof as the older patterns. One puddle can generally be trusted to put the front cylinder of my machine out of action. When this occurs it is by no means easy to get it started again. The aluminium side plates are neat to look at, but, in my opinion, useless, as they only protect the condenser, which I have never known to be affected by wet.

JOHN KENNEDY, JUN.

#### Cattle Grazing on the Road side.

Sir,—Can nothing be done to lessen or remove the ever-recurring nuisance of cattle all over the road?

I and several friends have always been regularly hindered and inconvenienced with unexpected delays, and often difficult manoeuvring, in company with prejudiced and very indifferent treatment by the man or men in charge. The crowning point came quite recently. I was returning solo on my Premier from Pateley Bridge district to Leeds, having to be at business at the latter city at 9 a.m., and on this short run (twenty-eight miles) I was troubled no fewer than three times, in each case by an absolute block in the road.

As you know, cattle will invariably walk along in front for an almost interminable distance, however slow one crawls, rather than turn off for one to pass. And again, the noise of the engine, however "quiet," causes stampeding, so the usual alternative is—shoving, which is a caution when the scene of the encounter happens to be on a gradient of 1 in 8.

Upon the third stoppage I counted thirty cows standing all over the roadway and the grass at the sides, in charge of one man only. Getting into conversation with him, he told me they were not being driven anywhere, but were being grazed at the roadside. This licks creation, in my opinion, that a farmer should be permitted to use the public main roads for a playground for his cattle. Is it right?

I should like to say I am in no way prejudiced, as my father owns a farm, and we have several head of cattle of all kinds, so we are quite used to them, but believe in fair play to all road users if it can be managed. I should be very grateful if you would kindly help me to see what other motor cyclists think of the nuisance.

FRED J. MAISON.

[This practice, though illegal (except in a few isolated cases where the grazing rights at the roadside are owned by the Lord of the Manor) is, we fear, a very common one, and generally winked at by the authorities. We should advise our correspondent to lay the matter before the chief of police.—Ed.]



**Chain v. Belt Drive.**

Sir,—Mr. Maw's letter greatly interested me, since he links precisely as myself concerning the chain drive. Nearly every motor cycling friend tried to persuade me not to have a chain-driven machine for 1912. I am pleased to say that the chain transmission on my  $2\frac{1}{2}$  h.p. Enfield has not given me one moment's trouble in 3,000 miles, beyond getting up when new. I have seen motor cyclists telly with their belt drives who simply could not start their engine in this wet weather because their belts slipped, and others on the road with their engines racing as if they were in "free engine." The belt, to my mind, is not only a great nuisance, but highly inefficient. It would be interesting to know how long a belt would last fitted between engine and counter shaft, thus taking the place of the chain on the Enfield or Douglas. People, I think, could soon give it up in favour of the chain.

As regards comfort in riding with a chain drive, I am sure that if any rider of a belt-driven machine would try an Enfield, fitted as they are with slipping clutch on engine-raft and cush drive in rear wheel, and fitted with their excellent two-speed gear, he would hardly know that he was not riding a belt-driven machine. I personally would not dream of returning to a belt-driven machine.

I cannot say what a  $3\frac{1}{2}$  h.p. single-cylinder fitted with chain drive is like, but then I infinitely prefer a small twin  $2\frac{1}{2}$  h.p. to a single of  $3\frac{1}{2}$  h.p. It is interesting to note that the new Sunbeam motor cycle is fitted with chain drive.

K. CHARSLY.

**A Flag of Distress.**

Sir,—Referring to "Help's" letter in issue of 8th inst., some eighteen months ago, having been reluctantly compelled to request the loan of a pump (my own having given out) for a few moments from a cyclist the request was granted with such bad grace that I resolved never again to ask for it, even in so trifling a form, in the event of again being stranded. In the instance mentioned, not wishing to inconvenience anyone by stopping him, I had waited till morning up to an idly dismounted rider.

As the outcome of this experience, the idea occurred to me that, if subsequently in need of any assistance on the road, I would hoist on the offside handle-bar a red ensign with the "jack" downward, and then await the event of some good-natured rider who would see the inverted "jack" and come to my aid, while a surly one would not be hindered in his course.

However, as a result of the care and foresight bestowed on the building, my machine has never necessitated any repairs other than to adjust the belt and for three tyre repairs, and these little jobs I have, when possible, carried out in some convenient byroad, so as not to put the "gentlemen of the road" (who are sometimes found amongst car drivers as well as amongst motor cyclists) to the moral necessity of slowing to a quire if assistance be needed. Hence have so far had no occasion to put the flag idea into practice.

Sometimes, however, one merely stops to enjoy a pipe by the wayside, and at such times a green flag might be used to signify that all is well.

MELANZIE.

**Power for Sidecar Work and Petrol Consumption.**

Sir,—With reference to "Experto Crede's" letter in last week's issue, I have had the opportunity of making a comparison for six months between two 1912 standard machines, a  $3\frac{1}{2}$  h.p. Zenith and an 8 h.p. Zenith, both with Mills-Morford spring wheel sidecars. The sidecar on the 8 h.p. is somewhat heavier than that on the  $3\frac{1}{2}$  h.p.

The comparisons are interesting. (1.) The  $3\frac{1}{2}$  h.p. does 40 miles per gallon more than the 8 h.p., either solo or with sidecar (mileage per gallon with sidecar 65-70). (2.) The 8 h.p. wears out two Service belts to three of the  $3\frac{1}{2}$  h.p. (3.) The wear on back tyres is approximately the same on each. On the  $3\frac{1}{2}$  h.p. a 2½ in. Hutchinson lasted 2,700 miles. There is a 2½ in. Hutchinson on the 8 h.p. (4.) There is about ½ in. play in the main bearings of the  $3\frac{1}{2}$  h.p. (total mileage 3,700), and practically none on the 8 h.p. (total mileage 5,000). The  $3\frac{1}{2}$  h.p. must now, of course, be re-lashed.

The mileage of both machines includes an Easter tour in Wales, a summer holiday in South Devon, and various rides in and about Surrey, Hampshire, and Sussex, chiefly on the North Downs.

The  $3\frac{1}{2}$  h.p. has made a clean ascent of Reigate with driver and passenger weighing 22 stone; the 8 h.p. has made clean ascents of Whitdown and Peblecombe hills with driver and passenger of 23 stone in weight.

With regard to "Ixion's" wail about belt slip, I have found that the Service belt, running quite loose, grips in all weathers even on a very small pulley. A little Beltecum, which can easily be put on while running, stops any signs of slip.

After running a  $3\frac{1}{2}$  h.p. Zenith and sidecar for two years and a 5-6 h.p. F.N. two-speed four-cylinder for two previous years, I have come to the conclusion that, even with the Zenith gear, a 500 c.c. or under engine is not good enough for sidecar work. I do not say that the 500 c.c. is not a sidecar proposition, but for general riding, and touring more especially, an infinitely variable gear and a 700-1,000 c.c. engine is necessary.

I have no interest in the sale of the above goods; in fact, if I could afford it I should prefer a friction-driven cyclecar like the G.W.K. and a  $3\frac{1}{2}$  h.p. motor cycle for solo work; but for the man of moderate means the motor cycle and sidecar is the thing.

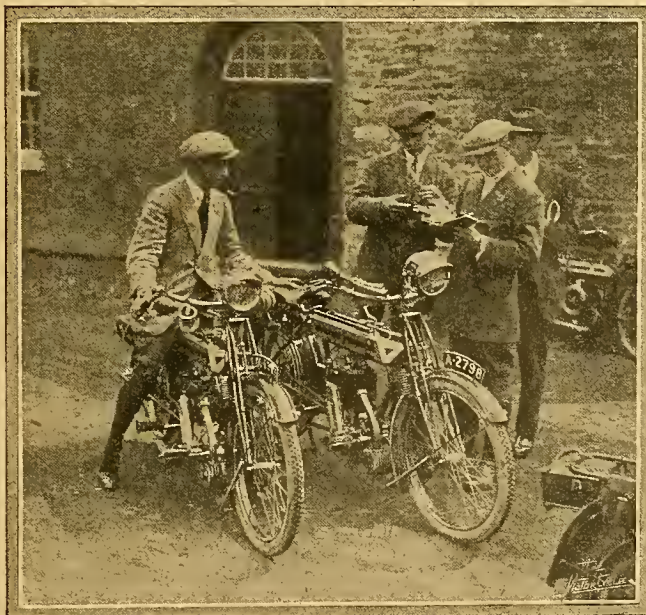
PHILIP S. WHITE.

**Dangerous Cross Roads.**

Sir,—Will you please permit me, through the columns of your valuable paper, to warn all motorists that use the main road between Epsom and Guildford of the many dangerous cross roads that exist between these points, as anyone, not traversing this road frequently cannot fully realise the danger that these cross roads contain.

There is one in particular that, I think, needs a more efficient danger signal than the usual red triangle, and that is where the road from Newland's Corner to Ripley crosses the main road from Epsom to Guildford at the top of West Clandon Village. There have been, to my knowledge, several accidents at this particular spot, and only recently it was the scene of a bad collision between two cars, which, I am pleased to say, was not attended with any fatal injuries, but was, I believe, the result of one person receiving a fractured jaw, to say nothing of placing both cars *hors-de-combat* for several hours. I am therefore prompted to ask you to publish this letter in the hope that it may come under the notice of one of the governing bodies, who, I feel sure, would erect a more prominent danger board in the vicinity, and thereby help to prevent a fatal accident at one of these corners. The hedges at this time of the year obstruct the view of the oncoming traffic until it is too late to avoid collision. This also applies to the cross roads at West Horsley, the scene of several spills.

H.C.

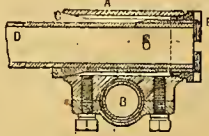


C. T. Newsome (left) and D. H. Noble (centre) who both rode  $3\frac{1}{2}$  h.p. Rovers in the A.C.U. Six Days' Trials.



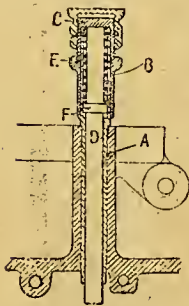
### A Sidecar Clip.

A hollow body A is adapted to be more or less permanently secured to the machine by means of the clip B. Within the body A lies a split tubular sleeve C, which is coned at one end and screwed at the other. The removable portion of the sidecar comprises a plain tube D. This is slid within the sleeve C, and upon the screwed end of the sleeve is then screwed a coned nut E. It is obvious that by tightening up this nut the sleeve C is contracted to hold the tube D firmly, and at the same time is itself firmly held by the coned portions within the body A.—F. W. Mead, No. 24,612, 1911.



### An Oil-retaining Tappet.

An ingenious feature of the 1912 Triumph engines is the adjustable spring valve tappet, which is so constructed as to prevent any oil exuding from the tappet guides. The guide A is extended, and fitting over it is a sieve B, which is provided with an adjustable head C. The tappet rod D acts upon the interior of the head of the sieve B so that the impact is inside, reducing noise, a spring E being arranged between the sleeve B and a shoulder F on the rod D so as always to keep the head



### 1913 Models.

The Norton Manufacturing Co., Ltd., intend to build for next year three models only—4½, 5½, and 2½ h.p. This firm's new address is Sampson Road North, Birmingham.

### Waterproof Suits.

In a letter to the East London Rubber Co., Ltd., Great Eastern Street, E.C., Harry Long, who has just completed a ride round the coast of Great Britain, says that he gave the Kerry waterproof suit a really good testing. For the first fortnight he had to face very hard rain every day and was not wet through once.

### Trade Notes.

Mr. H. Douglas Kerr has been appointed assistant manager of the tyre sales organisation of the North British Rubber Co., Ltd., Clincher House, 169, Great Portland Street, London, W. The gross profit in connection with the business of Bradbury and Co., Ltd., Oldham, the makers of the Bradbury motor cycles, for the year ended June 30th, is £19,189.

### The Demand for Motor Cycles in Natal.

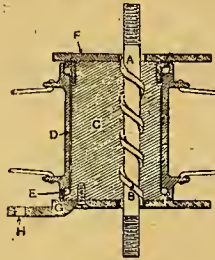
An idea of the demand for motor cycles in Natal may be gained from a picture in a recent issue of the *Durban Pictorial*. In this issue appears a photograph of a large consignment of motor cycles received by Messrs. Buttery and Hatton, Ltd., per s.s. *Briton*. All the machines were sold within nine hours.



pressed into contact with the valve stem and the rod D upon the cam rocker.—Triumph Cycle Co., Ltd., and E. L. Roberts, No. 20,214, 1911.

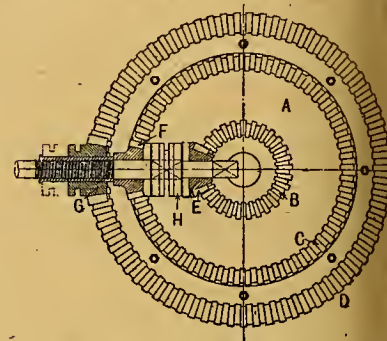
### A Belt Tensioning Device.

This device is adapted for use either with or without variable pulley mechanism. The usual fixed rear wheel spindle A is formed with a coarse thread B on which is eccentrically mounted a carrier C, which in turn supports the hub shell proper D upon ball bearings E. Secured to the carrier C are end plates F, G, the latter of which is formed with an extension H connected to mechanism whereby it may be operated to oscillate the carrier C about the spindle A, thus moving the actual centre of the wheel hub nearer to or farther from that of the engine pulley. When the device is used in conjunction with a variable pulley the correct belt line is maintained by means of the thread B, which moves the carrier C and wheel laterally to a slight extent as the carrier is moved to adjust the belt tension.—D. J. Thomas, No. 2,422, 1911.



### A Three-speed Gear.

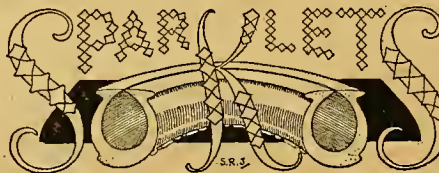
The driven member A of the gear is provided with three concentric rings of bevel teeth, B, C, D. On the driving shaft are mounted three bevel pinion E, F, G, adapted to engage the bevel rings B, C, D respectively. The pinion E and F are loose upon the shaft, but may be clutched thereto by a dog clutch member H sliding upon a non-circular part of the shaft. Thus either pinion



E or F may be the driver, the other remaining free. At this time the pinion G is slid out of engagement. When both pinions E and F are out of engagement the pinion G may be moved into mesh with the bevel ring D, providing the lowest gear. Two operating levers are necessary for the control of this gear.—C. Lurie, No. 11,862, 1911.

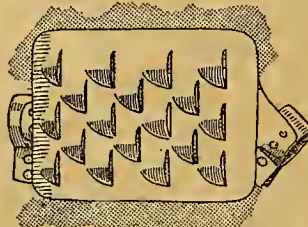
### NOTICE.

The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscripts, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed for the purpose.



### A Novel Trouser Guard.

A short time ago we published a photograph of a new front wheel mudguard designed to allow a draught of air to flow through it on to the cylinders and at the same time stop all mud. This guard is manufactured by the Coventry Auto Aero Co., of Priory Street,



Coventry. We are now able to illustrate another novelty made by the same firm. It consists of a metal plate in which a series of air scoops are stamped, and is made to clip on to the exhaust and inlet pipes, thus forming an effective trouser guard without interfering with the cooling of the valve pockets.

### 30,000 Miles with One Sidecar.

Mr. Frederick Horne, Addiscombe, the owner of a Mills-Fulford sidecar, has informed the makers that he has covered over 30,000 miles on his 1908 sidecar, which has been used with six different machines, and is still running satisfactorily, but fitted with a new body.

### Catalogues Received.

The booklet of the Leicester Rubber Co., Post Office Place, Leicester, describes and illustrates the John Bull motor cycle tyres and belts.

Many motor cyclists are enthusiastic photographers, therefore they will be interested to know that the Service Co., 292, High Holborn, W.C., issue a very complete photographic list containing illustrations and particulars of all the latest and best photographic cameras on the market.

The Bosch Magneto Co., Ltd., 40-42, Newman Street, Oxford Street, W., have sent us a booklet descriptive of the ZE1 magneto, the latest waterproof type, which is fitted to most of the single-cylinder motor bicycles manufactured this year. The book is exceedingly clear, and is accompanied by illustrations and a list of spare parts. Reference is also made to the latest type of Bosch plugs. Special emphasis is laid on the fact that this magneto requires very little lubrication, and that oil which may get on the platinum points causes these to burn more rapidly.



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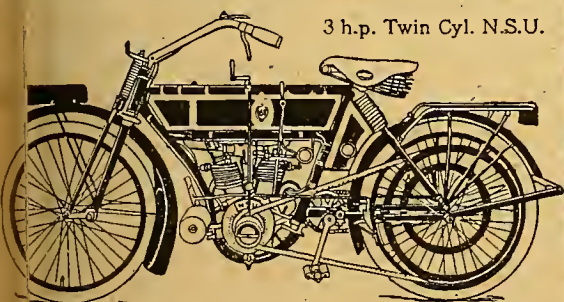
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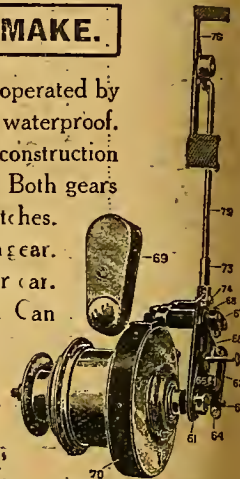
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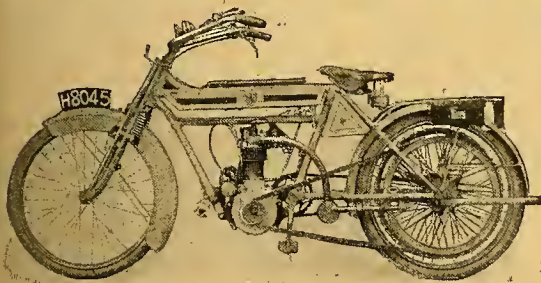
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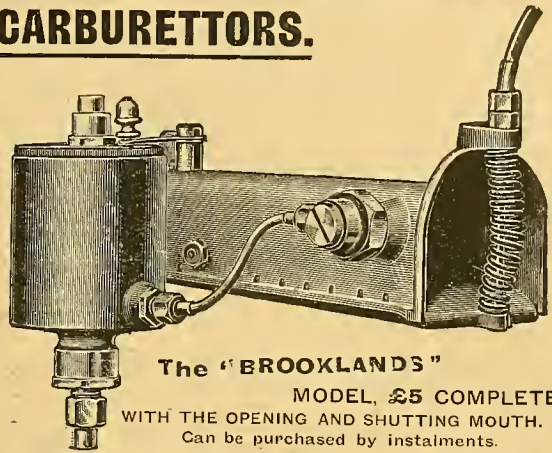
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Although I specially cater for the ordinary tourist and every-day rider who loves **slow, quiet** pulling, an instant start, great flexibility and speed, and a tick round when in traffic or with clutch out, things he cannot get with single jet carburettors, and which he does get with the

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Mr. Clark on a 3½ h.p. Corah, using this Carburettor at the Warwick Hill-climb, made fastest time, actually tying in speed with an 8 h.p. overhead Jap.

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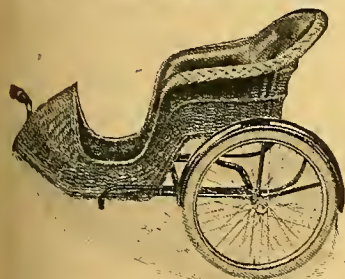


# CORONET SIDE CARS

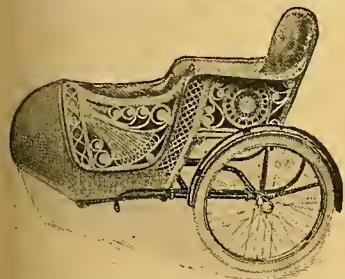
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Fit a "Coronet," the lightest and strongest, 3½ h.p. machines pull them splendidly. Why overwork your engine with a heavy sidecar?

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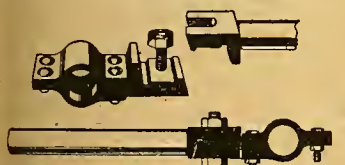


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**DOUGLAS-WILLIAMSON,** 8th p., rare model, on show and for sale.—Colmore Depot, 18, Renshaw St., Liverpool.

**CHATER-LEA.**—Official agents, Colmore, 18, Renshaw St., Liverpool.

**MACBETH-PRECISION,** exactly the same as won gold medal in Scottish trials, climbed every hill, no mechanical trouble, splendid result, built to order, get details: 3-speed model £58; instalments or exchanges arranged; discount to the trade.—Agents, Colmore Depot, 18, Renshaw St., Liverpool.

**CLYNO:** immediate delivery.—Colmore Depot, 18, Renshaw St., Liverpool. [X1164]

FOR Prompt Delivery:

6 h.p. Royal Enfield, 2-speed, and sidecar; £84.

3½ h.p. Humber, 2-speed; £52/10.

3½ h.p. N.S.U., 2-speed; £53/15.

2½ h.p. Royal Enfield, 2-speed, slightly soiled; £45.

2 h.p. Humber; £35.

3 h.p. N.S.U. Twin, 2-speed, used for demonstration purposes only, good as new; was £49, now £43.

**W. HARRISON and Co.,** 73, Bold St., Liverpool. [X1118]

**TRIUMPH,** every model in stock; immediate delivery.—Timberlake's, Wigan. [X1014]

**NEW Hudsons,** every model in stock; immediate delivery.—Timberlake's, Wigan. [X1015]

**TIMBERLAKE'S,** Wigan, have a number of shop-soiled and 2nd-hand machines to be cleared cheap, offers wanted; write or 'phone for particulars. [X1016]

1912 Rudge, free engine, shop-soiled; £49 to clear.—Timberlake's, Wigan. [X1017]

1912 3½ h.p. Premier Twin, 2 speeds, Dunlops, cut-down frame, shop-soiled; £55 to clear.—Timberlake, Wigan. [X1018]

**TIMBERLAKE'S,** Wigan, have a number of shop-soiled and 2nd-hand machines to be cleared cheap, offers wanted; write or 'phone for particulars. [X1166]

**ENFIELD Lightweight,** 2½ h.p., 2-speed, finished grey, shop-soiled; £46 to clear.—Timberlake, Wigan. [X1020]

1912 Humber, 3½ h.p., 2-speed, soiled, run 5 miles; £46 to clear.—Timberlake, Wigan. [X1021]

**TIMBERLAKE'S,** Wigan, have a number of shop-soiled and 2nd-hand machines to be cleared cheap, offers wanted; write or 'phone for particulars. [X1167]

1912 Premier, T.T., very fast, specially tuned engine, ridden one climb; £40.—Timberlake, Wigan. [X1022]

1912 2½ h.p. New Hudson 3-speed Lightweight, shop-soiled; £44/10.—Timberlake, Wigan. [X1023]

1912 Enfield Lightweight, 2-speed, enamelled grey, almost unsoiled, ridden 300 miles, enamelling and plating perfect; £36.—Timberlake, Wigan. [X1024]

**TIMBERLAKE'S,** Wigan, have a number of shop-soiled and 2nd-hand machines to be cleared cheap, offers wanted; write or 'phone for particulars. [X1168]

**WANTED** to buy, Scott, brand new; state best trade terms.—Hitchens, Ltd., Morecambe. [4016]

3½ h.p., 2-speed P. and M., perfect; best offer; going abroad.—155, Woodbine St., Salford. [X825]

**DOUGLAS and Williamson** motors in stock.—Sole Manchester agent, Gourlay, Fallowfield. [X8798]

1912 Rudge, free engine, new, not been ridden; accept £45.—Watson, 35, Oxford St., Manchester. [4200]

**B.S.A.,** 1911, like new, not done 1,000; trial any time; £35 or offer.—48, Church Rd., St. Anne's-on-Sea. [4265]

1912 Torpedo, 3½ h.p., free engine, almost new; cost £50, real bargain, £27.—Cooke's, Longsight, Manchester. [X130]

**HUMBER** Lightweight, 2½ h.p., not done 700, splendid condition; bargain, £25.—Jowsey, Swallowhead, Sheffield. [X926]

50/- Motor Cycles; about half a dozen left. If you want one write for list.—Hitchens, Ltd., Morecambe. [5687]

1912 6 h.p. Matchless with 2 speeds, free engine, in stock, £69/6; 5-h.p. Clyno, £65, new.—Cross, agent, Rotherham. [X1116]

1911 2-speed Douglas, £33/10; 1911 single gear Douglas, £31; 1912 B.S.A., 2-speed model, done 1,000 miles, £48.—Cross, agent, Rotherham. [X1116]

**List Price £47 10s.**  
**Our Price £36 10s.**

**Saved - £11 0s.**

We offer a High-grade Machine, namely, a **BRAND NEW**

**1911½ 3½ h.p. PREMIER**  
at a **REDUCTION** of £11.

Fitted with all improvements. Fully guaranteed. Delivery from stock.

**FOR £10 EXTRA**

we can supply above machine fitted with **Armstrong or Sturmey-Archer 3-speed gear.** Just the thing for Sidecar work.

<b>CLYNO,</b> 1912, only run 200 miles	£57 10
<b>HUMBER,</b> 1911, 3½ h.p., 2 speeds, handle starting, and Millford sidecar	£40 0
<b>PREMIER,</b> 3½ h.p., 1911 model	£30 0
<b>N.S.U.,</b> 6 h.p., 1910, 2-speed, and new sidecar	£38 10
<b>N.S.U.,</b> 3½ h.p., 1908, magneto, 26in. wheels	£13 10
<b>REX,</b> 3½ h.p., 1908, spring forks, magneto	£16 10
<b>Twin DOT,</b> 7-9 h.p., 2-speed, handle starting, with sidecar	£36 10
<b>CLYNO,</b> New, 1912 model. In stock	£68 5
<b>VINDEC,</b> 5 h.p., 1910, 2-speed	£35 0
<b>REX,</b> twin, 1910, Speed King	£20 0
<b>REX DE LUXE,</b> 5 h.p., twin, 1911, M.O.V., with £12 12s. Rex sidecar	£47 10
<b>REX,</b> 3½ h.p., vertical engine, magneto	£8 10
<b>BRADBURY,</b> 1910, 3½ h.p.	£20 0
<b>HUMBER,</b> 1910, 2-speed gear	£29 10
<b>GAROLEA</b> 5 h.p. Tricar, P. and M. gear	£10 10
<b>ENFIELD</b> Lightweight, 1910	£18 10
<b>QUADRANT,</b> 3½ h.p., magneto, spring forks	£16 10
<b>DAVIS DOUBLE,</b> 1911, 6 h.p. J.A.P. 2-speed gear; cost £94	£24 10
<b>DARRACQ</b> 9 h.p. 2-seater Car, 3 speeds and reverse	£15 10
3 h.p. <b>CLYDE,</b> M.O.V. magneto	£8 10
<b>WOLF</b> Lightweight, 1910	£10 0
<b>QUADRANT,</b> 3 h.p., vertical engine	£5 10
<b>HUMBER</b> Tricar, open frame, wheel steering, water-cooled	£15 0
<b>REX DE LUXE,</b> 7 h.p., 1911, 2-speed	£40 0
<b>CLYNO,</b> 1912, run 300 miles	£52 10

PUSH CYCLES TAKEN IN EXCHANGE.

### ENGINES.

6 h.p. <b>Twin ANTOINE,</b> adjustable pulley	£6 0
3½ h.p. <b>MINERVA,</b> with Fital 2-speed	£6 0
2½ h.p. <b>MINERVA,</b> M.O.V.	£2 10
3 h.p. <b>QUADRANT</b>	£1 10
2½ h.p. <b>DE DION,</b> 30/-; 1½ h.p. <b>MINERVA,</b> 30/-	

### GREAT CLEARANCE LINE.

26 x 2½ Pedley Covers, fit 2½ in. rims	32/6
26 x 2½ Heavy Rubber-studded Covers	26/-
24 x 2 and 2½ Beaded Clipper Covers, New	8/6
26 x 2½ Tubes, best make	6/11

### 4½ h.p. PRECISION ENGINES.

We will make a good allowance or your old engine in part payment for one of the above up-to-date powerful engines.

### MISCELLANEOUS.

<b>WANTED.</b> —XL All Spring Forks.	
New 1912 B. and B. Carburettor	23/6
50 12in. Horus	2/11
Mabon Clutch, fit twin Peugeot	35/-
Nearly new 1912 Sensapray	23/6
Bradbury Pattern Handle-bars	6/6
Lowen Sidecar; cost £14	£5
Werner and Humber Carburettors	2/6
Long Handle-bars, dropped ends	5/6 and 6/6
Coronet Silencers, up to 5 h.p.	3/3 and 4/6
Fital 2-speed, fit 3½ h.p. Minerva	£3 5
Wide Mudguards, 4in.	pair 2/11
B. & B. and Amac, h.b. control	13/6
New Amac Carburettor, h.b. control	18/6
Montgomery Castor Wheel Sidecar	£6 10
Mills-Fulford Sidecar	£3 15
Tubular Carriers, with drop ends	4/6
New Mirror Lens Lamp, with generator	12/6
Sidecar Lamps, show red behind	6/9

**Booth's Motories,**

Keighley Mills, Bedford Street North, Halifax.

Telephone 1062.



# 1913

We are now booking orders for 1913 models of the better known makes, notably

**DOUGLAS'S  
SCOTTS  
A.C. SOCIABLES  
REXES  
RUDGES  
Etc., Etc.**

We are open to take your present 1911 or 1912 model now in part payment, and deliver the 1913 model at any reasonable required date after the show.

Further, we are pleased if required to make any reasonable cash advance upon your present machine, pending delivery of the new model.

# 1912

We have a number of second-hand and soiled 1912 models to clear. Ask for particulars.

**No extra for deferred payments on makers' 1912 catalogue price.**

All Machines Guaranteed.

**IMMEDIATE DELIVERIES.**

# 1911

Special offer of a few 1911 Rexes with 1912 magnetos, gear, footboards, carburetter, belt, tyres, etc., etc.

All Guaranteed.

Maker's price .. .. **60 Gns.**

Our price .. .. **51 Gns.**

**Deferred payments.**

**£54, payable £14 with order**

—and—

**12 monthly payments of £3 6 8.**

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## MOTOR BICYCLES FOR SALE.

**RUDGE, 1911, good condition, engine re-bushed, very fast; £32/10; deferred or cash terms.—Hitchens, Ltd., Morecambe. [4001]**

**BAT, 1911, with P. and M. 2-speed gear, perfect condition; £36; cash, or deferred.—Hitchens, Ltd., Morecambe. [4002]**

**HUMBER, 1909, 2-speed, good order, with sidecar; £30; cash, or deferred.—Hitchens, Ltd., Morecambe. [4003]**

**DOT, 5-h.p., B. and B. carburetter, first-class condition, wants new crank case side, mag. ignition; dirt cheap, £9, no swaps or deferred.—Hitchens, Ltd., Morecambe. [4004]**

**GRITZNER, 3-h.p., Bosch mag., F.E., B. and B. carburetter, good tyres, enamel and plating first-class; £15/10 cash or deferred.—Hitchens, Ltd., Morecambe. [4005]**

**KERRY, 2½-h.p., a.i.v., B. and B. carburetter, Bosch mag., good tyres, belt, footrests; £13/10, cash or deferred.—Hitchens, Ltd., Morecambe. [4006]**

**MOTOSACOCHE, 1910, F.E., nice condition throughout, Druid spring forks, var. pulley; £16, cash or deferred.—Hitchens, Ltd., Morecambe. [4013]**

**N.S.U., 3-h.p., m.o.v., B. and B. carburetter, magneto, tyres good order, footrests, stands, pedals; £13/10, cash or deferred.—Hitchens, Ltd., Morecambe. [4007]**

**REX, 3½-h.p., m.o.v., Longuemare carburetter, Bosch mag., good tyres, spring forks, 2 brakes, plating good; £17/10 cash, or deferred.—Hitchens, Ltd., Morecambe. [4008]**

**BRAITHWAITE, 3½-h.p., Fafnir engine, a.i.v., B. and B. carburetter, 2 brakes, UKantes stands, mag., in going order; £12/10 cash, or deferred.—Hitchens, Ltd., Morecambe. [4014]**

**N.S.U., with 2 speeds, good motor cycle, for sidecar work; deferred terms, £16; cash offers wanted.—Hitchens, Morecambe. [4009]**

**TO the Knuts.—Don't be silly and offer us 10/- down and 1/- a week for any of these machines. If you want to buy a good mag. machine for cash, make us an offer. We want to sell, and will answer all letters referring to same per return. If the above prices are too much for you, send for list. We have some in stock as low as 35/-.—Hitchens, Ltd., Morecambe. [4015]**

**MANCHESTER.—1911 F.E. 3½-h.p. Bradbury, excellent condition; £36, offers wanted.—Rigby, Rosbank, Prestwich. [X47]**

**1912 T.T. Arno Motor Cycle, lamp, horn, Cowey, watch, tools; £30.—Clare, Mosley Common, Boothtown. [X929]**

**1912 New Hudson, 3-speed, 2½-h.p., only ridden 20 miles; £41; approval willingly.—13, Chester St., Middlesbrough. [X1001]**

**HEBDEN'S Great Clearance Sale.—Must be cleared previous to alterations. Send at once to secure the bargains.**

**1912 New Machines.—Free engine Triumphs, T.T. Roadster Triumphs, Rudge's free engine and multi-speed models.**

**JAMES 2-speed and Canoelet Sidecars; list £73/3, sale price £65.**

**NEW Hudsons, 3-speed and Jap. engine; list £59/17, sale £53.**

**HUMBER, 2-speed, F.E., and canoelet sidecar; list £65/2, sale £59/10.**

**2½-h.p. Premier, 3-speed, and free engine; list £246/10, sale £37/10.**

**DOUGLAS, all models in stock.**

**EXCEPTIONAL Bargains in up-to-date 2nd-hand Machines, all mag., including Triumphs, Ridges, Rexes, Moto-Reves, Douglas, Enfields, etc., etc., from £10.—Write us your requirements. We must clear.**

**5-h.p. Vindec, free engine, and wicker sidecar, ready for the road, worth £30; to clear, £25.**

**1912 Free Engine Rudge, guaranteed not run more than 250 miles; only £47.**

**5-h.p. Rex and Sidecar, 2-speed and F.E., honestly worth £35; first cheque £23.**

**3½-h.p. Humber, 2-speed and F.E., fit up complete, 32 a beauty, worth £45; our price, £35.**

**NEW 8-h.p. Williamson-Douglas, 1913 model, water-cooled, 2-speed, and free engine, the practical sidecar machine of the future, with special canoelet sidecar; £95/13, delivery 7 days.**

**WRITE, Call, or Phone your wants; we are sure we can suit you.—Hebden's Motor Mart, St. James St., Burnley. Tel.: 488. [4313]**

**1910 Rex, 5-h.p., Mabon clutch, suitable for sidecar, in perfect condition; £32.—Jos. Entwistle, 322, Manchester Rd., Bolton. [X1070]**

**3-h.p. Fafnir, extra condition every way, splendid climber; write for particulars; £11/15.—Hamer, Beechwood, Hebden Bridge. [X930]**

**P. and M. light model, Bosch mag., 2-speed, free engine, spring forks, B. and B. carburetter; £18 cash.—Hempel, Coru Mill, Bingley. [3724]**

**2½-h.p. F.N., December, 1911, 2-speed and free, perfect condition, excellent tyres; £35.—Reynolds, 32, Downing St., Manchester. [X1105]**

**1906 Twin Rex, mag., clutch, spring forks, new enamelled and plated; £13/10.—Bannister, Ivory St., Leathley Rd., Hunslet, Leeds. [X1100]**

# IF YOU WISH

## FOR THE BEST REMEMBER MAUDES'.

Always dependable. New or Second-hand  
All guaranteed. Call and inspect.  
—Exchanges or Deferred Payments.—

**RUDGE MULTI, 3½ h.p., 1912, new.... £60**

**RUDGE CLUTCH, 3½ h.p., 1912, new .. £50**

**REX SIDETTE, 6 h.p., 1912, new..... £70**

**REX DE LUXE, 6 h.p., 1912, new .. £62 10**

**ARIEL, 3½ h.p., 3-speed, new..... £50**

**REX SIDETTE, 1912 model, as new... £52 10**

**REX DE LUXE, 1912 model, perfect.. £46 10**

**PREMIER, 3½ h.p., 1912, 3-speed.... £40**

**PREMIER, 3½ h.p., 1910 model .... £30**

**RUDGE, 3½ h.p., 1911 T.T. model .... £30**

**ARIEL, 2½ h.p., ideal lightweight ..... £10**

**P. & M., 3½ h.p., 1909, 2-speeds, lovely order ..... £30**

**DOUGLAS, 2½ h.p., 1911 model .... £30**

**T.A.C., 7-8 h.p., 1910 model ..... £40**

**INDIAN, 7-9 h.p., 1911, 2-speed ..... £50**

**P. & M., 3½ h.p., 1911 model ..... £50**

**SCOTT, 3½ h.p., 1910 model ..... £30**

**F.N., 4½ h.p., 4-cylinder ..... £20**

**A.J.S., 3 h.p., twin, just overhauled .... £20**

**V.S., 5 h.p., free engine, magneto..... £20**

**F.N., 2½ h.p., 1910, tricycle, 2-speeds .... £30**

**REX, 5 h.p., tourist model..... £20**

**MINERVA, 4½ h.p., spring forks .... £10**

**ANTOINE, 5-6 h.p., twin, low built .. £10**

**PHENIX, 8 h.p., car, 2-seater ..... £20**

**ANGLIAN, 2 h.p., lightweight ..... £10**

**ANTOINE, 4 h.p., clutch model..... £10**

**IMPERIA, 2 h.p., handle-bar control .... £10**

**EXCELSIOR, 3 h.p., tricar, 2-speeds .. £10**

**MOTO-REVE, 2 h.p., twin, 1910 .. £10**

**MOTO-REVE, 2 h.p., Druid forks .. £10**

**F.N., 2½ h.p., 1911 model, 2-speeds ..... £10**

**MINERVA, 2½ h.p., mag., French grey .. £10**

**RUDGE, 3½ h.p., 1912, Multi, as new .. £10**

## SPECIAL LINE.

**Shamrock-Gloria Clearance Bolts** half maker's list prices. Send for a length approval. Money returned if not satisfactory. 4 in. 8d.; 3 in. 10d.; 2 in. 1/-; 1 in. 1/2 per foot

**MAUDES MOTOR MART  
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# SCOTT'S

Victoria Motor House, Powell St., Halifax.

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

## CLEARANCE SALE!

- One Multi Rudge in stock. First cheque secures. **PRICE £60.**
- JUDGE** 2-speed and free-engine and adjustable pulley; engine starts with the back-wheel on the ground. .... **£56 10**
- RUDGE** free-engine model. .... **£55 0**
- RUDGE** standard. .... **£48 15**
- RUDGE** T.T. .... **£48 15**
- ROYAL ENFIELDS**, 1912, any model. .... **£55 0**
- SCOTT**, 1912, new, first cheque for **£66** secures
- ZENITH-GRADUA**, new, 3½ h.p. .... **£55 0**
- REMIER**, 1912, new, Sturmer-Archer 3-speed gear, starts with wheel on the ground. .... **£55 0**
- LYNO**, like new, complete with 12-guinea sidcar. .... **£55 0**
- & M.** (late 1910), just been re-camelled and plated, also overhauled by makers, complete with Mills-Fulford sidcar. .... **£41 0**
- NEW HUDSON** Lightweight, 2½ h.p. Tap, like new, 3-speed gear, a bargain
- REMIER**, 1912, like new 3½ h.p. .... **£33 0**
- JUDGE** Standard 1912, 3½ h.p. .... **£38 0**
- REMIER**, 3½ h.p., 1912, complete with sidcar, 3 speeds. .... **£55 0**
- EW HUDSON**, 3½ h.p., 1912, not done 300 miles, 3 speeds. .... **£46 10**
- UMBER**, 3½ h.p., 2-speed and free engine, take a sidcar. .... **£39 0**
- & M.**, 3½ h.p. (late 1909), complete with 9-guinea, like new. .... **£36 0**
- EX**, 5 h.p., 1910½, with 1911 improvements, not done 1,000 miles. .... **£34 0**
- EX**, 1910, 5-6 h.p., 2-speed, and free engine, complete with sidcar. .... **£36 0**
- AMPHION**, 3½ h.p., 1911. .... **£27 0**
- N.** Lightweight, 1911-12, shaft drive, shop-soiled, complete with £10 worth of spares. .... **£58 0**
- N.**, 5-6 h.p., fitted with 2-speed gear and free engine at a cost of over £80, a bargain. .... **£38 0**
- OTO-REVE**, 1911, 3-speed Armstrong, gem, shop-soiled. .... **£29 0**
- EX**, 3½ h.p., n.b.c., magneto ignition, spring forks, 1908. .... **£16 10**
- INERVA**, 3½ h.p., h.b.c., magneto ignition, spring forks. .... **£15 0**

We beg to advise all readers that Messrs. Scott's, of 20, Powell St., or Victoria Motor House, Halifax, have no connection whatever with Messrs. Maudes' Motor Mart of London.

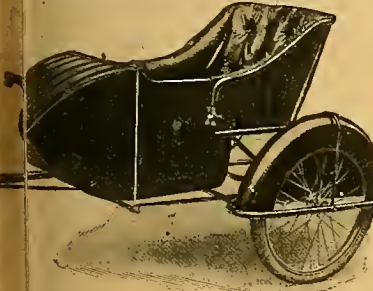
50/- down and 5/- per week secures the following:

finir, 2½ h.p., h.b.c. .... **£8 10**

adant, 2½ h.p., spring forks. .... **£8 0**

Motor Cycles, Kerry and Lloyd's, want slight repairs. .... **£5 0**

Guinea Sidcar, second-hand. .... **£4 4**



As Illustrated, **10 GUINEAS.**  
Write for Sidcar Catalogues.  
We claim to have the finest and strongest Sidecar on the market. No fear of wheel dropping off.  
**WATFORD SPEEDOMETER**  
All models. Liberal allowances made on old ones.

Forests, post paid. .... **2/10**

**SCOTT**, Victoria Motor House, Powell Street, HALIFAX.  
Telephone—433 National.  
Telegram—“SCOTT, Powell Street, Halifax.”

## MOTOR BICYCLES FOR SALE.

- IN** Stock, B.S.A., 2-speed, £60; Rover, free engine, £55; Humber, 2½ h.p. twin, £42; Champion-Jap, 4 h.p., £40; exchanges entertained; several 2nd-hands.—Champion, London Rd., Derby. [3545]
- INDIAN**, royal blue brand new machine, 7-9 h.p., 2 speeds, free engine, with 28x2. Hutchinson heavy studded tyres, Canalet, 213/13 model (royal blue), to match; cost £89/5; with many spares; reasonable offer accepted, together or separate.—Cutler, Cherry Orchard, Old Hill, Staffs. [X957]
- 1912** 2½ h.p. 3-speed Humber, hardly used, first-class condition, £38. 1911 Bradbury, condition as new, very powerful, £32/10; 8 h.p. Zenith, new, ideal for sidcar, 69 gns.; F.E. Rover, shop-soiled, £50; 6 h.p. Clyno and sidcar, latest model, new, £85; exchanges entertained.—H. J. Marston, New Chester Rd., Rock Ferry. [X884]

## SECTION IV.

- Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.
- BIRMINGHAM.**
- SPECIAL** Sale of new and 2nd-hands.
- DOUGLAS**—Big stock, ordered before the Douglas boom.—Colmore, 27, Colmore Row, Birmingham.
- DOUGLAS-WILLIAMSON**, 8 h.p., rare model, on show and for sale.—Colmore, 27, Colmore Row, Birmingham.
- PREMIER**, 3 h.p., new, first-class machine, every part 1912 except engine, late 1911 pattern; best offer £36 to £40.—Colmore, 27, Colmore Row, Birmingham.
- P.** and **M.** coming, order now.—Colmore, 27, Colmore Row, Birmingham.
- SCOTT**—Only official agents, Colmore, 27, Colmore Row, Birmingham.
- ENFIELD** Sidcar Combination, coach-built car; trial given; immediate delivery.—Colmore, 27, Colmore Row, Birmingham.
- MATCHLESS**, 6 h.p., 2-speed, magnificent machine; change your 3½ h.p. for this.—Colmore, 27, Colmore Row, Birmingham.
- TRIUMPH**, free engines and standards in stock.—Colmore, 27, Colmore Row, Birmingham.
- CHATER-LEA**—Official agents, Colmore, 27, Colmore Row, Birmingham.
- MACBETH-PRECISION**, exactly the same as won gold medal in Scottish trials, climbed every hill, no mechanical trouble, splendid result, built to order, get details; 3-speed model, £58; instruments or exchanges arranged; discount to the trade.—Agents, Colmore, 27, Colmore Row, Birmingham.
- SINGER**, T.T., 2½ h.p., 1912, hardly used; £30.—27, Colmore Row, Birmingham.
- ZENITH**, 3½ h.p., 1911, powerful machine; £39.—27, Colmore Row, Birmingham. [X1163]
- 1911** Free Engine Triumph; £35.—Hodgson, Rock House, Louth, Lincolnshire. [4182]
- 1912** T.T. Rudge, a real flier; owner buying car; £39, or offer.—Jim Ireland, Atherstone. [X877]
- 3 h.p.** Quadrant, in good running order, tyres nearly new.—E. Futer, Scitthorpe, Bourne. [X1135]
- RUDGE**, 2-speed, September, 1911, good condition; offer.—Hayward and Ball, Stratford-on-Avon [4090]
- REX** de Luxe, 1911, 6 h.p., 2 speeds, perfect condition; £45.—Kendall, Post Office Place, Leicester. [X879]
- 1910** Triumph, in splendid order and condition, complete; £32.—Perkins, Friars Rd., Coventry. [X1162]
- TRIUMPH**, late 1911, free engine, fine condition; £39, or offers.—Nowers, juv., Tinwell, Stamford. [4189]
- BRADBURY**, good order, all spares; trial given; quick sale, £25.—Launcebury, Granville St., Boston. [4176]
- 1911** Bradbury, 3½ h.p., perfect condition, lamp, horn, small spares; £29.—79, Middleborough Rd., Coventry. [X915]
- 1910** Enfield Lightweight, twin-cyl., very little used, complete; £25.—Johnstone, Friars Rd., Coventry. [X1161]
- TRUMP-J.A.P.**, 1912, 4 h.p. free engine, nearly new; £42.—Trump Motors, Ltd., 36, John Bright St., Birmingham. [X1188]
- 1912** F.E. Triumph, 1912 Bradbury 2-speed, shop-soiled, £50 each; 7 gns. sidcar, new, £5.—Clifford's Motories, Eastwood, Notts. [X1054]
- TRIUMPH**, 1909, just overhauled, first-class condition; nearest £27; going abroad.—Henry, 182, Bristol Rd., Birmingham. [X1002]
- 1911** Humber 3½ h.p. 2-speed Motor Cycle and sidcar, nearly new, very reliable; £43.—6, Heath Green Rd., Birmingham. [X1032]
- LADY'S** 2 h.p. Clyde, as new; sell £30, or exchange for goods, cash adjustment either way.—Heugh, Pennard, Birstall, Leicester. [4298]
- TRIUMPH**, latest clutch model, just delivered (new), will accept Douglas or other good make in part payment.—Midland Cycle Depot, Hales St., Coventry. [X996]

## Collier's Motories,

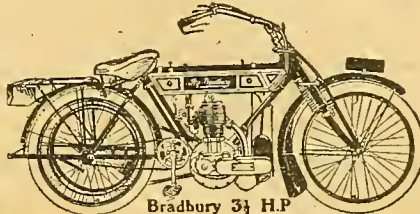
Westgate, Halifax, England.

## 1912 BRADBURY'S.

### THE IDEAL SIDECAR MACHINES.

The greatest power in single-cylinder machines, giving maximum efficiency and freedom from attention.

3½ h.p., tourist	£48	3½ h.p., 2-sp., chain	£58 10
3½ h.p., 2-speed, belt	£55	3½ h.p., 3-speed	£58 10



Exchanges Quoted. Distance no objection.

### GUARANTEED MACHINES.

#### CASH, EXCHANGE, OR EASY PAYMENTS.

- |   |         |
|---|---------|
| 1912 Twin 2-speed CLYNO, NEW                  | £68 5   |
| 1912 4 h.p. Tourist REX, 8 1/2 x 9 1/2, NEW   | £46 0   |
| 1912 4 h.p. 2-speed REX DE LUXE, NEW          | £56 0   |
| 1912 3½ h.p. HUMBER, 2-speed, NEW             | £47 10  |
| 1912 GRANDEX-PRECISION, almost as new         | £29 10  |
| 1911 3½ h.p. 2-speed REX DE LUXE, NEW         | £48 6   |
| 3½ h.p. Magneto PREMIER, fine machine         | £25 0   |
| 1912 2½ h.p. 2-speed REX junior, as new       | £29 10  |
| 2½ h.p. Torpedo PRECISION                     | £27 10  |
| 1911 5 h.p. Clutch INDIAN, splendid condition | £39 10  |
| 1911 2-speed SCOTT                            | £34 10  |
| 6 h.p. Twin ANTOINE, magneto, spring forks    | £23 10  |
| 1911 Twin 2-speed REX DE LUXE, new            | £55 10  |
| 1911 3½ h.p. Tourist REX, new and unused      | 34 Gns. |
| 5 h.p. 2-speed Twin ROC, Druids               | £29 10  |
| 1911 3½ h.p. 2-speed N.S.U.                   | £32 10  |
| 2½ h.p. KERRY, runs well                      | £8 10   |
| 2½ h.p. Magneto BRADBURY                      | £18 10  |
| 1911 3½ h.p. Tourist REX, very reliable       | £32 10  |
| 5 h.p. 2-speed Twin REX DE LUXE, and Sidcar   | £37 10  |
| 5½ h.p. 2-speed N.S.U., h.-b. control         | £26 10  |
| 2½ h.p. 2-speed MINERVA                       | £18 12  |
| 4 h.p. 2-speed Twin REX, spring forks         | £24 10  |

### £3 deposit and 5/- weekly secures:

- |                                  |        |
|----------------------------------|--------|
| 3½ h.p. MINERVA                  | £13 15 |
| 2½ h.p. BAT, spring frame        | £10 10 |
| 3 h.p. QUADRANT                  | £7 10  |
| 2½ h.p. KERRY                    | £8 10  |
| 3 h.p. KYNPIC                    | £8 10  |
| 3 h.p. OLDFIELD                  | £10 0  |
| 2 h.p. WERNER, lightweight       | £6 10  |
| 2½ h.p. JESMOND, vertical engine | £8 10  |

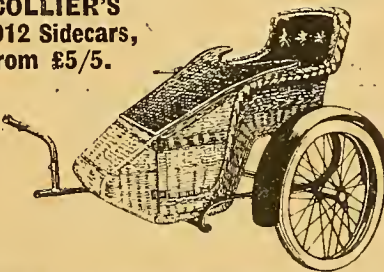
### TRICARS AND CARS.

- |  |        |
|--|--------|
| 3½ h.p. 2-speed HUMBER, Olympia Tricar                               | £13 10 |
| PHENIX Forecar, less tyres   | 17/6   |
| 4-cylinder 2-seater WOLSELEY Car, recently overhauled, great bargain | £29 10 |
| 5 h.p. W.C. 2-speed MONOCAR, open frame                              | £15 0  |

A CALL WILL REPAY YOU

## COLLIER'S

### 1912 Sidcars, from £5/5.



BACKED BY TEN YEARS' EXPERIENCE  
EVERY CAR GUARANTEED 12 MONTHS:  
“Popular,” Clipper or Continental tyre ..... **£5 5 0**  
“Superbe” type, with best tyre, apron, etc. .... **£6 6 0**  
Side-entrance body, as illustrated ..... **£7 10 0**  
Ditto, with best coach-built body ..... **£7 12 6**  
Improved Quick Detachable Joints, Cranked Extra Strong Back Axle and Spindle to all Models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.  
Discount to trade. Exchanges entertained.



## ROBERTSON'S SPECIALTIES.

## THE WALL TRICARRIAGE.

5 H.P., 2-SPEED SHAFT DRIVE,  
DIFFERENTIAL, 50 MILES PER  
GALLON, 40 MILES PER HOUR.  
**PRICE 100 GUINEAS.**  
COME AND HAVE A TRIAL RUN.

## TURNER SIDE CARS.

MODEL No. 1 - - - £14 15 0  
MODEL No. 2 - - - £13 13 0  
Extras: HOOD, 35/-; SCREEN, 35/-  
COME AND HAVE A TRIAL RUN.

## C.M.C. CARETTE

6-8 H.P., TWIN-CYLINDER, WATER  
COOLED, 3 SPEEDS AND REVERSE,  
WHEEL STEERING, PRICE 95 GNS.

## MILLFORD SIDE CARS

ALL MODELS, WICKER, CANE,  
AND COACHBUILT BODIES.  
FROM £6 6 0 TO £24 0 0.

## THE IVY MOTOR CYCLES

## COWEY & JONES SPEEDOMETERS

## F.R.S., MILLER, & P. & H. LAMPS.

## XL'ALL SADDLES

## ALL SPARES

FOR J.A.P. ENGINES,  
ZENITH MOTORS,  
AND ROC GEARS.

## GRADUAL PAYMENTS

## ROBERTSON'S

TELEPHONE: 5767 MAYFAIR.

157, GREAT PORTLAND STREET, W.

### MOTOR BICYCLES FOR SALE.

N.S.U., 1910 model, twin-cyl., 4h.p., mag., free engine, 2 speeds, Continental tyres; bargain, £22/10.—12, Bull Ring, Birmingham. [X940]

JAMES, 1911 model T.T., 3½h.p., Precision engine, Bosch mag., B. and B. carburettor, Druid spring forks, very fast; bargain, £28.—12, Bull Ring, Birmingham. [X941]

TRIUMPH Motor Cycle, 3½h.p., mag., Dunlop tyres; bargain, £25/10.—Brown's, 12, Bull Ring, Birmingham. [X942]

MOTO-REVE, 2½h.p., twin-cyl., mag., Druid forks, Michelin tyres; bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham. [X943]

REX, 3½h.p., 1911, standard model, m.o.v., aluminium footboards, spring forks, splendid condition; sell £25/10.—Brown's, 12, Bull Ring, Birmingham. [X944]

REX, 5-6h.p., twin-cyl., free engine, handle starting, Lucas carburettor; bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham. [X945]

1912 Model Rex de Luxe Sidette, 4h.p., free engine, 2 speeds, Palmer tyres, spring forks, and cantilever seat, fitted with handsome sidecar; cost £74 recently, sell turn of £54; exchange entertained.—Brown's, 12, Bull Ring, Birmingham. [X946]

BRADBURY, 3½h.p., 1910 model, free engine, mag., spring forks, Clincher Dreadnought tyres; sell bargain, £29.—Brown's, 12, Bull Ring, Birmingham. [X947]

N.S.U. Motor Cycle, 3½h.p., mag., spring forks, Michelin tyres, recently overhauled, first-class condition; sell bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham. [X948]

1912 Triumph, free engine, brand new, been 10 miles only; £49/10; or with 7gn. sidecar, £55; twin wanted.—Wardle, Eastwood, Notts. [X1055]

BRADBURY, 1911, splendid condition, best Lucas lamp set, tyres good, exhaust whistle; a bargain, £32.—120, Derby Rd., Nottingham. [X127]

TRIUMPH, free engine, excellent condition, 1911 machine, tyres good; price £35.—Apply, X, c/o Llandovery Garage, Stratford-on-Avon. [X991]

TRIUMPH, 1911 8-12, free engine, carefully used and kept; accept our cash offer about £39/10.—240, Reddings Lane, Sparkhill, Birmingham. [X977]

HUMBER, 1912, 3½h.p., 2-speed model, in excellent condition; sacrifice £42 cash, no offers.—P. J. Evans, 358, Stratford Rd., Birmingham. [X276]

HUMBER, 1911, 3½h.p., 2-speed, first-class order; £35, complete.—360, Stratford Rd., Birmingham. [X277]

ENFIELD, 1912, 6h.p., with coach-built sidecar, bought Whiteside; cost £88; Lucas lamp, spares; accept £72.—P. J. Evans, 360, Stratford Rd., Birmingham. [X278]

NEW Hudson, 1912, 3½h.p., 3-speed, £48; also 2½h.p., 3-speed, £42; both practically new, and complete.—P. J. Evans, Sparkhill, Birmingham. [X279]

CLYNOS, 1912 models, in stock, also sidecars; special terms to trade.—P. J. Evans, wholesale agent, Sparkhill, Birmingham. Tel.: 13 Victoria. [X280]

SCOTT, 1912 model, just delivered, £65; also Canelet, 12gns.—Evans, Sparkhill, Birmingham. [X281]

ALLDOYS, 1912, 3½h.p., 2-speed model, scarcely soiled, £40; with Montgomery sidecar, £47, complete.—P. J. Evans, 360, Stratford Rd., Birmingham. [X282]

HUMBER, 1912, 2½h.p. twin, several special fittings, £35; also 3-speed ditto, T.T. machine, £42; both as new, and fully guaranteed.—P. J. Evans, 360, Stratford Rd., Birmingham. [X283]

MOTOR Cyclists.—You can inspect practically every well-known make of motor cycle at P. J. Evans's depot: 60 machines in stock for immediate delivery, several at very tempting prices. See my column advert.—P. J. Evans, Motor Depot, Sparkhill, Birmingham. [X284]

5-6h.p. F.N. 1911 M.C. and Sidecar, in excellent order; 2½h.p. Humber 1912 lightweight, new May; 2½h.p. Humber twin, new.—Bailes Bros., Gainsborough. [X846]

TRIUMPH, May, 1910, new Bom tyne and Dunlop belt, lamp, horn, Rey whistle; £29 cash.—A. T. Wright, Broadway, Kettering. [X843]

1912 3½h.p. Motor Cycle, Condor engine, Thomson-Bennett mag., C.A.P. carburettor, Continental tyres; no reasonable offer refused.—F. Spencer, Priory Mill, Coventry. [X1026]

ARIEL 2½h.p. Lightweight, m.o.v., vertical engine, accumulator ignition, 26x2in. Palmer tyres, very speedy machine, in perfect order; £7.—Holland, Clarendon St., Coventry. [X1033]

IVY-PRECISION, 1912, 3½h.p., Armstrong 3-speed, free engine, Dunlops, Lucas lamp, horn, aluminium footboards, spares, inner tube, 2 leather cases; £39, cost £60.—Ness, 34, Bristol Rd., Birmingham. [X4215]

CLEARANCE Sale.—3½h.p. Rudge, free engine, £52/10, usual price £55; 3½h.p. 2-speed free engine Humber, £50, usual price £52/10; 2½h.p. twin Humber, free engine, £45/10, usual price £46; all brand new and not unpacked.—Richardson, motor garage, Northampton. [X4105]

TRIUMPH, 1908½, splendid condition, tyres good, new Dunlop belt, trousers guard, decompressor, cover to mag., belt, tube case, horn, 1911 pulley, spares—Lyso, belt, cover, tube, pulley, valve, plus mag. parts, carefully used; will stand expert examination; 25gns. lowest.—Stanley, 15, Caroline St., Birmingham. [X1073]

## ROBERTSON'S NEW MACHINE

FOR IMMEDIATE DELIVERY

ALL MODELS OF TRIUMPH, BAILEY,  
DOUGLAS, CLYNO, HUMBER, IVY,  
NORTON, RUDGE, ROVER, P. & H.,  
NEW HUDSON, ZENITH, ENFIELD,  
MATCHLESS, SCOTT, SINGER, ETC.

## SECOND - HAND EVERY MACHINE

OVERHAULED AND GUARANTEED

1912.

### G. N. CYCLECAR £8

IN PERFECT ORDER

- 1215 P & M., 3½ H.P., 2-SPEED, One very old. Horn and lamp never been used
- 1203 IVY PRECISION, 3½ H.P. T.T. MODEL. Ridden about 100 miles .....
- 1181 HUMBER, 2½ H.P., 3-SPEED. Footboards, Like new. Lamp, horn, and tools
- 1167 LINCOLN ELK, 3 H.P. Ridden about 50 miles. Lamp, horn, and tools .....
- 1188 NEW HUDSON, 3½ H.P., 3-SPEED GEAR, SHOP-SOILED ONLY .....
- 96 NORTON, 3½ H.P. STANDARD MODEL, SHOP-SOILED ONLY .....
- 1186 RUDGE, 3½ H.P., F.E. MODEL. As new. Lamp, horn, and tools .....
- 1222 RUDGE, 3½ H.P. T.T. MODEL. Lucas lamp, Max, Cowey, spares, tools .....
- 1198 TRUMP J.A.P., 4 H.P. Brand new engine. Very fast, horn .....
- 1175 ZENITH, 3½ H.P. In perfect order Lamp, horn, and tools .....
- 1147 ZENITH, 3½ H.P. Hardly used, Lamp, horn, and tools .....
- 1143 ZENITH, 3½ H.P. Seaspray carburettor. Like new. Lamp, horn, and tools
- 1188 ZENITH, 6 H.P. Beautiful order. Lamp, horn, and tools .....

1911.

- 1173 BAT, 6 H.P. New condition. Lamp, horn, and tools .....
- 1142 BRADBURY, 3½ H.P. Fine order. Lamp, horn, and tools .....
- 1202 BRADBURY F.E., 3½ h.p. All accessories .....
- 1154 F.N., 4-CYLINDER, 5-6 H.P., 2-SPEED. Lamp, horn, and tools .....
- 1217 HUMBER, 2½ H.P., 3-SPEED. Splendid order, lamp, horn, and tools .....
- 1208 SCOTT, 2-SPEED, 2-STROKE, 2-CYL. water-cooled. Suitable for a lady .....
- 1192 PREMIER, F.E., 3½ H.P. Fine order. Lamp, horn, and tools .....
- 1200 ZENITH, 6 H.P. Splendid for sidecar. Lamp, horn, and tools .....
- 1090 ZENITH, 3½ H.P. Good appearance. Lamp, horn, and tools .....
- 1182 ZENITH, 3½ H.P. Exceptionally good order. Lamp, horn, and tools .....

### MISCELLANEOUS

- 1091 1910 SCOTT, 3½ H.P., 2-SPEED, 2-STROKE. Lamp, horn, and tools .....
- 1211 4 H.P., STEVENS, Magneto, H.B. control, spring forks, lamp, horn and tools
- 1211 1910 PREMIER, 3½ H.P. 2-CYL. Lamp, horn, tools. Most excellent condition
- 1220 SWIFT, 3½ H.P. WHITE & POPPE ENGINE. Lamp, horn, and tools .....
- 1219 1908 F.N., 4-CYL. 1912 carburettor and clutch. Lamp, horn, and tools. Perfect condition .....
- 1154 1909 F.N., 4-CYL. In perfect order. Lamp, horn, and tools .....

## ROBERTSON'S

TELEPHONE: MAYFAIR 5767

157b, GREAT PORTLAND STREET, W.



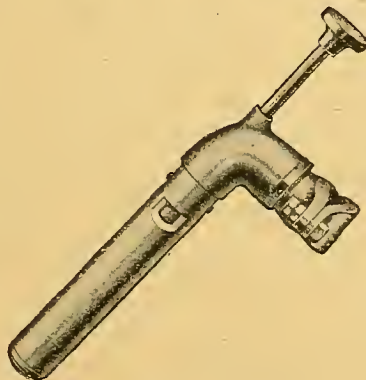
**MOTOR BICYCLES FOR SALE.**

**UGLAS**, winner of 6 days trials; immediate delivery.—Keys, 44, Finsbury Pavement, E.C. [4069]  
**UGLAS**, K., slightly soiled, new condition.—Keys, 44, Finsbury Pavement, E.C. [4084]  
**UGLAS**, the lightweight that equals the average 3½ h.p. machine.—For immediate delivery call at 44, Finsbury Pavement, E.C. [4070]  
**WITCHLESS**, the famous sidecar machine; immediate delivery.—Keys, 44, Finsbury Pavement, E.C. [4071]  
**WITCHLESS**, the sidecar machine that has plenty of reserve power.—Immediate delivery from Keys, 44, Finsbury Pavement, E.C. [4072]  
**W Hudson**, the reliable solo-cum machine; immediate delivery.—Keys, 44, Finsbury Pavement, E.C. [4073]  
**W Hudson** is noted as the "no trouble" machine, being smooth in running, and thoroughly reliable. Immediate delivery from Keys, 44, Finsbury Pavement, E.C. [4074]  
**W.A.**—This machine equals many higher power models, and is reliably adapted for sidecar or solo use.—Immediate delivery from Keys, 44, Finsbury Pavement, E.C. [4075]  
**W.A.**, £50 model, 200 miles wear only; £37/10.—Call and see this model at once, Keys, 44, Finsbury Pavement, E.C. [4076]  
**W.A.**, First-grade Motor Cycles of any make delivered from stock; cash or terms.—Before purchasing call on Keys, 44, Finsbury Pavement, E.C. [4077]  
**W.A.**, 1909, perfect, just spent £4 on overhaul; 2½ h.p.—209, Northend Rd., West Kensington. [4236]  
**W.A.**, Motor Cycle, good running order; £10.—Cooper, 15, Webbs Rd., Battersea Rise, S.W. [4097]  
**W.A.**, 1910, twin-cyl., mag., fine tyres, new belt; £15/10.—230, Ferme Park Rd., Hornsey. [4311]  
**W.A.**, 1910, excellent condition; any trial; £22; any day after 6.—333, Norwood Rd., S.E. [X728]  
**W.A.**, 1910, tyres new, good condition, cheap; seen, tried.—Particulars, Stephens, Enfield, Tonbridge. [X811]  
**W.A.**, 1910, twin, Cowey, Lucas set, spares; £25 or exchange.—49, Tunstall Rd., Addiscombe. [X931]  
**W.A.**, 1910, Douglas, excellent condition, lamp, and spares; £26, or nearest offer.—Long, 12a, Hill St., Woolwich. [3989]  
**W.A.**, 1910, S.A.C.O.C.H.E., 2½ h.p., new May, little used, perfect condition; £25.—Jarvis, Corner House, Old Kent Rd. [2991]  
**W.A.**, 1910, Minerva, mag., 1912 C.A.P. carburettor, all in perfect order; £15.—47, South Lambeth Rd., Vauxhall. [X1051]  
**W.A.**, 1910, 4 h.p., in good condition, new rear tyre and Dunlop belt; £22/10.—Parker's Garage, Clifton. [4051]  
**W.A.**, 1912, clutch model, brand new, unused; £15 offer over £50.—55, Nevill Rd., Stoke Newington. [X1125]  
**W.A.**, 1910, in splendid running order, complete with accessories; £17.—7, Vale Terrace, King's Cross, Chelsea. [4159]  
**W.A.**, 1910, shaft-driven, in good order, mag.; 20 h.p.; can be seen any time.—99, Churchfield Rd., Acton W. [4053]  
**W.A.**, 1910, Season Bargains—New 1912 Zeniths, 6 h.p., £2; 3½ h.p., £49.—Storey's, 1, Edell St., Longbridge, V.C. [X1112]  
**W.A.**, 1911, Premier, 1911, free engine model, new condition; £37/10.—W. Dahle, 6, Carrington Mews, Marylebone. [4023]  
**W.A.**, 1910, Douglas, everything perfect condition; £22; appointment.—Motor, 17, Suffolk St., Forest Gate, Essex. [4059]  
**W.A.**, 1910, Rudge, and Douglas, all models, for immediate delivery; trade supplied.—Key, 5, Heath St., Finsbury. [X896]  
**W.A.**, 1911, 3½ h.p., 1911, free engine model, like new; bargain, £38/10.—155, Goldhawk Rd., Shepherd's Bush. [4194]  
**W.A.**, 1910, Douglas Model K, 2-speed, kick starter, spares, and new condition.—Bonaccord, Hadleigh Rd., Leigh-on-Sea. [4154]  
**W.A.**, 1910, Triumph, mag., free engine clutch, perfect order, and new; bargain, £28.—Sheppard, 18, Holywell St., Albans. [X802]  
**W.A.**, 1910, 2½ h.p., 1910, good condition; seen any day; £20 cash for quick sale.—Stone's Garage, Vauxhall-on-Sea. [4041]  
**W.A.**, 1910, Humber, chain drive, mag., Amos spring seat, long bars; £12; any trial.—Primrose, Cottingham, Leicestershire. [4213]  
**W.A.**, 1911, Zenith, 1911, perfect condition throughout; £38, or near offer.—John Mills, Fairview, Pershore, Surrey. [4281]  
**W.A.**, 1910, 3½ h.p., recently overhauled, refurbished, and new tyres, accessories; £20.—Preston, 48, Queen's Rd., Finsbury. [4181]  
**W.A.**, 1911, 1911, with 1912 lubrication, silent, powerful; bargain, £43/16.—Southdean Gardens, Souths, S.W. [4109]

**YOU ARE PROUD OF**

your machine no doubt, and always care for it as much as possible. You buy only the best accessories for it, and the very best accessory is

**The Garner M.C. Alarm**



Acknowledged to be the

**Finest Exhaust Alarm.**

The output steadily increases weekly, thus proving its claims.

**EASILY FITTED AND ADDS TONE TO YOUR MOUNT.**

Nickel 12/6 Black 13/6  
Plated Plated

United Kingdom, Postage 5d. extra.

Sole Makers and Patentees:

**HENRY GARNER, LTD.,**  
Moseley Motor Works,  
Birmingham.

'Phones.—South 3 & 4.

'Grams.—"Dependable, Moseley."

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LONDON STOCKISTS:

Brown Bros., Gt. Eastern Street.  
Bransom, Kent & Co., Gt. Eastern Street.  
C. Lohmann, Gt. Eastern Street.  
Robertson's Motor Agency, 157, Gt. Portland St., W.  
The Service Co., 292, Holborn W.C.  
East London Rubber Co., Gt. Eastern St., E.C.

**MOTOR BICYCLES FOR SALE.**

**ROC** Motor Cycle, 4½ h.p., mag., free engine, and sidecar; £28; any trial given.—J.A., 47, Ellington St., Barnsbury, N. [3987]  
**REX**, 3½ h.p., late 1910, free engine, spares, accessories; £28.—Bicknell, 326, Queen's Rd., Upton Park, London, E. [X853]  
**RUDGE**, 1912, free engine, only ridden 300 miles; cost £55 in June; 42 gns.—22, Hargrave Rd., Upper Holloway. [X56]  
**TRIUMPHS**, 1912, 3½ h.p., free engine models; immediate delivery; £55.—F. Spearman, Bridge St., Bishop's Stortford. [3919]  
**MOTO-REVE**, 2½ h.p. twin, mag., good condition; £13; bought sidecar combination.—18, Nightingale Rd., Hampton. [X1004]  
**3½ h.p.** Rex, Longueville, new brass tank, and tyres, splendid running order; £18/15.—Speckley, 45, Church Rd., Acton. [X1096]  
**NEW** Hudson, 1912, 2½ h.p., 3-speed, new April, tyres new, lamp, and spares; £42, net.—Cook, 118, James Lane, Leyton. [X723]  
**BRADBURY** 3½ h.p. Standards, £48; 2-speeds, £55.—Agents: Bright and Hayles, 73, Church St., Camberwell Green. [X1129]  
**BRADBURY**, 5½ h.p., spare parts and repairs a speciality.—Agents: Bright and Hayles, 73, Church St., Camberwell Green. 'Phone: Hop 50. [X1130]  
**3½ h.p.** Minerva, 1908, £15; 3½ h.p. Triumph, 1910, £22; both in excellent condition.—Clifford Caut, Braiswick, Colchester. [0140]  
**2½ h.p.** Vindee Special, mag., excellent order throughout; must sell; first reasonable offer.—Rectory Farm, Gestingthorpe. [4114]  
**MOTOSACOCHE**, 1911, 2½ h.p., splendid condition, Brooks padded saddle, good tyres; £24.—Radcliffe, Jarvis Brook, Sussex. [4122]  
**EAGLES**—Bradbury, 3½ h.p., just delivered, with Sturmer-Archer 3-speed gear and free engine; exchange or deferred payments.  
**EAGLES**—Rover, 1912, fixed engine model, latest pattern, with dropped rear frame, slightly soiled; £44.  
**EAGLES**—New Hudson, 2½ h.p., 1911 model, J.A.P. engine, 3-speed gear and free engine; £35.  
**EAGLES**—Triumph, free engine model, late 1911. 1912 spring forks, all accessories; £40.  
**EAGLES**—N.S.U., 2½ h.p., latest pattern model, Bosch mag., loop frame, rear spring, 2 speeds, free engine, Cowey speedometer, P. and H. head lamp, as new; £37.  
**EAGLES**—Excelsior, Chater-Lea, 3½ h.p., low built, h.b.c., adjustable pulley; £9/10.  
**EAGLES**—N.S.U., 6 h.p., latest model, twin, with 2 speeds, free engine; £61/15 (the ideal sidecar machine); delivery from stock.  
**EAGLES**—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engines, from £5/15; for Triumph £6/15, for Bradbury £7.  
**EAGLES**—We have a few brand new 3½ h.p. 1911 N.S.U. 65x88 Model de Luxe, just delivered, fine machines for sidecar work, Bosch mag., 1912 spring forks and other improvements, finished in latest style, complete with stand, carrier, tool case, full set of tools, £37; N.S.U. 2-speed gear £5/15 extra; Millford Herald sidecar with No. 1 torpedo body, £7/15 extra; deferred payments, exchanges entertained.  
**EAGLES** and Co., High St., Acton.—N.S.U., West London district agency. Immediate delivery of 1912 models; liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X1041]  
**3½ h.p.** Twin Motor Cycle, spring frame, perfect condition, good sidecar machine; £15, or near offer.—13, North St., Barking. [X1030]  
**BRADBURY**, 1910, 3½ h.p., Dunlops, perfect, absolutely reliable; £24.—Rev. Wheeler, The Manse, Little Hadham, Herts. [X451]  
**SPLENDID** Lightweight, 2½ h.p. Minerva engine, latest dropped frame, all in perfect order; £10.—P.C., 167, Victoria St., S.W. [3981]  
**TWIN** N.S.U., 2-speed, free engine, new tyres, m.o. valves, large driving pulley; price £30.—C. Gapp, 24, Gordon Rd., Ealing. [4011]  
**3½ h.p.** Centaur, splendid order; £12/10, or near offer, must be sold.—Full particulars, Police Station, Ashford, Kent. [X885]  
**DOUGLAS**, 1910, 2½ h.p., horn, lamp, mirror, reflector, and tools; £24.—W. B. Verrall, 275, London Rd., St. Leonards. [X872]  
**MOTOSACOCHE**, 2½ h.p., mag., Druid forks, stand, carrier, etc.; £12/10, genuine bargain. [X1127]  
**1911**, Triumph, in excellent condition and order, tyres unpunctured; £35, bargain.—Matthews, pawnbroker, W. Croydon. [X163]  
**1910** Moto-Reve, nearly new and look new, not ridden last year or this; owner gone away; £16, or best offer.—Morter, Colchester. [4260]  
**1910** Royal Enfield, 2½ h.p., Bosch mag., Druids, thoroughly overhauled and enamelled which cost £8; great bargain, £20; new condition, lovely machine.—Morter, photographer, Colchester. [4259]



## MOTOR BICYCLES FOR SALE.

**2 1/2** h.p. Precision-Brown, unfractured, used 2 months; cost £56, bargain, £50; owner buying 5 1/2 h.p. 43, Levensden Rd., Watford. [X1003]

**19** 12 3 1/2 h.p. Centaur, decompressor, not done 200 miles, expensive lamp and horn; £45.—Chaplin, Southern Hospital, Dartford. [X256]

**3 1/2** h.p. Ariel, mag., 1912 Amac, h.b.c., good tyres, Lyco belt; any time; £13/10.—J. Hebblethwaite, jnn., Gould Rd., Twickenham. [X4040]

**19** 12 T.T. Triumph, in splendid condition, very fast (Phone: 1525 Kingston); best offer secures.—37, Richmond Rd., Kingston. [X4157]

**4** h.p., 3 1/2 h.p., 2 1/2 h.p. motor cycle; must be sold, from £25, in good running order, exceptional value.—Allison, 46, Church Rd., Acton. [X285]

**R**UDGE T.T. Roadster, late 1911, splendid condition; accept 30gns, immediate sale.—11, Borthwick Rd., Leytonstone Rd., London, E. [X280]

**D**OUGLAS, 1911, Model D, splendid condition, horn, tools, etc.; £30.—Apply after 6 o'clock, Leader, 36, Stamford Rd., Fulham, S.W. [X4018]

**1 1/2** h.p. F.N. Lightweight, Bosch, h.b.c., under-geared 12 pulley, spring forks; bargain, £10/10.—Manager, 12, Elephant Rd., London, S.E. [X1087]

**2 1/2** h.p. De Dion, spring forks, h.b.c., low, Palmer cord; £10, or exchange higher power and cash.—134, Katherine Rd., East Ham. [X3984]

**N**EW Hudson, 2 1/2 h.p., 3 speeds, only ridden 200 miles, 40gns.; ditto, 3 1/2 h.p., quite new, 57gns.—F. Spearman, Bridge St., Bishop's Stortford. [X3920]

**2 1/2** h.p. Minerva, B. and B. carburettor, h.b.c., recently overhauled, in perfect order; £9; trial by appointment.—Goff, Hale Farm, Edgware. [X4306]

**E**XCELSIOR, B. and B. spring forks, new tyres, powerful engine perfect, lamp, spares; £14.—L. J. Driver, 104, The Grove, Ealing, W. [X3998]

**T**RIUMPH, 1911 1/2, free engine, in excellent condition, new back tyre, new belt, lamp, horn, and tools; £38.—Oho, Esher Av., Walton-on-Thames. [X3996]

**19** 11 Douglas, 2-speed, free engine and clutch, handle starting, lamp, horn, spare valves, perfect condition; £36.—33, Northbrook Rd., Lee. [X4104]

**M**INERVA, 2 1/2 h.p., low frame, B.B., dry cell, adjustable pulley, tyres good, fast; photo; £12, offers.—E.L.L., 298, Romford Rd., Forest Gate. [X4186]

**3 1/2** h.p. Motor Cycle, low, free engine clutch, m.o.v., Amac carb. h.b.c., good tyres and condition; £10/10.—25, Crisp Rd., Hammersmith, W. [X4193]

**A**RIEL, 2 1/2 h.p., h.b.c., B. and B., new accumulator, tyres, and belt, in good condition, lamp and horn; £10.—Widdowson 43, Water Lane, Stratford. [X4063]

**B**RAND New Rudge 1912 T.T. Roadster, unridden, very fast engine; must sell, £42, bargain.—11, Borthwick Rd., Leytonstone Rd., London, E. [X4279]

**4** h.p. Stevens, Chater-Lea, spring forks, Whittle footboards, with sidecar, thorough going order; £16.—R.F., 32, Belhaven St., Grove Rd., Bow. [X4148]

**D**OUGLAS, Model D, late 1911, lamp, horn, cycleometer, 2 spare tyres, and belt, perfect; £30; giving up riding.—Tubbs, Avondale, New Eitham. [X4222]

**19** 11 F.N., 4-cyl., 5 1/2 h.p., perfect running order, new condition, very little used, complete equipment; £29/10.—15, Boveney Rd., Honor Oak Park, S.E. [X4185]

**19** 12 Douglas, 2-speed, and 1912 Forward, 3-speed, both perfect bargains; also Amac carburettor, to fit Douglas, 20/—S., 20, Clavering Av., Barnes. [X4049]

**D**OUGLAS, 1910, recently overhauled, good going condition, lamp, horn, accessories, bought new machine; £24, or offer.—21, Beaufort Rd., Reigate. [X1068]

**T**RIUMPH, 3 1/2 h.p., 1908, B.B. 1912 carburettor, h.b.c., excellent condition; any trial; £20.—Johnson, Silchester Mews, 1 min. Latymer Rd. Station. [X4020]

**T**RIUMPH, 1912, 3 1/2 h.p., free engine model; instant delivery; £55, cash, or deferred payments.—John Barker and Co., Kensington High St., W. [X5623]

**P**HELON and Moore, Ltd., 4, Percy St., W., have several 2nd-hand P. and M.'s for sale; particulars on application or can be seen at above address. [X6772]

**D**OUGLAS.—Order at once for immediate delivery of the famous Douglas motor cycles; all models in stock.—Macheths, 294, Holloway Rd., London, N. [X4078]

**P**RECISION-MACBETH.—The last word in value fitted with Precision engine, Bosch mag., Dunlop tyres, etc., built to order for 35gns.; every accessory of the best obtainable.—Macheths, 294, Holloway Rd., London, N. [X4079]

**B**.S.A.—Immediate delivery of all models; largest stock in London; cash or terms.—Macheths, 294, Holloway Rd., London, N. [X4080]

**M**ATCHLESS.—The unequalled sidecar machine; to get immediate delivery call at Macheths, 294, Holloway Rd., London, N. [X4081]

**B**.S.A., 1912, free engine model, few weeks' wear; £47/10.—Macheths, 294, Holloway Rd., London, N. [X4082]

**M**OTORS.—Before purchasing a motor cycle, it will pay you to call and inspect the stock at Macheths, 294, Holloway Rd., London, N. [X4083]

**3 1/2** h.p. Fafair m.o.v. Motor Cycle for sale, h.b.c., £4 less coil and accumulator; £7, no offers.—Box L8,400, The Motor Cycle Offices, 20, Tudor St., E.C. [X4021]

## ONCE AGAIN.

**N**OW that business is easing a little we can spare a few minutes' chat with old and new friends. We have been rushed out of the place with orders, and the constant demand for "Cordingley Bargains" has been maintained throughout the year. We have not finished all of them yet; so if it has not been your luck to obtain one, write for our list at once. It is a shrewd business man's policy to save money. Why don't you save when next you buy a Motor Cycle? Nowhere in the country do you find a select stock such as we have at the moment. It may not be quite as large in numbers as some of our competitors, but it is larger in quality. It does not interest you when someone shouts "A thousand bargains"—You only want one. The place to get it is Cordingley's. By the way, if you have got fixed up for this year, don't do anything for 1913 until you have either seen or written to us. We have secured some very special agencies, and we can "treat you right." Glance through our list, and if anything interesting, let us have your offers or enquiries. We are here to receive your call, but call now.

## 1912 MODELS HERE.

**C**LYNO, 5-6 h.p., with or without sidecar.

**E**NFIELD, 6 h.p., with sidecar.

**R**UDGE Multi.

**T**RIUMPH Free-engine Model.

**S**INGER, 4 h.p., bracket gear model.

**N**EW HUDSON, with the new "Start-on-the-ground" Armstrong hub.

**S**COTT, 1912 model, XL! All saddle.

Other models. Send for list and prices.

## ARDEN CYCLECAR

for Immediate Delivery.

## SHOP-SOILED 1912 MODELS.

MUST BE CLEARED.

Usual Clearance

Price. Price.

**B**AT-J.A.P., 3 1/2 h.p., P. & M.

2-speed, chain drive, handle

starting, 2 1/2 in. studied tyre

rear, spare exhaust valve,

complete with lamp, horn,

generator, and sidecar ..

£67 10

£60 0

One **C**ENTAUR, 2 h.p., 3-sp.

Two **R**OVERS, free engine

models, each ..

55 5

47 0

One **B**RADBURY, 2-speed,

belt drive ..

56 6

48 0

One **B**RADBURY, 2-speed,

chain drive ..

58 10

53 0

One **S**INGER, 4 h.p., 2-speed,

bracket gear, pedal engine

starter ..

65 0

57 10

**R**UDGE Multi ..

60 0

Offers

One **R**OVER, 3-speed, sidecar

machine ..

61 12

54 0

One **B**.S.A., 2-speed ..

60 0

53 0

Two **B**RADBURYS, free engine

models, each ..

54 10

46 0

One **P**REMIER, free engine

model ..

54 17

46 0

One **P**REMIER, 2 1/2 h.p., free

engine ..

43 7

38 0

One **R**UDGE, free engine

model ..

55 0

48 0

One **R**UDGE, T.T. model ..

48 15

42 0

No reasonable offers refused.

## SPECIAL TERMS TO THE TRADE.

A Selection from our Second-

hand Bargains.

**I**NDIAN, 5 h.p., twin, 1911, new August,

and had little and careful use, clutch

model. Special bargain ..

£40 0

**B**RADBURY, 3 1/2 h.p., T.T., 1911 model,

Druidfords, splendid and fast machine

32 0

**V**.S., 5-6 h.p., twin, 1910 model, fine

machine ..

30 0

**E**NFIELD, 2 1/2 h.p., 1912 model, only run

400 miles, 2 speeds, free engine, handle

starting, enamelled helio, new £4 4s.

Cowey, watch, lamp, generator, horn,

etc., as new ..

45 0

**P**REMIER, 3 1/2 h.p., late 1910 model, and

in perfect order; complete with lamp,

horn, and good sidecar; really good

35 0

**D**OUGLAS, 2 1/2 h.p., 1910 model, splendid

order and condition throughout ..

25 0

**M**OTO-REVE, 1910 model, 2 1/2 h.p., grey,

new tyres, perfect order ..

20 0

**J. S. CORDINGLEY,**

THE MOTOR CYCLE MART,

Haslingden, Lancashire.

Wires—"Cordingley, Haslingden."

Phone—2Y, Haslingden.

## MOTOR BICYCLES FOR SALE.

**I**NDIAN, late 1911, 5 h.p., free engine, condition new, complete with Chater-Lea sidecar; £48 trial.—Anglo-Saxon Motor Co., 100, Bolsover St.

**R**OC, 4 h.p., 2 speeds, mag.; accept £19/10 to fit Anglo-Saxon Motor Co., 100, Bolsover St.

**J**.A.P. Twin, 6 h.p., mag., Chater-Lea fittings, complete with sidecar; £26, rare bargain.

**T**RIUMPH, standard, 1911, condition as new; any trial.—Anglo-Saxon Motor Co., 100, Bolsover St.

**19** 12 B.S.A., cost £50, not ridden 700 miles, in excellent condition; would accept £40.—L8,435, The Motor Cycle Offices, 20, Tudor St., E.C.

**19** 11 Rex, 1912, free engine hub, clutch, handle starting, lamp, horn, speedometer, quick £37; seen any time.—Crompton, 137, High St., A.

**6** h.p. Twin, mag., m.o.v., speed gear and free tyres, spring forks, very low, splendid condition; after 5 p.m.—26, Mathews St., Battersea.

**19** 12 B.S.A., standard, perfect, Lucas set, horn, complete; £43, genuine bargain; any trial; owner buying car.—Barry, Windmill St., Gravesend.

**D**OUGLAS, 1912, 2-speed model, practically owner buying higher power; price £42, great gain.—Ramsgate Motor Works, Alpha Rd., Ramsgate.

**2 1/2** h.p. Brown, h.b.c., smart, reliable, £8/10, take £4 part; Bowden triple lever, 6 1/2; F.N. carb. 4/6; plain coil, 4/6.—6, Stratfield St., Limehouse.

**N**EW Rex, 1912, 4 h.p., water cooled, m.o.v., complete with 1912 Bosch mag.; real bargain; Bastons's, 215 and 217, Pentonville Rd., King's Cross.

**Z**ENITH-GRADUA, 1912, 3 1/2 h.p., with horn, valves, etc.; cost £55, Whitehead, accept £24 good sidecar machine; call after 7—11, Lorn Rd., L. ton.

**F**.N., 1911, clutch model, single control carburettor, full intake, all equipment, including ometer; £35.—Berliet Motors, 40, Sackville St., E. dilly, W.

**D**OUGLAS, 1912, Model K, 2-speed, and free engine clutch, with tools, spares, lamp, and price £40.—Write No. 1,158, The Motor Cycle Office, Coventry.

**B**ROWN 2 1/2 h.p. Lightweight Motor Cycles always stock; £36 cash or 50/- monthly, no extra for payments.—Lamb's Motor Stores, 151, High Walthamstow.

**A**RIELS.—We have always a complete range of fast, cool running models in stock from £40 no extra for easy terms.—Lamb's Motor Stores, High St., Walthamstow.

**N**EW Hudsons.—These splendid hill-climbers in stock from £49/7 cash; no extra for easy terms.—Lamb's Motor Stores, 151, High St., Walthamstow.

**N**EW Hudson, model 3B, 3 1/2 h.p., 3-speed, soiled; £54/17 cash, usual price £59/17; repeat this offer.—Lamb's Motor Stores, 151, High Walthamstow.

**B**ROWN Lightweight, 2 1/2 h.p., slightly soiled; £33/10, usual price £36; only one left.—Lamb's Motor Stores, 151, High St., Walthamstow.

**19** 10 P. and M., like new, mileage 2,650, C. Lucas lamp and spares, with special, new, low torpede sidecar; £47/10.—1, Chaffinch Rd., B. ham.

**N**OBLE, 2 1/2 h.p., grey, very fast, accumulator, overhauled, good running order, took sidecar 12th passenger last week; £6.—Brant, 112, High Margate.

**2 1/2** h.p. Century Lightweight, very low, spring 2 B. and B. carburettor, fast machine; bs £8/10.—Murray, 37a, Charles St., Hatton G. Holborn.

**2** SPEED Rex de Luxe (Roc gear), 3 1/2 h.p., 1909, just overhauled, good as new, sacrifice giving up motor cycling.—14, Baskin Rd., Harlin Middlesex.

**3 1/2** h.p. Humber, chain drive, Hellesen, 1912 B. 3 1/2 B. universal, climb all hills, good tyres, £11.—W. Ford, Blackham, Langton Green, near bridge Wells.

**19** 12 2 1/2 h.p. New Hudson, XP! All saddle, lamp as new, £45; also new tube, tyre, belt spring pillar for sale.—Vallance, Medway Darry, G. ham, Kent.

**3 1/2** h.p. Motor Cycle, low Chater-Lea frame, 1912 new, in excellent running order, take any inspection; bargain, £17.—Kinwald, 44, L. Rd., Forest Hill.

**M**INERVA, 2 1/2 h.p., low frame, Druid forks, ignition, Brown and Barlow carburettor, new tyres, sound condition; £12.—Cowan, 16, Rich Rd., Wimbledon.

**Z**ENITH Gradya, new 1912, 3 1/2 h.p., only ridden 100 miles, perfect condition; owner bought new lower h.p.—Can be seen any time, 69, Drayton G. South Kensington.

**2 1/2** h.p. F.N., mag., 2-speed, free engine, adjustable pulley, spring forks, stand, carrier, in condition; £16, offers.—Perry, 23, St. Martin's Lower Edmonton, N.



# THE MOTOR CYCLE

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August 29th, 1912.

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York. PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.; Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd.; Wellington, Auckland, Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 152, Bay Street, Toronto. SOUTH AFRICA: Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

### Change Speed Gears.

THE variable gear question is to motor cyclists an interesting topic at any time. A few words, therefore, on this subject will be opportune at a period when next year's models are in course of preparation. The position occupied by the gear appears to be unsettled at the moment. Omitting the variable pulley gears, there are three places which the gear can occupy, viz., the rear hub, the counter-shaft, and engine-shaft: the last is almost obsolete, although not by any means mechanically wrong or to be despised. The first type has been popularised for motor cycles by reason of the high class workmanship of two leading firms who make a speciality of hub gears for pedal cycles. For solo work these gears are eminently satisfactory, albeit they must absorb an appreciable amount of power on the lower ratios. For passenger work, as at present made, they are barely strong enough, although we understand that special passenger patterns will be marketed for next year. The counter-shaft reducing gear is probably the best solution for all round passenger and solo work, particularly as it allows a combination of chain and belt (which shows signs of becoming very popular), gear and belt, or all chain transmission. Expanding or variable pulley gears are excellent for solo work, and also for passenger work where no lower ratio than 8 to 1 is required, but a much lower ratio is often essential with the most powerful engines. Again, omitting variable pulleys, three speeds have so far been confined to hub gears with the exception of some T.T. and special models which are not yet standardised.

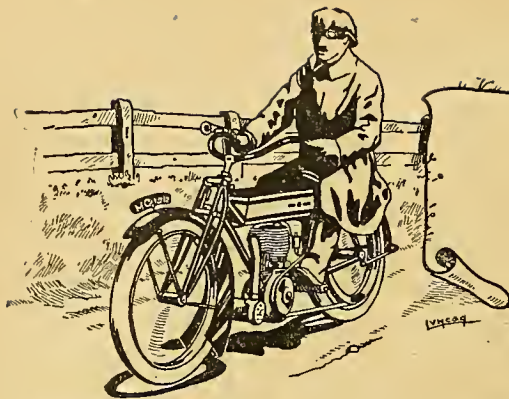
As we observed last week, before a motor cycle can be described as a "go-anywhere" machine it must

be supplied with a really low gear suitable for all emergencies. This is where the advantage of a three-speed gear comes in, for, if the low gear of a two-speed is really an emergency gear, it is too low for the hill where, especially against a wind, the engine just begins to labour on the high gear. The selective clutch gear has an advantage in this case, for, by the change of a sprocket and chain, the low gear can be altered, without disturbing the top ratio, in a very few minutes.

For 1913 we hope to see all standard solo motor cycles provided with not less than two speeds and a friction clutch for starting from a standstill. The clutch should be so designed that it will start the full load anywhere from rest and not slip on hills. Many so-called clutches are misnamed: they do not clutch when they ought to, and some which are quite satisfactory for singles give trouble when called upon to transmit full power with a passenger on abnormal gradients. A properly designed clutch should last a season of, say, 5,000 miles without any renewals, and proper means should be provided quickly to adjust the gear without dismantling it. Most motor cycle gears and clutches should be made larger and stronger. Neatness is desirable, but when this end is too closely followed the parts are apt to be too much reduced in size and strength to enable them to stand up under occasional cases of extreme stress. We are, of course, treating the subject broadly; there are machines already made which embody the above desiderata.

Another matter which goes hand in hand with the change-speed gear question is the weatherproofing of the transmission. No matter whether belt or chain be adopted, it should be efficiently screened from the elements.





## WHAT THE SIX DAYS' TRIALS TAUGHT.

By B. H. DAVIES.

THE principal feature of the 1912 Trials is the absolute annihilation of gradients by the variable gear. The west country, notorious for its blind corners, rough surfaces, and single figure gradients, failed to furnish a single hill which could hope to stop a good rider on a modern machine with a variable gear. In every trial the entry necessarily includes a percentage of weaklings—inferior riders and inferior engines—who by reason of mistakes or temporary derangements would suffer one or more hill-failures in any trial that included a couple of single figure gradients per diem. But the 1912 machines of real excellence and known make stormed up the most notorious ascents of the West with consummate ease and mastery, so endorsing the more convincing verdict registered on the more exacting hills in the Scottish Trials. Porlock stands in a class by itself. On a dry day it is an easy climb for a good rider on a variably-g geared machine who knows what line to take at the two corners, and it has often been cleanly climbed by an amateur at the first attempt. Had the narrow side track been dry on August 17th, probably eighty of the ninety survivors would have made clean ascents with their feet on the rests. But when Porlock is wet it becomes a matter for the rider rather than for the engine, and as it was very wet last Saturday week, sixty men or more came to grief on it. It should be clearly understood that even thus the engines were not in the least blameworthy, with—at the most—a dozen exceptions. In the majority of cases the riders were responsible for the failure.

### Remarkable Pluck and Good Temper.

The officials were eager not to miss an hour of knockabout comedy, and so they insisted on putting the men to a test which may bring discredit upon the machines and the engines unless the Press is able to correct a very false impression. The men evinced remarkable pluck and good temper—only two riders allowed themselves to get fretful—and the fact that two dozen managed to slither up to just above the second bend without falling off shows as good an average of luck and skill as could be expected under such ridiculous circumstances. As a technical test it was comparatively worthless. Two or three small points of technical interest may be elicited by a closer study.

1. Seventeen solo machines got up to just above the second bend without a stoppage, though all the riders steadied with their feet. Of these only two were of more than  $3\frac{1}{2}$  h.p., the vast majority of the big variably geared twins were helpless, which shows

that a lightish machine of medium power is the handiest for trick riding.

2. The machines which were limited by factors of design to ordinary bottom gear ratios practically all failed. A bottom ratio limited to 7 or 8 to 1 is less efficient than a three-speed hub which, in conjunction with an adjustable pulley, can supply a 12 to 1 gear in emergencies. Very few of the men who got up used single figure gears.

3. Certain machines fitted with narrow handle-bars brought far back were helpless in the mire on Porlock, and were noticeably unsteady on the grease along many portions of the route. A wide bar of short reach is advisable for bad going.

4. Only one or two machines were pushed up the hill. The men who failed rode most of the hill, but either pushed or were assisted on the softest patches.

5. The passenger machines were mostly in need of more weight on the back wheel; in fact, only the G.W.K., which has its engine aft, and also had a roped back tyre, seemed quite sure of its driving grip, though the Morgan wheel, with a heavy suit case on the carrier, never completely lost its bite. So far as sidecars are concerned, designers are helpless; the sidecar passenger must lean on sharp corners, and must climb on to the carrier when the outfit tackles a greasy gradient. But cyclecar designers can easily concentrate a little extra weight further aft, and I hope they will assimilate the lesson. I fancy most passenger outfits will carry Parsons chains as a standby in the 1913 trials.



J. S. Holroyd (2½ h.p. twin Motosacoche), who won a gold medal in the Six Days' Trials. Only one hill proved too much for Holroyd's machine, and that was Porlock, but he made up for that mistake by climbing Lynton Hill and gaining the bonus.



**What the Six Days' Trials Taught.—**

In this trial the hill tests served two purposes only, apart from advertisement: they eliminated bad machines and duffer drivers, and they showed that the modern engine will stand phenomenally low gears without overheating. It rests with the A.C.U. to decide what hill-test policy it will adopt next year. Personally I should like to see a limitation of gear ratios: these abnormal gears are not obtainable on standard machines in many instances, and in some cases were adopted as a relief for lost engine tune and power. I think a  $3\frac{1}{2}$  h.p. solo machine ought to be limited to a low gear of, say,  $8\frac{1}{2}$  to 1. Had this regulation been made this year, a few engines only would have conquered all the test hills; by the latitude allowed in respect of gear ratios, inferior engines are artificially made to pose as equal to the best.

**The Secret Checks.**

The secret check system caused the men who had any considerable stoppages to suffer penalties: to

change that they are awkward to change deliberately. Probably the best gear lever position is half way along the tank on the right hand side. The valve lifter can then be operated by the left hand and gear changed with the right.

**Spring Forks.**

Several spring forks designed to embody complex parts at the fork ends gave trouble: some jammed with mud: some sustained excessive wear: and some squeaked painfully. Moving parts are best mounted high out of the mud.

The belt drive came through a week's rain much better than was anticipated. I saw very little slipping or shortening, though every morning a few men tightened their belts soon after leaving the garage. I do not think belts have altered very appreciably. The rain was almost continuous and at times heavy. Most of the men used large belts on large pulleys.

I wonder how far the belt trials are trustworthy. There are persistent rumours to the effect that the



**METHODS OF CORNERING BY THE ARIEL TEAM.**

The picture was taken on the acute bend of Blagdon Hill. It will be seen that though members of one team, all three riders adopted a different method of negotiating the corner. Sargster is inside the bend where the gradient is steepest and the surface loose. Newey has adopted a medium course, while North is on the outside—the best course to steer.

perfect this system the checks should be more numerous. Unfortunately the tedium resulting from a close schedule will gradually eliminate amateur entries.

Minor control details proved rather tiresome: the water-stiffened the carburettor controls of most machines, and put the handle-bar control of dozens of magnetos completely out of action every day. Magnetos are more weather-proof than formerly, but cannot yet be termed literally waterproof. When protected by a separate cover and some insulating caulking at the point where the cable penetrates the end-plate, they gave no trouble.

Many of the men found it awkward to change gear when hurried. It is foolish to fit a gear quadrant under the saddle on either side, and some of the controls are so safeguarded against an accidental

officials failed to safeguard one loop-hole for ingenuity.

I hope that in next year's trials a special marshal will be appointed, whose sole duty shall be to inspect officially-entered belts at frequent intervals.

**Heavy Tyres give Immunity from Punctures.**

Tyres gave noticeably little trouble. I doubt how far this is ascribable to a genuine improvement in the standard light cheap tyre fitted to machines sold in the ordinary way. In previous trials trade entrants have often relied on these light cheap tyres for competition purposes: this year the majority of the machines were fitted with specially heavy covers and punctures were rare. We cannot compel manufacturers to include heavy tyres in their catalogue price: but we can insist on heavy tyres and pay for them as an extra. For a similar reason there was little skidding.



### What the Six Days' Trials Taught.—

The West country is reputed to be second only to Derbyshire in the quality of its grease, but the heavy non-skids kept the machines remarkably steady, and I saw very little sign of skidding except in corner work, where a machine would occasionally complete a turn on a side of the road obviously not contemplated by its driver. Probably a vast portion of the wet surface traversed was not genuinely slippery: but more than once when I temporarily dismounted I found it quite difficult to keep my footing, although the machine had been travelling quite steadily.

The organisation aroused sincere admiration throughout; nothing had been overlooked, and there were no hitches. The event was a model to all secretaries.

### Suggestions for 1913.

So far as the work of the Competitions' Committee is concerned, one might humbly suggest that for next year the number of secret checks should be considerably increased, so that a fifteen minutes' stoppage on any portion of the route should inevitably be penalised. That the notion of piling up 1,000 miles by including several hundred miles of straight level highways be jettisoned in favour of a shorter total mileage limited to severe or tricky going, and that all prudential notions in the matter of hill-climbing be finally discarded.

If a town lying in a mountainous district (*e.g.*, Wales) is selected as the centre of the 1913 trials, and all discoverable hills are included, irrespective of number, gradient, corners, and surface, the evolution of the motor bicycle will be accelerated. If the weather had by chance been uniformly fine this year, the trials would have degenerated into a mere farce. It would not be a bad idea to commence the 1913 trial by a really formidable climb up a severe gradient with goodish surface, and free from trick corners, posting skilled observers every few yards. Any machine which failed on this climb from inherent feebleness should be precluded from continuing. At present inferior machines are allowed to struggle up the hills with assistance from spectators, and finally secure a minor award. The outside public are then led to infer that the machine is in itself

excellent, but that some trivial misfortune has prevented its securing a gold medal. Every experienced rider is keenly aware that engines vary widely in efficiency, and the fault of the present trials is that they do not differentiate sufficiently. They sever the sheep from the goats, no doubt; but they fail to distinguish the sheep from the hybrids.

### Cleanliness.

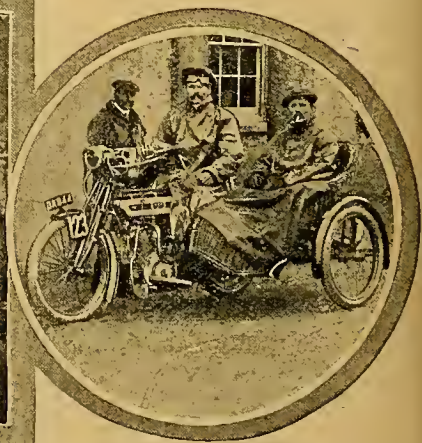
Turning to details, cleanliness ought to be taken into account next year, and ought to be distinguished from a paraffin brush. The mudguarding of certain machines was grossly defective, while only two or three makes of engine retain their oil; but so long as a machine which has been cleaned four times a day is lumped with a machine which has kept itself clean, cleanliness marks are useless.

The policy of awarding "bonus" marks for climbing easy hills and docking penalty marks for failing on difficult hills is obviously illogical. (I use "easy" and "difficult" in a comparative sense.) The fifteen minutes' garage allowance might well be deleted in 1913, leaving all adjustments to be made in running time. The 1912 trials have made one thing perfectly plain, *viz.*, that it is impossible to make the 1913 trials too difficult.

The rule about silence was as farcical as usual. Several machines, in spite of sealed cut-outs, made more noise than many a standard machine creates with its cut-out open. The cut-outs were sealed with very light and flexible wire, and after a day or so most of the riders discovered that by prising the wire with a lever they could open their cut-outs *ad lib.* without breaking the seals. Personally, I am no admirer of silent motor bicycles, and regard them as perils to their owners and to the public. But the A.C.U. should be consistent. If its leaders really value silence, they should at least penalise noise in their own trials. As it is, they only succeed in creating the impression that there is a wide divergence between their secret beliefs and their public professions. Why not adopt the ideals of any gentlemanly rider, leave the cut-outs unsealed, and penalise any undue noise in populous places? The only effect of their present rule is to insure noise all the time.



A Triumph rider on the 1 in 4½ section of Byber's Hill, a difficult ascent included in Thursday's secret route.

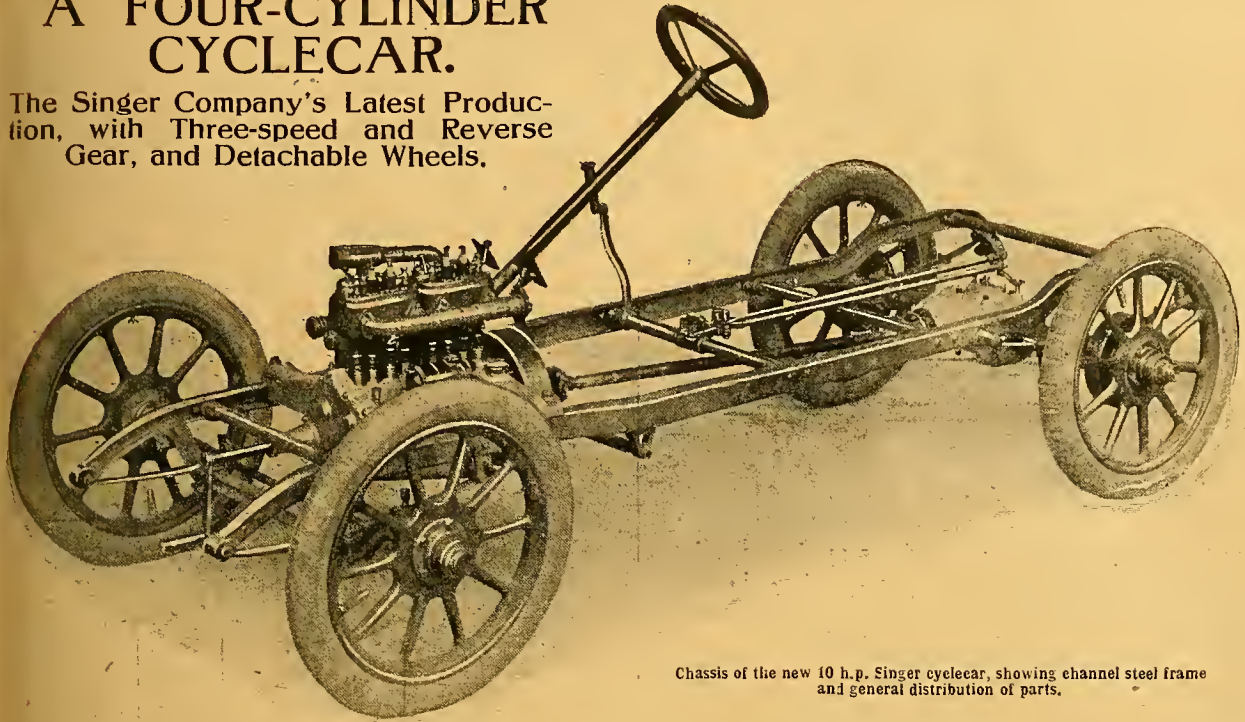


A. J. Stevens (5 h.p. A.J.S. sidecar) in a check. He was one of the gold-medal winners.



## A FOUR-CYLINDER CYCLECAR.

The Singer Company's Latest Production, with Three-speed and Reverse Gear, and Detachable Wheels.



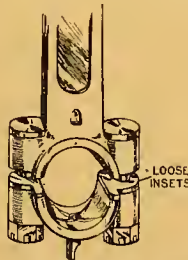
Chassis of the new 10 h.p. Singer cyclecar, showing channel steel frame and general distribution of parts.

**T**HIS week we are able to describe and illustrate what is bound to create a great amount of interest both in the car and motor cycle world. It is an open secret that the Singer Co., Ltd., Coventry, has for months studied the question of a light four-wheeled passenger machine, and it was only a few weeks ago that we illustrated their first model—a double engined vehicle. Not finding this so comfortable and roadworthy as the Singer Company's productions must be before they are marketed, an entirely new vehicle was put in hand on more ambitious lines, and the outcome is the four-cylinder three-speed four-wheeler under discussion. It is a light car, but it comes within the cyclecar definition, weighing approximately 7 cwts., and having a cubical capacity of 1,096 c.c.

Though possessing no real departures so far as car design is concerned, the Singer cyclecar has embodied in its design the best car practice, and a cursory glance over the chassis is sufficient to prove

that no single part has been scamped for cheapness.

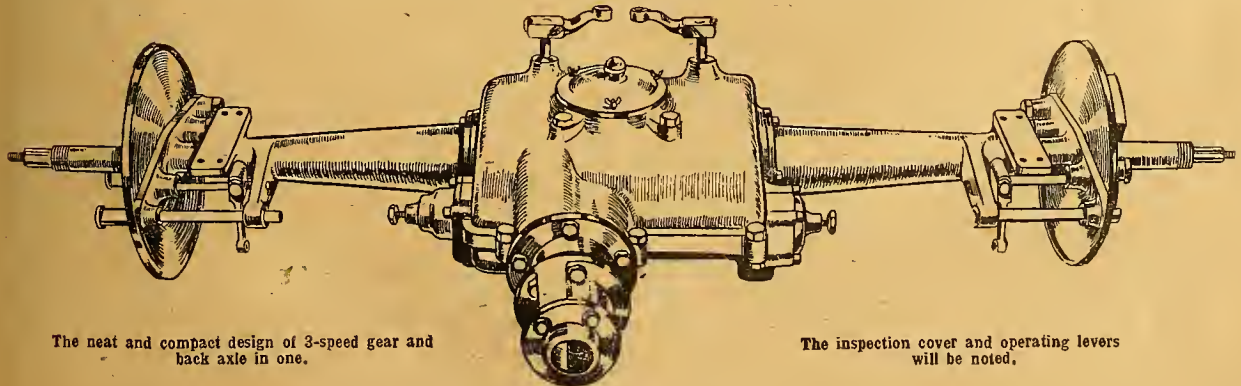
It is safe to say that no attempt has been made hitherto to incorporate such desirable features in a cyclecar as are to be found on the latest Singer.



Design of big end bearing showing brass insets to take up wear, oil channels, and big end bolts with flat sides to prevent movement.

### Engine Details.

Commencing with the power unit, the engine is a 10 h.p. four-cylinder, measuring 63 x 88 mm. bore and stroke. Each pair of cylinders are cast in one piece, and to save overall length the ordinary valve cap has been dispensed with. In its stead a cover plate for each pair of inlet and exhaust valves is used, tapped for the sparking plug and compression tap. The mechanically operated valves are on one side and operated by a gear-driven camshaft on which the cams are formed solid. Adjustable tappets are used with fibre insets to reduce noise, and rollers at the foot. Thermo-syphon cooling is relied upon in conjunction with a neat-looking brass-finished radiator following usual Singer design. The

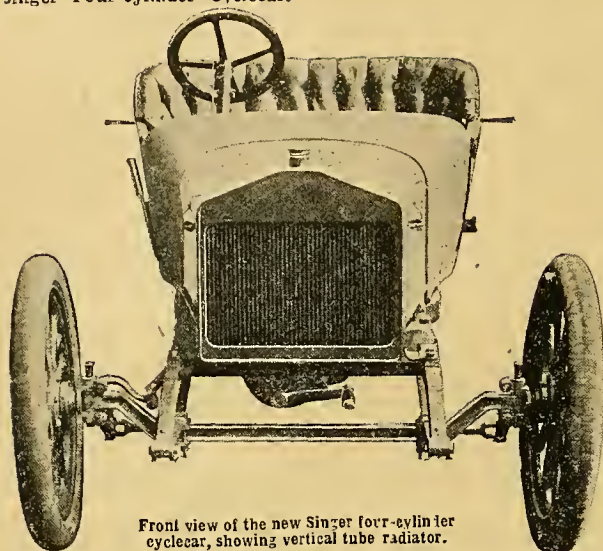


The neat and compact design of 3-speed gear and back axle in one.

The inspection cover and operating levers will be noted.



Singer Four-cylinder Cyclecar.



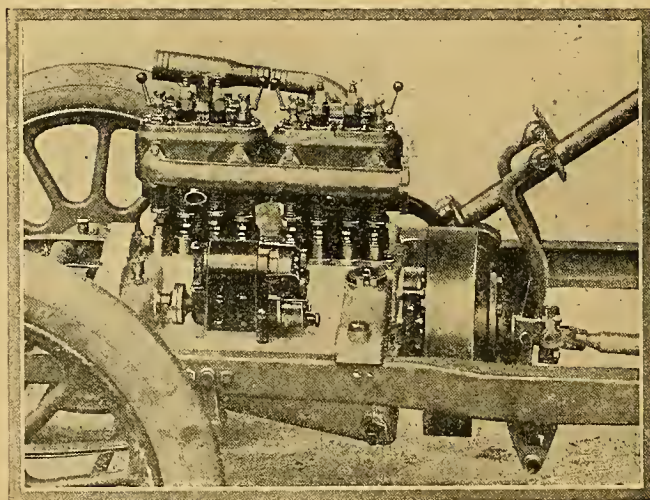
Front view of the new Singer four-cylinder cyclecar, showing vertical tube radiator.

important question of lubrication has received special attention, and at the rear of the crank case a pump forces oil to the three main crank case bearings and also keeps the troughs into which the big ends dip plentifully supplied with oil. Any overflow passes to the rear of the base chamber through a filter and is pumped round again. The clutch is of the leather cone type. Extremely fine adjustment of the magneto is provided by means of two serrated plates, and in a few moments one can alter the timing to the mere extent of one-ninetieth of a circle if desired.

#### The Gear Box and Back Axle.

The three-speed gear box, which is operated by a gate change, is mounted upon the back axle casing, and forms a very compact unit. One can appreciate the care in design when it is mentioned that there are no less than thirteen ball bearings and one thrust bearing in the gear box and back axle alone. The gear ratios are  $4\frac{1}{8}$ ,  $6\frac{1}{2}$ , and 10 to 1, which seem to be an ideal selection.

The front axle is dropped to enable a low and racing-looking vehicle. The channel-steel frame



10 h.p. Singer four-cylinder cyclecar engine, showing valves all on one side and position of magnets.

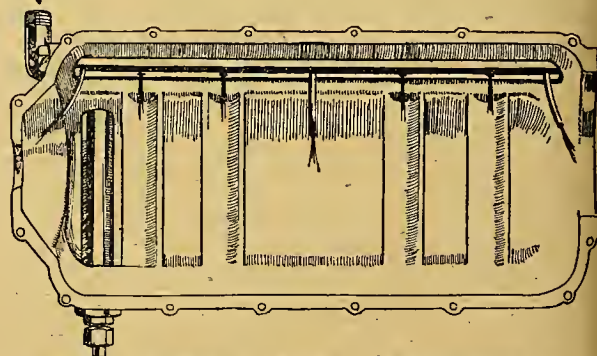
appears amply strong for its work, while the little car should be extremely comfortable with four leaf springs at the front and five at the rear.

The rear road wheels are carried on sleeves mounted over the driving axle, thus relieving the latter of strain, whilst the brakes are of the internal expanding type.

The wheelbase is 7ft. and the track 3ft. 6in.

A beautifully upholstered two-seated body with high side doors and scuttle dash in combination with a low raked steering pillar are commendable points of the design. Altogether the Singer cyclecar is cleanly designed and has received careful thought and consideration from the smallest nut and bolt. It has 700 x 80 mm. Dunlop tyres on Sankey detachable steel wheels, including a spare wheel. A hood and screen complete the equipment of what is undoubtedly the most ambitious cyclecar we have been privileged to examine to date. Our next reference to it will relate to its performances on the road.

PUMP FEED



Base of crank chamber showing force feed oiling arrangement and troughs into which the big end bearings dip.

#### A PETROL-PARAFFIN CARBURETTER.

A new design carburetter for the purpose of utilising paraffin as a motive power for motor cycles has been introduced by C. Binks, Ltd., of Phoenix Works, Church Street, Eccles, Manchester. The fuel tank is intended to be made in two compartments, 75% of the space to carry paraffin and the remaining 25% petrol. The carburetter has two float chambers and two jets. On slightly opening the throttle the smaller of the two jets is uncovered, through which petrol is sprayed for starting and slow running purposes. A further motion of the throttle uncovers the larger or paraffin jet, and the engine begins to run on almost pure paraffin as the suction on the petrol jet is automatically decreased. On easing up again the paraffin jet is cut out and petrol is used for low speeds. This device has met with considerable success in launch work, and needs no hot air pipes or jacketing such as is usual with most paraffin carburetters.

#### A COLLISION AND THE RESULT.

The marks deducted from George Brough's scoring sheet for a loose steering head were cancelled by the A.C.U. judges after it had been explained that the looseness was entirely due to the collision which Brough sustained with a van nearing the finish of the trial. Brough could not leave Taunton last week owing to the injury he sustained to his leg, but is now home at Nottingham again.



# Occasional Comments *by "Izion"*



## Dummy Belt Rims.

Any rider afflicted with a machine possessing a separately spoked belt rim on one side of his back wheel (due to a clutch or gear hub) and a dummy belt rim supplied for braking purposes on the other side is struck with pangs when he sustains his first puncture. He attacks the valve first from one and then from the other, and makes a mental note to buy a pair of pliers with corkscrew handles at the next garage.

Then he prepares his levers, and attacks the bead, only to discover that as soon as his levers assume an angle at which the bead begins to lift they foul one or other of the belt rims. Finally he dissolves into tears by the roadside, and buys a single-gear racing machine. Will the wisecracks who design these double-rimmed machines please remember that we still use tyres, and that whatever the tyre manufacturers' advertisements may lead an innocent draughtsman to suppose, tyres still puncture, and when new, cannot be removed without leverage.

Efficient braking may be obtained with a belt rim of very small diameter, provided the leverage at the brake-shoe is good, and the material of the shoe suitable for its purpose. A wide brake rim of small diameter would be better than a narrow rim of great diameter, taking all things into consideration. I am sorry to notice that some manufacturers, principally chain drive enthusiasts, still retain external band brakes. They should have heard the free comments of a band of riders I met in Coventry after the Six Days' Trials; as soon as real work was demanded from this type of brake, it struck, and all the smearing nostrum in the world failed to restore its lost grip.

## By-products of the Variable Gear Boom.

It will be interesting to watch the by-products resulting from the variable gear boom. The really expert and fastidious driver simply slings a three-speed hub on a standard machine, and drives as easily and as prettily as ever. But some of the horrible sights and sounds which greet my offended eyes and ears as I travel about lead me to prophesy that variable gears will cause sundry modifications of existing design.

For instance, there is the clumsy driver who always runs his engine much too fast when he is sitting astraddle with the clutch out. He sins because he is afraid of stopping his engine if he throttles it down delicately. For him we must introduce the throttle which does not shut off all the gas, but allows the engine to tick softly over when the throttle is pushed back to its extreme: and that will necessitate a switch, for we cannot make the power of stopping an engine dependent on the solitary wire of the valve lifter.

Then there is the duffer who muddles his mixture whenever he changes gear; for him the automatic carburettor will become essential, and it will not greatly matter if, as some croakers allege, these carburettors are a shade less efficient than the two-lever type; for has he not a bottom gear of about 10 to 1 in reserve

for grave emergencies? Finally, will not the weight of our machines and the dimensions of our engines be steadily reduced?

In every big trial we see machines with 350 c.c. engines doing all that is necessary. Much of the continued popularity of the 500 c.c. engine is due to the fact that some people cannot afford variable gears, and those who can are still obsessed by the old tradition, now happily obsolete, that nothing under 500 c.c. is effective for touring purposes.

## Combined Near Side Lamp for Sidecars.

A correspondent remarks with some justice that a sidecar requires a red rear lamp, and that a motor cycle is not designed to carry an arsenal of lamps. He clamours for a near side lamp, with a double reflector and two burners, desiring to carry a lamp on the outside of his chair, which shall throw a white light forward and red light backward. Surely the red light ought to be on the off side of the machine, which explains why no maker has supplied his wants.

Personally, I am well content in sidecar work to employ two red reflex mirrors—one on the tail of the motor cycle carrier (off side) and the other at the back of the sidecar on the near side. If my correspondent is dissatisfied with reflex mirrors, I think he has tried an inferior brand; some of these mirrors hardly possess any real reflecting powers at all, but the original brand, and possibly one or two others, serve all rear warning needs quite efficiently, and reflect light at a considerable distance.



Mrs. Carter (2½ h.p. Levis, the latest recruit to the ranks of lady motor cyclists in Derbyshire.



# THE WEAR OF BEARINGS.

## IMPORTANCE OF EFFICIENT LUBRICATION.

**A** CORRESPONDENT has recently called attention again to this pressing problem, but the real crux of the matter he does not touch. This, to my mind, is summed up in the one word "lubrication."

Modern engines have bearings designed for very heavy loads, *e.g.*, the load on the gudgeon pin is in the neighbourhood of 3,000 lbs. per square inch, but this high bearing pressure is frequently found on large gas engines, particularly large Continental engines, and is not at all peculiar to the motor cycle engine alone. Now these large stationary engines are equipped with very thorough systems of forced lubrication, and the result is that "bearing wear" is no more trouble than on a slow speed steam engine with comparatively low bearing pressures of about 200 lbs. per square inch. Consider also the motor car engine, this is vastly better in respect to bearing wear than the average motor cycle engine, and here again the reason is found in a better system of lubrication, although much room for improvement still exists.

Forced lubrication is slowly coming to the front, and this year has seen several new engines employing it in one form or another, *e.g.*, the Veloce or W.D.

The advantages of forced lubrication were very apparent when I recently saw one of the first-mentioned engines dismantled; although the engine had done much work, and should, if of ordinary design, have been exhibiting signs of bearing wear, the marks of the tools were still plainly visible, and the bearings were not properly worn in. Incidentally, carbon deposit was also strangely absent, and the cool running of the engine had to be experienced to be believed.

Here, then, is the problem already solved, forced lubrication under a pressure of 10 lbs. per square inch is employed, and bearing wear vanishes to a negligible

amount, bringing also other advantages, with which however, we are not at present concerned.

Another method, the one advocated by the correspondent previously mentioned, is the lightening of the load to suit the bearing. This, to me, savours of bad practice—we are starting designing from the wrong end, since we should design the bearing to suit the load, not the load to suit the bearing. However, I agree for various reasons that light reciprocating parts are desirable.

Steel pistons are best made by the welding process, and I have seen many fine examples of pistons so constructed, an ordinary 85 mm. piston weighing about 14 ozs. with the gudgeon pin and rings. This process is much cheaper than machining from the solid, and good results are assured since the distortion of pistons so built has so far not given trouble, although many hundreds are in use. The welded steel connecting rods recently brought out ought also to be very satisfactory, but as far as Duralumin is concerned, I am not very hopeful. I was recently present at a test of a beam built of this material and it certainly is very strong and light, but the beam failed at a much lower stress than for which it was designed, due probably to fatigue. I am not allowed to say more as the tests were being conducted on behalf of the Admiralty.

Aluminium, however, and its alloys seem to suffer badly from internal decay or "fatigue," as it is commonly called, and I am under the impression that a connecting rod of Duralumin would not give satisfaction for long, since the reversals of stress which take place in a connecting rod would very soon produce "fatigue." In conclusion, let us lighten reciprocating parts as much as possible and this will certainly improve matters, but better still, let us lubricate our engines, not merely fling oil on them when we happen to think of it.

A.G.D.C.

## MOTOR CYCLES FOR BUSINESS PURPOSES.

**I**N a recent issue we referred to the important test case decided at Barnsley respecting motor cycle taxation exemptions. A Mr. T. W. Taylor, of Skelmanthorpe, who for several years rode a motor cycle without paying an inland revenue licence, claimed exemption on the grounds that he used his machine solely for the purpose of business. He had his name and address painted on the machine in letters of the regulation size, and the inland revenue officials allowed the exemption. When the local taxation authorities took over the collection of the taxes they immediately claimed payment. The matter was laid before the Auto Cycle Union, who decided to defend, but the case was decided against Mr. Taylor, the bench stating that the defendant's motor cycle had not been constructed and adapted solely for the purpose of business. He was fined 10s. and costs. The Auto Cycle Union considered the question of appealing against this decision, but, acting upon the advice of the local solicitor, Mr. S. Neuman, of Bradford, who says that there is no probability of success if an appeal were lodged, the Auto Cycle Union has decided that they cannot go any further in

the matter. It seems to our mind a very great pity that the decision of a local bench of magistrates should be regarded as final in an important case of this kind.

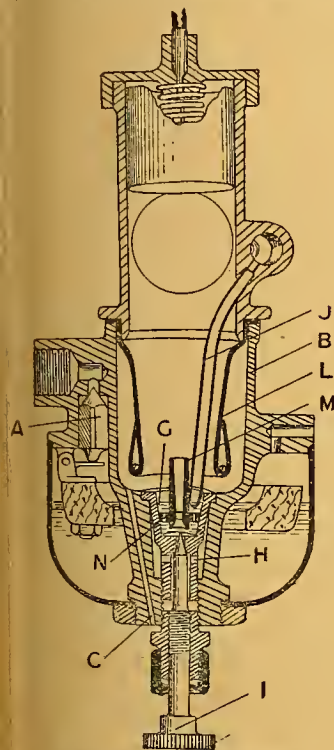


THE PASSENGER TRIAL IN YORKSHIRE.  
Group of competitors at the Stamford Bridge check on the first day's run.



## A New Automatic Carburetter.

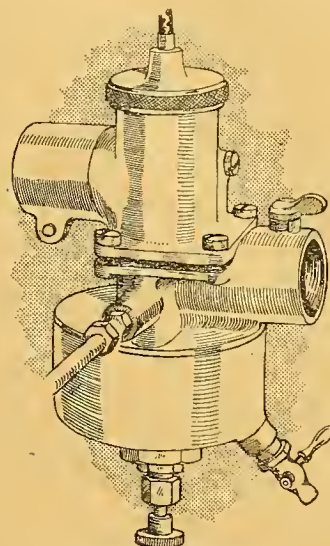
**A** NOVEL automatic carburetter on the lines of those generally used on American motor cycles is shortly to be produced by Holley Bros. Co., 46, Northumberland Road, Coventry. The operation of the device can best be understood by reference to the sketches reproduced herewith.



Sectional view of Holley Carburetter.

The float chamber surrounds the jet, petrol being fed in from the top, and the flow is controlled by a hinged cork float which actuates the needle A. The petrol passes through a hole (not shown) in the main casting B, and thence through the holes H to the jet. This jet is adjustable by the needle I, and acts as a control on the flow of petrol only, as when the engine is stopped or running very slowly the petrol level is considerably higher. For starting purposes almost

adjusted so that the engine will just revolve slowly when the throttle is quite shut. As soon as the throttle barrel is raised air begins to pass through the intake port (shown in sketch), the size of which may be adjusted by a small lever. It then passes downwards round the outside of the choke tube L, and then through the choke tube to the engine, having picked up a supply of petrol at the jet. When the engine picks up speed the level of the petrol in the well rapidly decreases until, at high speeds, it is drawn direct from the jet. When the level in G gets below the bottom of the vaporising tube M, air is free to pass downwards through the small holes N, and thus mingling with the petrol prevents too strong a mixture at high engine revolutions. On slowing down the level again rises in the well, thus giving a strong mixture for slow pulling. A small drain pipe C is formed in the main casting to remove any surplus petrol, and a tap is fitted by means of which petrol or impurities may be drained from the float chamber. The throttle is of the barrel type, controlled by a Bowden wire. We hope



The complete Carburetter.

pure petrol is sucked from the well G through the pipe J and through a small adjustable orifice on the engine side of the throttle. This orifice should be

adjusted so that the engine will just revolve slowly when the throttle is quite shut. As soon as the throttle barrel is raised air begins to pass through the intake port (shown in sketch), the size of which may be adjusted by a small lever. It then passes downwards round the outside of the choke tube L, and then through the choke tube to the engine, having picked up a supply of petrol at the jet. When the engine picks up speed the level of the petrol in the well rapidly decreases until, at high speeds, it is drawn direct from the jet. When the level in G gets below the bottom of the vaporising tube M, air is free to pass downwards through the small holes N, and thus mingling with the petrol prevents too strong a mixture at high engine revolutions. On slowing down the level again rises in the well, thus giving a strong mixture for slow pulling. A small drain pipe C is formed in the main casting to remove any surplus petrol, and a tap is fitted by means of which petrol or impurities may be drained from the float chamber. The throttle is of the barrel type, controlled by a Bowden wire. We hope shortly to try the device on the road.

## THE SEDGER FOUR-SPEED GEAR.

**T**HE arrangement consists essentially of a sun wheel O, which is representative of a pinion fixed to the engine-shaft, this driving the internally-toothed annulus H by means of gear trains, of which there are four, each coming into action in turn as required, according to the relative position of the gear box K with reference to the sun wheel O.

The gear trains referred to above consist of a train of wheels mounted on bearings rigidly fixed to the box K, the method by which any particular train of gears is brought into gear with the sun wheel O being as follows:

The box K is carried on a boss A projecting from a specially designed carriage C, which is rigidly fixed to the crank case of the engine, this boss being eccentrically arranged with reference to the engine driving-shaft which carries the sun wheel O.

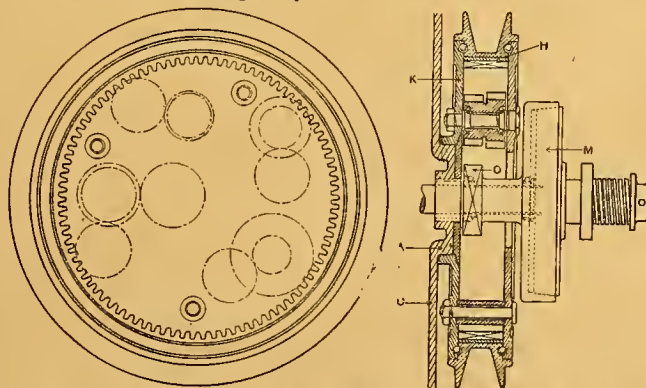
This eccentric boss A forms a bearing about which the whole system of gear trains can be revolved, the amount of eccentricity being adjusted so as to bring about during a complete revolution the required number of gear changes.

It will thus be seen that as the box K is rotated concentrically about the boss A different gear trains will be brought into operation, the box K being locked in any required position corresponding to a particular gear ratio.

The actual operation of changing gear is performed in the following manner: The cone clutch M connecting up the engine-shaft to the driving pinion O is first released, the box K is then rotated about the boss A by means of a lever until the particular gear ratio is obtained, the clutch is then closed and the drive thereby transmitted to the belt

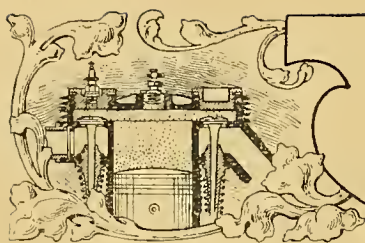
rim H, which drives direct on to the pulley of the back wheel.

The gear is designed to obtain four ratios—10 to 1, 8 to 1, 6 to 1, and 4 to 1 (when the belt rim is twice the diameter of the pulley)—with a gear box weighing only about 15 lbs. and having an external diameter of 8 in.; also, since the box moves concentrically on the boss A, the belt tension will remain constant for all gears, the extra weight being located near the centre of gravity.

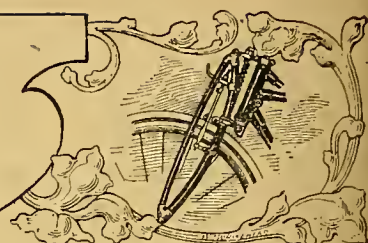


Another slightly different design of this gear provides side meshing of gears and stationary position of gears not in use.





## A WEEK IN WATERPROOFS.



### AN ACCOUNT OF THE SIX DAYS' TRIALS FROM A RIDER'S POINT OF VIEW.

**I** MAKE a rule of riding to the venue of a trial, as nothing else tells one so certainly that all the workshop adjustments are top hole; a long journey would only mean extra carbon deposits towards the end of the thousand miles, but forty or fifty miles of hilly road provide a final test of the tuning. My own adjustments included very slow timing of the magneto, lowering of the compression ratio, a carburettor setting which gave a good head of gas at low engine speeds, etc., etc., and the last road test showed that the machine could do 55 m.p.h. on the flat (which meant high r.p.m. on the test hills), and that it could climb single figure gradients on bottom gear as slowly as I could balance or steer. Incidentally my gear ratios were 4.5, 6.3, and 9, which took me up all the test hills with power in reserve: I could have got a low gear of 13 to 1 by adjusting the engine pulley down to its minimum diameter, but I never touched either the pulley or the belt throughout the week, and in the journey home from Taunton the machine did 57 m.p.h., i.e., was 2 m.p.h. faster after the trial than it was before it.

Reaching Taunton on the Saturday, we found the city absolutely motor mad: even the telegraph boys were practising "leaning out" round all the corners. It was a great comfort to find a capacious garage with a clean floor: in some previous trials we have had to store our machines in dirty stables, and have been so crowded that the morning adjustments were most uncomfortable, and in case of rain we have often been wet before the start. This year Mr. Loughborough's starting arrangements were so admirably spaced and timed that there were seldom more than twenty riders at work simultaneously in the garage after breakfast, and even if we had been packed into a quarter of the actual space provided there would have been neither crowding nor confusion. In fact, the entire organisation from A to Z was perfectly magnificent, and the new secretary's *début* was a stupendous triumph.

#### Monday. Over Dartmoor in the Wet.

Monday's run was to have been a picnic, but the clerk of the weather intervened: and we were very damp Dicks indeed when we reached Taunton at night. There were no gradients capable of teasing a three-speeder, and the surface on the open roads was too hard and gritty to be really slippery. The terrors of West Country grease have been exaggerated: I was using covers with very shallow longitudinal ribs, which wore right off in the 1,000 miles, and I only felt a slip twice, in each case on a tramline. Our main discomforts on Monday were negotiating slimy streets, especially from Torquay to Paignton, and facing the rain across Dartmoor, which lashed our faces like volleys of duck shot, thanks to the raging gale at its

back. Many of the alleged "storm-proof" garments leaked like sieves, and the oilskin merchants did a roaring trade. I was one of the very few men who kept dry, and I recommend my outfit to genuine storm-pluggers.

#### A Rainproof Outfit.

It consists of a pair of separate oilskin leggings, which stop short of the waist; they are more genuinely waterproof than the best paramatta, and their low cut eliminates ventilation troubles. My feet are protected by storm goloshes, which are indistinguishable from patent leather boots in appearance, and are instantaneously cleanable (waders look hideous, cause perspiration, and are awkward to get on and off). After trying expensive jackets of every known material, and finding them all porous in prolonged rain, irrespective of their cost, I have adopted a good oilskin coat, of the light non-sticky type. Oilskin specialists stock the higher-priced coats in grey, fawn, green, and brown, so that one is not limited to the hideous blacks and yellows. I am most proud of my head gear; a cap lets runnels of water flow freely down one's neck; the tail of a sou'-wester "lifts" in the wind like the planes of a Blériot, so I use a close-fitting Flixson-cloth helmet which comes down on to the shoulders and round under the chin, its only orifice being an oval face-hole. Not a drop of water penetrated my armour all week, and its total cost was 33s. complete.

The "secret check" system is more gratifying to the public than to the competitors. It is very tedious to ride 1,000 miles with one eye on a watch and the other on the odometer, but there is no simpler method of insuring that trouble shall incur a penalty. In all previous trials I was normally thirty minutes ahead of schedule time, and could face an awkward repair without risking the loss of a single mark. In this trial I was normally dead on time, and it was always questionable whether even a simple puncture might not result in a penalty. It depended on how close ahead the next secret check might be. "Blinding" has been automatically eliminated, except in those rare cases when a man is fighting to avoid disqualification by finishing a day's run not more than two hours late.

#### Tuesday. The Bad Roads of North Devon.

Tuesday was a formidable day. We had our first taste of the badly kept roads of North Devon, and sampled its gradients. Several men had to dismount and gallop alongside out of Parracombe village—the hill took us by surprise, and the corner at the foot was greasy. I was busy wondering whether I had better try a lower gear than 9 for Beggar's Roost. But my engine felt very full of ginger that morning.



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Suitable for all climates.

Suitable for  
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Tube, No. 2 Qual.  
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Tube Lr 36.  
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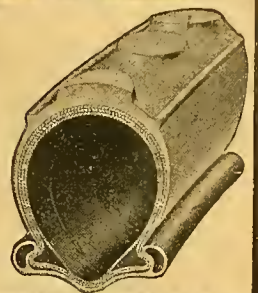
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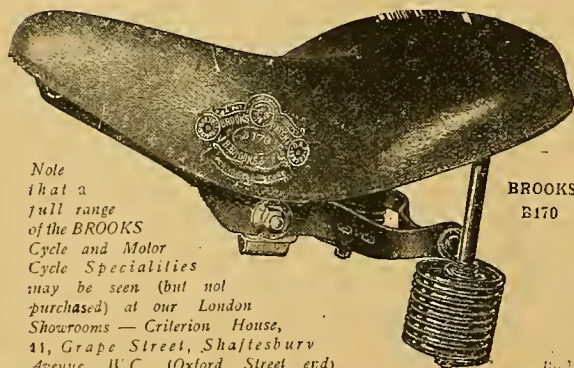
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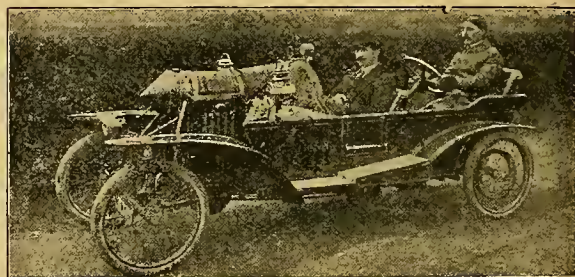
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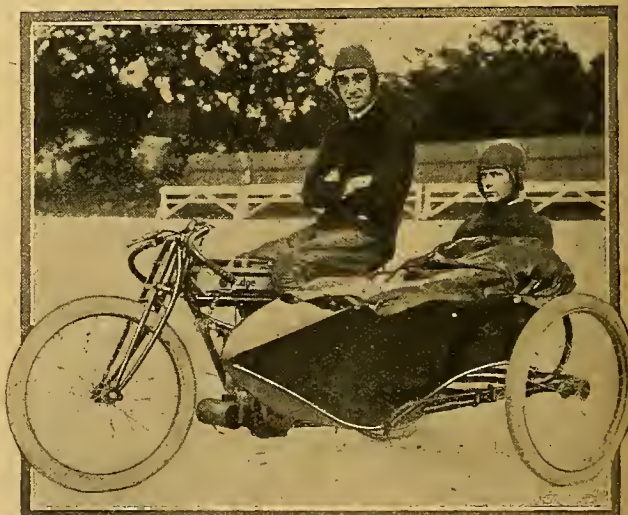
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**A Week in Waterproofs.—**

and when the hill hove in sight I could see there were no obstructive corners. I had read Spencer's invaluable article in *The Motor Cycle* of June 27th, and knew I had to hug the wrong side all the way up. So I tackled it on the run with a hot engine geared 9 to 1, and yelled up, taking only one precaution, which I invariably observed on all test hills, viz., not to follow closely on the heels of another rider who might stick and baulk me. It was shocking to hear of so many failures, for the grade is only fractionally worse than Sutton Bank (1 in 3.33 as against 1 in 3.96). I think some of them made driving blunders due to brief acquaintance with their machines. I know of two men who fitted three-speed hubs specially for the trials, and when they slammed the lever across to bottom gear notch for the Roost, the hub remained on middle gear, as often happens if the gears are short of oil or if the delicate control is a shade out of adjustment. So they promptly conked out in blissful ignorance of the fact that a touch at the valve lifter would have snicked the gear home. The one silly mistake made by the judges was to make Beggars Roost and Lynmouth hills "bonus" climbs (twenty-five marks for success and no penalty for failure) and to make Porlock a fifty mark penalty climb, for Porlock—in the condition we struck it—was twenty times more arduous than either of the bonus climbs.

**An Inspection of Porlock and Lynton.**

Running into Lynmouth for lunch, we all walked off to survey Lynton Hill, which had to be faced on Saturday, and we found Spencer's advice quite correct. It is an easy climb when you know it, but a stranger would probably fail on his first attempt, even if he used an 8 h.p. engine on a 10 to 1 gear. Countisbury came immediately after lunch, and was listed as a "slow climb," but we were at liberty to use our bottom gears and slip our clutches; the rumour about taking it on top gear was nonsense. It is a simple climb for a single speeder when it is dry, 150 yards of 1 in 6 round the easy curve at the bottom is its only difficulty, and except in wet weather there is always a strip of good going 18 in. wide on the wrong side. Not knowing the hill I thought it wise to leave the crawling prize to others, and popped up comfortably at 10 m.p.h., changing on to middle gear above the Tors Hotel garage. I took special note of Porlock Hill as we dropped down it, for it was another new hill, and we had to tackle it with carbonised engines on Saturday morning. Some of the astute trade riders turned round at the bottom and made trial ascents, as there were no officials about, but their cunning did not profit them, for Porlock on Tuesday dry and Porlock on Saturday wet were as different as cheese and rice pudding. After this we had a soft run home.

**Wednesday. An Easy Run in Gloucestershire.**

Wednesday was a tolerably easy day in spite of much heavy rain. The hill-climbs, Cothelstone, Cheddar, Wootton, Scot's Quarry, and Birdlip, brought very few men off middle gear, and burdened only a handful of weaklings with penalties. In fact only a combination of bad corner, bad gradient, and bad surface can tease a modern three-speeder, and as a consequence the hill-climbing element of a trial has

lost most of its sporting interest. It was very foolish of the organisers to "observe." The yard at the top of Birdlip looked like an Olympia Show—I have never seen so many motor cyclist spectators gathered together. One brought a very curious sidecar which, as somebody said, was "trying to look like a vegetable marrow."

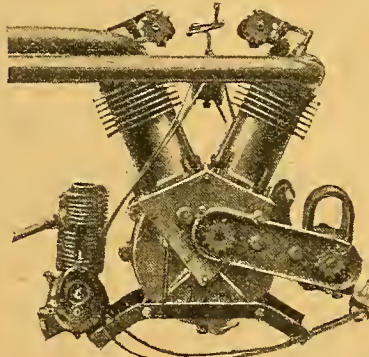
**Thursday. The Secret Route.**

In Taunton everybody was talking with bated breath of Thursday's secret route; to hear the croakers one would fancy we should be set to climb trees and ford rivers. Some of the trade men had previously explored the side tracks in the neighbourhood, and they assured us there was no cause for alarm. The climbing shrank to a very few patches of single figure gradients in narrow lanes, and the water splashes dwindled to a couple of tiny trickles across the road. It was an interesting day, nevertheless, for the hedges and corners kept us permanently on the *qui vive*—one never knew what was coming. I smelt a rat whenever I momentarily found myself on a good road with a range of hills anywhere handy, knowing it was heavy odds on a double V corner inside a mile, followed by a greasy lane ascending tortuously. However, the hills were all "potty" (except Byber's) and I took them easily on middle gear.

**A Surprise Hill.**

Byber's was most ingeniously planned. Our watchfulness had been lulled by twelve miles of decent highway, the route card said "Taunton 85 miles," the speedometer trip said "75 miles," and the milestone said "Taunton 10." The obvious deduction was that we were to amble gently straight down the main road into lunch, with no more twists or thrills.

Four of us swung round an easy curve at 30 m.p.h. when suddenly an arrow made us turn V-wise round a most awkward corner. Great was the squeaking of brakes and crackling of oaths. The presence of an official concealed inside the corner showed that a dismount spelt a penalty, and simultaneously we sighted a huge crowd almost vertically overhead massed in that arc formation which shrieks the information "1 in 5 hairpin" to an experienced competition man. Somehow or other the clump of us bundled up the corkscrew to discover some real gradient on a stony surface that was unsuccessfully trying to be genuinely Scotch. I clambered up after an awkward wrestle with my gear lever. This narrow squeak for 50 marks taught me a lesson, and ever afterwards I changed down early when a bad hill was anticipated. The afternoon's run was free from the awful grease which had bothered us all morning, and simply bristled with little hills, though none of them could be



A 7 h.p. J.A.P. engine with several novel and original devices to gain extra speed which F. H. Arnott is tuning up for an attempt to break the Brooklands short distance records.



### A Week in Waterproofs.—

termed difficult. I was surprised more use was not made of the Dartmoor and North Devon by-roads, which are distinctly more severe than any in the immediate neighbourhood of Taunton.

### Friday. Less Rain and Easy Roads.

Friday was pure baths—150 miles of undulating main road, with only one footling little slow climb to spice it. It gave us a rest in preparation for the terrors of Lynton and Porlock on Saturday, and served to show off our machines to the public in yet another district. Moreover, there was not as much rain as usual. In the evening we all got very nervous. A pressman who was spending the night in Porlock village telephoned that rain had fallen steadily all day, and that the famous hill was in a shocking condition. Some sixty amateur motor cyclists had attempted it during the day, and only two had got up, for a deep sea of red mud extended practically across the road at the second corner, and covered it from hedge to hedge higher up. Lynton Hill would, of course, be equally difficult, and we had to rise at 4 a.m. and face these perils on empty stomachs, for who can eat heartily at sunrise?

### Saturday. The Grand Finale.

Some of the men put their gears right down to 12 and 13 to 1, others contemptuously kept their pulleys up. I decided on a 9 to 1 gear out of policy, not conceit, for the eight miles non-stop prior to the hill would not be good for the engine on a  $6\frac{1}{2}$  gear. Down the short hill into Porlock most people cooled their engines by coasting on low gear, so getting as much as 500 idle revolutions, and tackling the climb with chilled cylinders. A little jockeying for positions ensued—nobody wanted to ascend behind a clump and get baulked—and then up we went. On the initial stages, which are easy and have a comparatively good surface, I kept my throttle nearly shut. When the first bend loomed up it was churned into a quagmire of seething red mud, varying from 4in. to 12in. deep, and I took it wide, where in happier days the smooth hard strip is wont to be found. Whether there was a better track on the other side I don't know.

### I Slither up Porlock.

Both wheels were sliding violently in all directions, and the back wheel would occasionally sink into a deep patch and spin uselessly for a moment until the throttle was shut, when it would bite suddenly and tempt the engine to conk out unless the carburetter levers were hastily reset. By this time all hope of a technically "clean ascent" with feet on the rests was gone. Our feet were all trailing in the claret-coloured mire, steadying our machines now on this side, now on that, for the side of the road was banked gutterwards, and the centre was so ploughed up as to be unrideable. The sides of the hill were littered with machines that had conked out, and were going up

in penny numbers. It was a grotesque burlesque of a hill-climb, for nobody was short of engine power, but nobody could steer or balance properly. Somehow or other I slithered up to the second bend, where the road vanished suddenly to the left, and a huge crowd of spectators were consumed with laughter. Cutting across the crook of the bend I espied on the left a steep heather bank, on the right an indescribably deep ocean of red mire, and in between them a narrow V-section rut full of red grease. By a gorgeous fluke I got my front wheel heading for the rut, and slid up it, grade apparently 1 in 4.

### And Just Miss a Boulder.

Suddenly in the centre of the rut there loomed up a beetle-toothed boulder a foot high. The front wheel missed it by an inch, and giving it a frightful kick with my left foot I just yawed the machine wide of it and scraped up. Further up, in company with



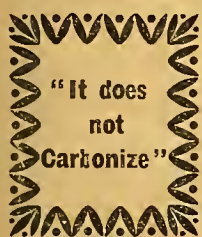
A group of motor cyclists attached to the South Midland Royal Engineers, at the camp on Salisbury Plain.

many others, I turned completely round in a deep swamp of red mud where the road was practically level, and tried to re-descend the hill. Everybody who reached the check at the corner of the toll-road up to time was unfeignedly glad. I was relieved to hear I had not been abnormally clumsy, for everybody had to trail feet, while the big twins proved less steerable than the singles.

Dropping swiftly into Lynmouth through the white fog banks and driving rain, we found a far more practicable climb awaiting us. Right up this hill there is a well-beaten track 18in. wide on the wrong side, and though very greasy it was not deep in mud or unduly soft. My back wheel never spun on it, but as the tread was practically smooth, I was unhappy about side swerves, especially with one's right hand knuckles practically scraping the rock wall all the way up.

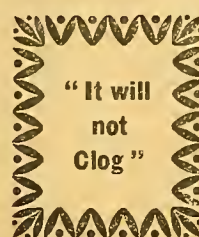
We were all unfeignedly glad when this wet and weary week came to an end. Porlock in the grease will long remain in our memories as the worst single test to which motor cycles have ever been subjected, but otherwise—in spite of the rain—the west country roads are, after all, only child's play compared to the Scottish Trials.





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W. B. Little on a Premier.  
S. Sawyer on a Premier.  
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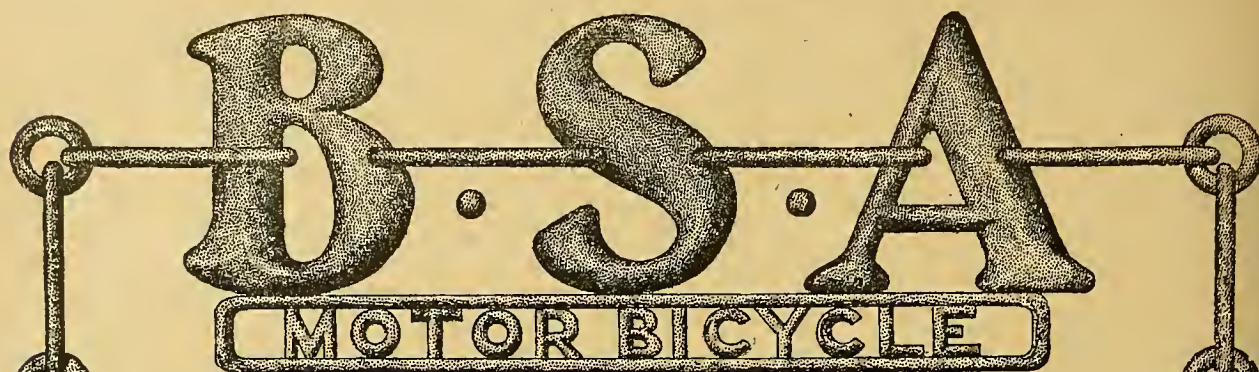
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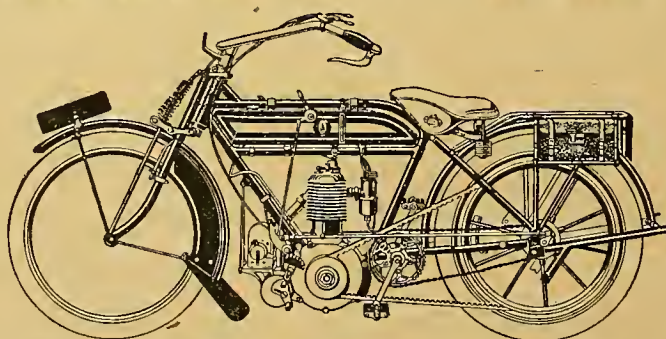
## HILL CLIMBING.

"I feel I must express my surprise at the hill-climbing qualities of the fixed engine B.S.A. Motor Cycle you supplied me with. I have same permanently attached to sidecar. I had occasion to climb Maldon Hill twice recently, when it took same in grand style with wife in sidecar on both occasions. This is considered the worst hill in Essex, and was taken after a 16 mile run with warm engine. It also appears a very cool running engine, as when riding I can always comfortably bear my hand down fins on cylinder; it never seems to heat beyond a certain temperature. The balance is perfect and it is easy starting, and altogether I am more than satisfied."

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## LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

### Waterproof Glue.

Sir,—Your correspondent "Mudplugger's" tip for a waterproofing mixture is splendid, being effectual and cheap. I wonder if he or any reader could give us ingredients for making a waterproof glue.

ANOTHER MUDPLUGGER.

### Care of Belt Fasteners.

Sir,—A tip which I have found very useful, and which may be of service to your readers, is to smear the hook and rollers of the belt fastener thickly with vaseline. The average motor cyclist forgets all about this essential accessory until, generally in the pouring rain, the fastener pulls through. If the fastener is not kept well oiled, rust sets in and makes short work of the connection. Ordinary oil soon works off, but a lump of vaseline will both ease the hook and the roller and will prevent rust. It will double or even treble the life of a belt fastener.

F. G. PEARSON.

### The Behaviour of certain Motor Cyclists.

Sir,—I was sorry to read again in your columns of the bad-mannered behaviour of certain motor cyclists. The stories are very similar to what we read respecting the rowdiness (to use a very mild term) which took place during the Scottish Trials. If this sort of thing is allowed to continue, all motor cyclists will in time become tarred with the same brush, and most undeservedly. I should like to suggest that the A.C.U. take the matter up, publish the names of the offenders, and suspend them for a twelvemonth,



The Rover machines in the Six Days' Trial ran most consistently. D. H. Noble (shown above in the pouring rain at Two Bridges) climbed all hills on the route and gained 25 marks bonus for an ascent of Lynton Hill, Lynmouth.

or longer if necessary. *Fiat justitia ruat cælum.* Surely it is possible to be "funny without being vulgar," as Albert Chevalier used to sing

ACTON HILL

### Pillion Seats.

Sir,—In your issue of August 15th appears a letter under the heading of "Pillion Seats," signed by "G.W."

I would like first to say that I quite agree with the writer as to the dangerous practice of carrying a passenger on a motor cycle in that way.

My object in asking you to publish this letter is because the rider mentioned or referred to is a personal friend and clubmate of mine, and as my initials are the same it might lead one to suppose that the letter came from me. You, sir, will, of course, know that this is not the case. So far as I am aware, I do not know the writer.

G. WEST.

Sir,—I have been using a pillion seat (Leamington chair) for about twelve months and have had various upsets along with a great deal of pleasure in using it. My first upset was owing to making a wrong turn and trying to correct myself too rapidly. The others have been due to grease, i.e., muddy roads. On these occasions, after much consideration of the reason or the main cause, I have come to the conclusion that the fall was due to a sudden application of the brake on the front wheel.

Regarding the automatic carburetter, may I say that the quest is more or less doomed to failure. You may get simplicity, but you will get a hotter engine; you may even save petrol, but you will never get the power that a twin carburetter as the B. and B. will give. The automatic inlet valve has gone out because it was not as unerring as the m.o.i.v., and so will the automatic carburetter.

HAMPSFIELD.

### The Braking Effect of Compression.

Sir,—I should be interested to know, in the columns of your paper, by virtue of what one gets any braking effect from running against the compression. Practically, of course, one does, but theoretically it would seem that one ought not to. When the engine is hot and the gas is turned off while running it sucks in cold air alone, which will get hotter and hotter during the cycle, till on the power stroke it should be doing more work on the piston in expanding hot than the piston has done on it in compressing it cold.

If the process were entirely adiabatic, which it very nearly is, and the cylinder walls were at the same temperature as the air in inlet, the work done on the air would be exactly the same as the work got out of it again. But even when the process is not truly adiabatic and the cylinder walls are hot, it is doubtful whether the air ever reaches a higher temperature on compression than that of the cylinder walls, so that any transference of heat would be from the walls to the air, and not from the air to the walls. Part of this heat must necessarily appear in the form of extra work on the power stroke. Unless, therefore, the fact that the exhaust opens before the bottom of the power stroke is sufficient to dissipate that extra work, as well as some of that which would be got back from the air from ordinary adiabatic expansion, it is not clear wherein the braking effect lies. I have neglected the resistance due to friction in the argument, as this is present even with the exhaust open, though not to quite the same extent.

I would be very interested to hear an opinion expressed on this problem.

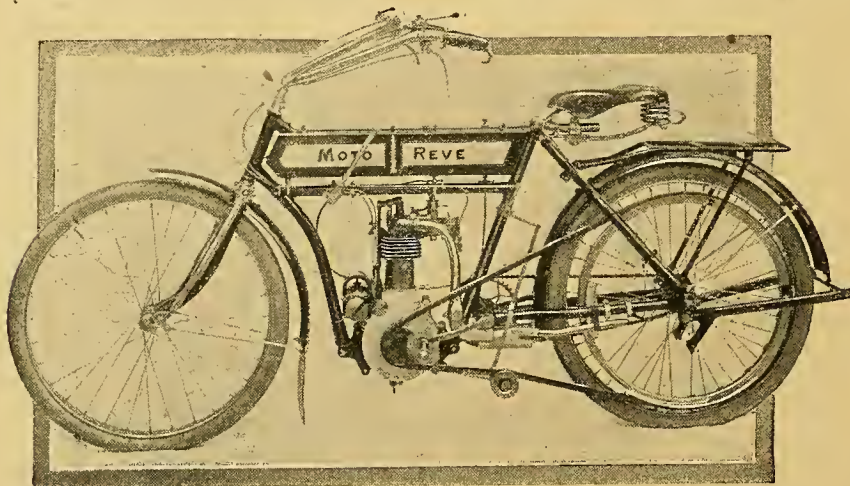
R. WEST.



### Power for Sidecar Work.

Sir,—Undoubtedly to many owners, simplicity is a *sine qua non*, and this is why they prefer overloading a  $3\frac{1}{2}$  h.p. to buying the more complicated machine. But the  $3\frac{1}{2}$  h.p. is not designed for sidecar work, generally speaking, and the sight of one of these gallant engines dragging the sort of "hotel" that constitutes many modern sidecars, ought to receive the consideration of the R.S.P.C.A. The machines will do it I know, but is it good for them, will they last as long, is it not in the end false economy? I have seen donkeys dragging an entire family to Epsom, but my sympathy was with the donkey. I would therefore call the attention of "simplicity seekers" to a combination which is not overloaded when pulling a sidecar and possesses the advantages of a single-cylinder. I refer to the 600 e.c. singles. The way in which these engines will pick up from a traffic stop or on a hill is nothing short of marvellous. Long grinds on low gear are unknown, and almost any main road hill can be surmounted on a  $4\frac{3}{4}$  to 1 gear, my usual touring gear being  $4\frac{1}{2}$  to 1. This, I believe, is impossible on a  $3\frac{1}{2}$  h.p. unless the owner lives in a very flat district. Recently, having mistaid my belt punch, I was unable to lower my gear from the abnormally high ratio of  $4\frac{1}{2}$  to 1, but managed to go from just outside Douglas to Ramsey on top. A passenger and luggage occupied the sidecar which, unloaded, is not light. These few remarks show that for an extra 50s. one may be possessed of a combination that will have ample power coupled with the simplicity of the single-cylinder.

OLDEST.



A new model single-cylinder Moto-Reve with engine placed vertically. This is the latest production of the Geneva factory.

### Silver Plate v. Nickel.

Sir,—Having had an extensive experience with cycles, typewriters, and other nickel-plated articles, I have been the recipient of many bitter complaints concerning the unsatisfactory state such things get into in a surprisingly short time. After close observation I have arrived at the following conclusions:

- (1.) That nickel, no matter how good the quality, is utterly unsuitable to a humid climate like that of Great Britain.
- (2.) That nickel perishes through the corrosive action of damp, and never gets the ghost of a chance to wear out.
- (3.) There exists no satisfactory method of adequately protecting it; the usual method of smothering it with vaseline and other grease being most objectionable.
- (4.) That it is high time some other metallic finish took the place of the nickel process.

I suggest electro-silver. I know the machines can be enamelled (after the fashion of an "all weather" mount), but this is not a satisfactory solution of the problem. Bright metal is attractive to the eye, and will always be preferred to a dull finish by most people; consequently plating of some sort must be adopted. The idea of silver may be startling at the first blush, but I would like to see the subject discussed in

your columns. I am convinced that even a cheap third grade silver plate would give far better results than first grade nickel, and I should imagine the cost of the former process would be very little more than that of the latter. The silver has a much longer life. It is not destroyed by damp, as the nickel is, the slight oxidation that forms on it when it has been neglected for a while being easily cleaned off with a soft chamois leather and a little plate-powder, leaving the plated part as good as new. On the other hand, no amount of polishing can restore the nickel when the fatal "frosty" appearance sets in; it is gone for ever. There is also no effort required to restore silver to its virgin bloom, when it has turned slightly "blue"; while cleaning corroded nickel is a "terror." Cannot some manufacturer muster up enough courage to make the experiment? I am sure he will be well repaid. Scores of men would rather pay a little more, and have a plating that would last two or three years, than put up with the present unsatisfactory nickel finish, that perishes in as many months, if it be neglected ever so little.

ANTI-NICKEL.

### Petrol Consumption.

Sir,—I have noted correspondence in your columns lately regarding petrol consumption, and see that very few get more than 90-95 m.p.g. It seems strange—perhaps it is "in the air"—as a  $3\frac{1}{2}$  h.p. Humber with two speeds that I had averaged 115 m.p.g., and my present machine (1911 5 h.p. Indian) regularly does 120 m.p.g. This seems a long distance, but I assure you it is quite accurate. The district round here is very hilly also. Of course, the machine is kept in decent trim, and engine cleaned out about every 300 miles. I presume the majority of people do not worry about this more than once every 800 miles or so. I find it pays to clean often, and have the pitting (if any) on the valves turned off in a lathe. A few revolutions with grinding paste then does the trick without appreciable wear on the seating.

The few motor cyclists around here are extremely keen. Some weeks ago a Salvation Army man, soliciting alms, rolled up on a  $3\frac{1}{2}$  h.p. New Hudson—a gift to the Army from one of its patrons. We got into conversation and he told us he does all his travelling round the country on it, rarely taking a train. He was so keen he nearly forgot to ask for a subscription!

One grumble before I close, and as it is a serious matter for those living on bad roads, and is an old complaint, it is strange so little notice is taken by manufacturers shipping machines over-

sea, why are not machines fitted with extra strong rims and spokes? Even the front wheel, supported by the spring forks, loses its shape, and the back wheel is a continual source of annoyance. My own machine was fitted with special rims and spokes and  $2\frac{1}{2}$  in. tyres by the Hendee Co., London, without my requesting them to do so, and they do not show the wear anything like some of the machines I see that have not been subjected to the banging about mine gets, nor half the mileage.

By the way, I seem to remember a threat last year that, before long, Mr. Wells was to make our  $3\frac{1}{2}$  h.p. singles eat dirt, and a request that you make a note of it. That seems to have been the end of the furrow. What a pity!

Congratulations to the Old Country on regaining the T.T. May she long retain it. I ride a machine of foreign manufacture, but like to see British machines do themselves justice.

BWANA M'DOGO.

Selukwe.

### A Few Lines about New Zealand.

Sir,—As I derive so much pleasure from your paper, I cannot refrain from sending you a few lines about New Zealand. I drive one of the few sidecars here, and the only one in this district, about half-way between Wellington



and Napier. New Zealand, though a hilly country, is not, at least in the southern half of the North Island, a country of very steep hills, but nearly all the hills are fairly steep. Grades worse than 1 in 9 are rare, most hills are between 1 in 12 and 1 in 10. In fact, the road has sometimes been sacrificed to the grade. The hill roads are always very narrow and often very rough. There will be just room for light traps to pass, and often on bad hills not that. I have never seen in England roads so narrow with a cliff wall on one side and a drop of from five to fifty feet or more on the other. I hope one day soon to make some careful measurements of some of the hills round here. Judging by the pictures in *The Motor Cycle* our corners are much worse than yours.

I am hoping to get a powerful twin soon; these hills are just too much for Triumph and sidecar unless the engine is in very good tune, and then you want to be lucky. We (my wife and I) want to have the best sidecar that can be got. But which is it? I had intended to be guided by the A.C.U. Quarterly Trials and the T.T. Race, so you can imagine my disgust when I found that all the leading makers had decided not to compete. As things are now, I think the choice will be a Chater-Lea three-speed, with which Mr. Ware performed so consistently last year.

Pahiatua, N.Z.

C. H. ISAACSON.

#### A Sidecar Experience.

Sir,—Having carefully read the description given by a member of your staff, in your issue of August 1st, 1912, may I take up a little of your valuable space by a description of my experiences with a 6 h.p. Enfield sidecar combination, which I purchased on June 8th.

Since then I have done close upon 3,000 miles, with only one slight mishap, which was on July 20th. I entered for a reliability trial, but through some misfortune missed my way and got twenty miles off the track. I made my time up by travelling about thirty miles at between forty-five and fifty miles an hour, but unfortunately missed a check and got disqualified, my machine having made about the best time of the day. Whilst travelling at the above mentioned speed, I neglected to give the engine more oil, with the result that the bearings got hot and wore the pulley end bush. I ride my machine all weathers, and have been out in such storms lately that no belt machine could have pulled through. I certainly like the chain drive very much, as I consider it is far cheaper than belts, as up to now my chain is showing no signs of wear, and I could never get a belt to run above 500 miles on a similar powered machine. It certainly is a little heavier on tyres, but not much; I had to change my back tyre at the end of about 2,000 miles. With regard to petrol consumption, I can get far better mileage than I could get with a single  $3\frac{1}{2}$  and sidecar, my average mileage is about 70 to the gallon. The writer of the article mentions various details with which he has had trouble, e.g., the gear lever. If he had squirted a little oil into the socket, he would have found that it would

have slipped into gear quite easily without any fierceness. Now the writer also complains of the noise from the valve tappets. Well, you have no other noise to hear, as the engine is so silenced that you cannot hear it, whereas on other machines you cannot hear the tappets for the noise of the engine. The only fault I have to find with the Enfield machine in any way is that it is too quiet, or, to explain, I think it would be better with a cut out, as when you are going through traffic, and running very slowly you have to be constantly sounding your horn to attract attention. I am enclosing photograph of my machine at a surprise check on July 20th. The sidecar passenger is Mr. R. Fearnside (also an Enfield rider), the checker, Dr. Dolan, secretary of Pontefract M.C.C.

Wm. SHARROCK, JUN.

Sir,—Having read with interest your critique of the Royal Enfield sidecar combination, may I trouble you with a short account of experience with this machine. A month ago I purchased a 6 h.p. sidecar Royal Enfield from Messrs. Wauchoppe, taken from stock, and up to now have done 1,100 miles on it, twice driving it through London. In this time I have not broken one valve spring and lost only one nut, viz., the one that screws the mudguard to the carrier. Your article infers that the engine shocks shake all nuts loose. I have not found a single nut come adrift other than this one. After twenty miles I found the gear perfectly sweet to handle, and can now drive through London without a stop. I ran over to Princes Risboro' the other day and climbed Kop Hill with ease with a passenger. The only fault I can possibly find with the machine is that it is difficult exactly to calculate the drip feed, and I have had to stop once or twice to clean the rear plug; this, however, is a matter of experience. Up to now I have not had a puncture in any wheel.

R. C. OWEN-WELLS.

#### The Motor Cycle for Military Purposes.

Sir,—Having at different times read in your paper accounts of military motor cyclists, it occurs to me that your readers may be interested to know how useful and practical motor cyclists are when attached to a telegraph company of Royal Engineers. The company under my command is entitled to an establishment of eight motor cyclists, although up to now only one has joined. This one, however, with a  $3\frac{1}{2}$  New Hudson and sidecar, did splendid work during training this year. On one occasion, on a scheme of telegraph communications, an office was required for a force three miles distant from the base on an existing cable line. The motor cyclist was detailed for this work, and carrying a telegraphist, and a complete office equipment, consisting of a tent, instrument, etc., was able to reach the required spot from the base, tap the line, set up an office, and dispatch a message of ordinary length in less than fifteen minutes. The old method would have been to send a light horsed cart, and more than double the time would have been required. For repairing faults and breakdowns, general orderly work, and intercommunication where no lines existed, he was invaluable, and I only regret that others have not followed his example and joined this most interesting branch of the Territorial Force, although I trust that by next year's training the section attached to this company will be complete. I have not the slightest hesitation in saying that it will be one of the most useful sections in the unit.

Both the two other officers of the company and myself are keen motor cyclists, and all ride Bradburys. We find that the motor cycle, when the work lies on the road and not across country, is far handier and quicker than horses, and it is quite easy for an officer to go over and inspect the whole of an extensive scheme of communication from end to end, when in the limited time available it would often be impossible on horseback.

H. C. SAUNDERS (Capt.).

O.C. Home Counties Div. Telegraph Co., R.E.

#### SUMMARY OF CORRESPONDENCE.

Will "R.G.C." (Bridlington) kindly send his full name and address to the Editor, as several communications are waiting for him.



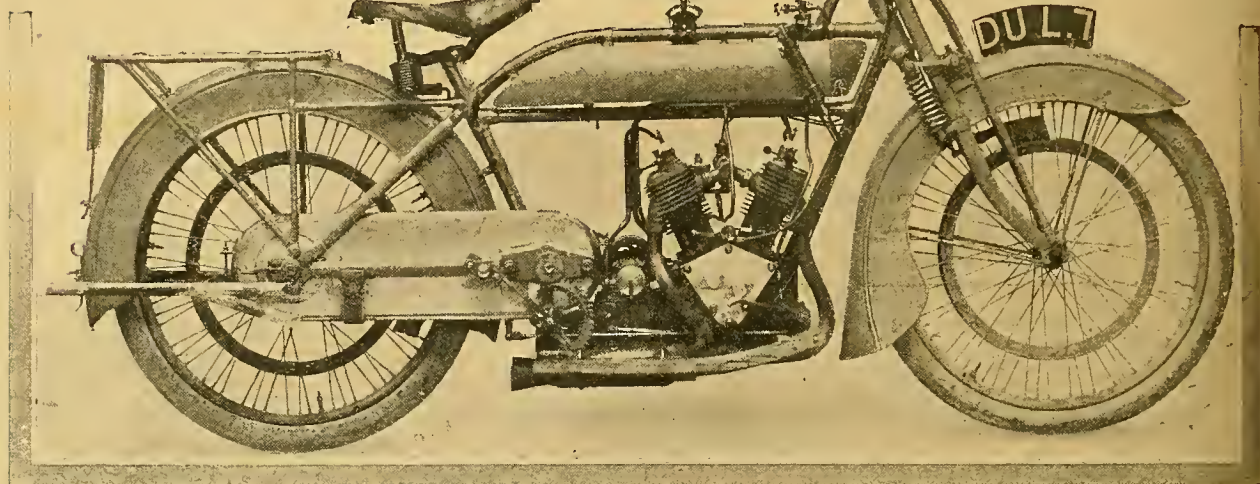
W. Sharrock, Jun. (6 h.p. Enfield sidecar), in a secret check. (See letter above).



# THE LEA-FRANCIS.

An entirely New Design embodying many Special Features.

Valve side of the new 3 h.p. twin-cylinder two-speed Lea-Francis,



**W**E are able to publish in this article the first description of a new motor cycle shortly to be marketed by Messrs. Lea and Francis, Ltd., of Coventry. This firm's bicycles have made such a name for excellence of workmanship and detail that it did not come as a surprise to us to find that their motor cycles show the same care and thoroughness throughout. As Mr. Ingall, who has charge of the new department, pointed out to us, they have laid themselves out to manufacture a machine which is oil and mud proof, and which can be ridden anywhere without fear of getting dirty. The machine is emphatically not a racer, but at the same time is capable of a very fair turn of speed, and is constructed for comfort and durability. The engine presents no very novel features,

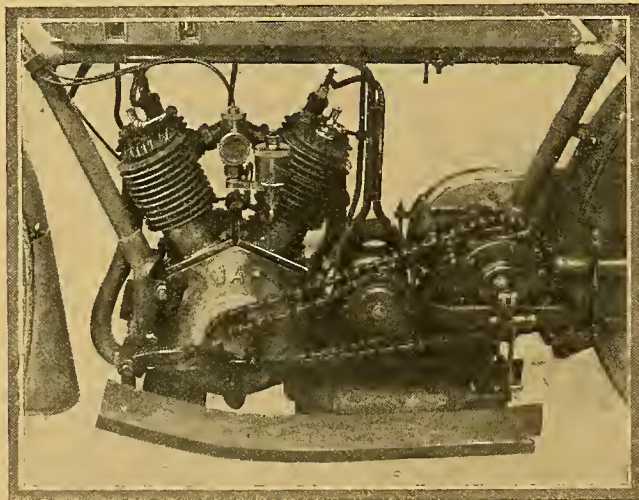
being a twin-cylinder of 60 mm. bore by 76 mm. stroke and rated at 3 h.p. The chief feature of this part is the neat exhaust lifter and adjustable tappets. The exhaust lifter may be adjusted so that each valve is lifted to exactly the same degree, or so that one cylinder may be cut out before the other so as to suit the requirements of the owner.

## An Automatic Carburettor.

A novel automatic carburettor will be fitted which at the present moment we are not at liberty to describe, though we may say that, to our own knowledge, a larger model is giving every satisfaction on a well-known make of car at the present time. Behind the engine, and driven by chain from the crankshaft, lies a Bosch magneto, well out of the way of mud and water, and capable of being moved longitudinally for chain adjustment. Particular care has been taken to place the make and break in an accessible position, and the high-tension wires are carried in metal tubes clipped to the frame by a spring clip. From the engine-shaft also runs a chain drive to a two-speed gear placed in the bottom bracket and of unusual construction. Both the driving and magneto chains are enclosed in an oiltight chain case, which is readily detachable by means of two spring clips. The driven sprocket is mounted loosely between two plates, which it drives through the medium of four coil springs, thus removing all harshness from the drive.

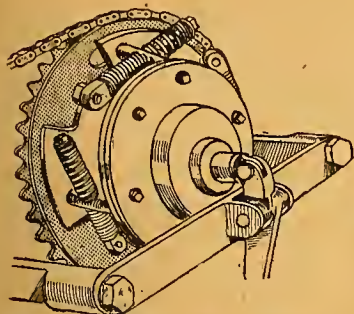
## A Plate Clutch and Two Speeds.

Mounted concentrically with the sprocket is a multi-plate clutch of particularly stout construction, and containing twenty pairs of steel plates. The two-speed gear is of the sliding dog type, and is carried in a phosphor bronze case, which case is mounted inside a special steel casting which forms the bottom bracket. The main gearshaft is eccentric to the bottom bracket, and thus a rotary movement of the gear box in its outer shell

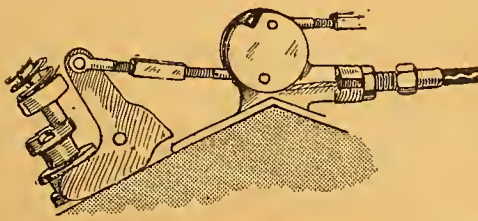


The power unit. The front oil bath chain case has been removed to show driving and magneto chains.

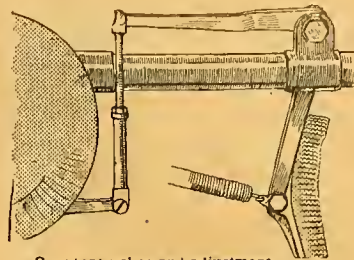




Spring drive and clutch actuation.



Arrangement of exhaust lift and adjustable tappet.



Rear brake shoe and adjustment.

forms a simple adjustment for the driving chain. By a very ingenious construction this movement of the gear box disturbs neither the adjustment of the gear striking mechanism nor the kick starter. Springs are arranged in the gear striking mechanism so as to prevent damage from careless manipulation, and the control is effected by a neat ivory-handled lever carried on a quadrant brazed to the top tube, the connection being made through Bowden wires. From the gear box another chain drives the rear wheel, and this also is enclosed in an oiltight casing.

#### Quickly Detachable Wheels.

The rear wheel is of the quick detachable type, and is driven from the sprocket by means of dogs. It is only necessary to swing up the hinged rear mud-guard and detach one bolt, and the wheel may be entirely removed, leaving the sprocket, chain case, and brake gear *in situ*. So that the wheel may be easily withdrawn from the dogs, a distance piece of slightly more than the depth of the teeth is placed on the side opposite to the chain wheel, and this distance piece is carried on an arm hinged to the frame, so that it cannot be dropped and mislaid. The wheel runs on a ball bearing hub provided with felt washers

so as to keep out mud and also to retain oil. The front wheel is held in the Druid licence forks by means of sunk washers, but, so as to render it easily detachable, these washers are made to stand out from the forks, and have a knurled rim which can be easily gripped. Both front and rear wheels are provided with V brake rims of such a diameter that they do not interfere with tyre removal, and have shoes acting on the inside of the V. This, of course, permits the wheels to be withdrawn without disturbing the brake tackle. The front wheel brake is actuated by the usual hand-grip and the rear by a pedal placed on the right hand side; a similar pedal on the left side operates the clutch, which may also be withdrawn by a hand lever so as to make starting easier. The clutch pedal is of the car type; that is to say, as soon as the pressure of the foot is removed the clutch engages of its own accord, and no heel pedal is necessary. Simple and accessible means are provided for the adjustment of both brakes and clutch.

#### Special Mudproofing of the Machine.

Mudguarding has received very special attention, and both front and rear guards have deep extensions at each side running the complete length of the guards. Long rubber-covered footboards extend from the gear box to the front of the engine, which is encased from below by a neat metal under-screen.

Stands are fitted to both wheels but are of the usual type. The general lines of the frame are very neat, and it is particularly noticeable that the front down tube is parallel to the front cylinder, and that every frame tube, with the exception of the back stays, has a parallel in some part of the frame. A dropped top tube is used, and neat V handle-bars which lie parallel to the top tube and have a sensible drop at the rear to ensure a comfortable position for the wrists. The handle-bar pillar extends upwards through the bars so as to form a convenient fitting for the lamp and generator bracket, and in the open end of the pillar is placed an oil squirt.

Bowden wires are carried inside the bars, and coming out through special lugs at the front they then follow the frame tubes to their respective mechanism, and are supported by special frame lugs and screw caps, thus obviating the necessity for unsightly clips. It may be mentioned that every pin joint works in a hardened and ground steel bush, the pin itself being the moving part. Thus only a new pin is required if wear should occur. There will be no plating except on those parts which it is necessary to see in the dark. The tyres fitted are  $26 \times 2\frac{1}{4}$ . Beyond this description we can only say that the motor bicycle is typical of the Lea and Francis work, and we can scarcely give higher praise.



Three-quarter rear view showing the efficient mudguarding. An underpan is also to be fitted as standard.



# Tyre and Belt Tests in the Six Days' Trials.

## Tyre Judge's Report (abridged).

THE prize offered "for the set of tyres which has withstood the severe conditions of the trial most satisfactorily" has been awarded to the set entered by the Palmer Tyre, Ltd., and carried on F. Smith's 5.6 h.p. Clyno sidecar. In making this award, it was necessary to consider the exact terms of the conditions under which the prize was offered. Those terms are very specific, and are not qualified by any reference to the size or costs of the tyres. [The italics are ours.—Ed.] The condition of the set of tyres to which the prize has been awarded was undoubtedly better at the conclusion of the trial than that of any other set under my observation. In fact, except for the tyre mounted on the driving wheel, it would have been difficult to say that the covers had been used at all, and on the driving wheel cover itself, except for the very slight markings on the outstanding ribs, there were practically no indications of wear. I have placed second the set of 26 x 2½ in wire-edged Hutchinson tyres carried on McMinnies' Triumph, which at the conclusion of the trial were in most excellent condition.

I would also call attention to the excellent condition of the Hutchinson tyres used on A. R. Abbott's Bradbury, of the Stellastic tyres on F. P. Dickson's 6 h.p. Zenith, and the Pedley tyres on Griffith's 6 h.p. Zenith. The latter rider was unfortunate in picking up a large wood screw, which made a bad double puncture in his back tyre on the fifth day, and also carried for some considerable distance a formidable 4 in. nail right through the tread and wall of the tyre, which only just missed piercing the inner canvas. The position of the nail showed that the canvas was very

well manufactured, the fabric having withstood the strain without tearing.

It is only right to call attention to the great difference in price between the tyres thus specially mentioned above and the set to which the prize was awarded. The conditions governing the award do not admit this question of price being considered therein.

The weights of the covers before the commencement of the trial were noted and compared with those at the end of the trial, but it is evident that too much reliance cannot be placed upon this. The fact that in some cases the tyres were slightly heavier at the conclusion shows that the differences do not entirely represent the loss of material from the tyres, which can only be accounted for by assuming that a certain amount of grit and wet had worked into the tyres.

Although the running conditions were extremely severe, a distance of 1,000 miles is evidently not sufficient for an exhaustive test of modern tyres.

The only point in which any tyres appeared to have deteriorated other than in the wear on the tread was in the case of certain covers in which the joint between the bead and the canvas did not appear to have been sufficiently protected.

Evidences of wear at these points, where the rim presses hardest on the cover, were observed, and in all such cases water had soaked through the tyre and had reached the inner canvas. The presence of this moisture right through the wall of the tyre could only have the effect of rotting the fabric.

Size and Type.	Make.	Price.	Used on.	Wheel to which Fitted.	Holes through Cover or other Casualty not Deflating Tube.	Gain or Loss in Weight after Trial	Remarks
26 x 3 (2½ rim) steel studded	Palmer Cord	£7 15 4	8 Chater-Lea sc.	Back	—	—9½ oz.	COVER: Studs very slightly worn, remainder of cover in excellent condition. TUBE: Excellent.
26 x 3 (2½ rim) ribbed tread	Palmer Cord	£6 0 4	8 Chater-Lea sc.	Front	—	+ ½ oz.	COVER: In excellent condition, ribs apparently not worn. TUBE: Excellent.
26 x 3 (2½ rim) ribbed tread	Palmer Cord	£6 0 4	8 Chater-Lea sc.	Sid'car	—	+ ½ oz.	COVER: In excellent condition, ribs not apparently worn. TUBE: Excellent.
26 x 2½ (2½ rim)	Rom com. n.s.	£3 18 2	3½ James .....	Back	—	—3½ oz.	COVER: Four metal studs and one rubber bar torn out. TUBE: Excellent.
26 x 2½ .....	Rom com. n.s.	£3 6 6	3½ James .....	Front	—	— ½ oz.	COVER: Studs very slightly worn, remainder in excellent condition. TUBE: Excellent.
26 x 2½ (2½ rim)	Rom com. n.s.	£3 18 2	3½ James .....	Back	—	—4½ oz.	COVER: One rubber strip on tread torn off, canvas showing on tread, and in twenty other places, remainder in excellent condition.
26 x 2½ .....	Rom com. n.s.	£3 6 6	—	Front	—	—1½ oz.	COVER: In excellent condition.
26 x 2½ (2½ rim)	Rom com. n.s.	£3 18 2	3½ James .....	aBack	—	—6½ oz.	COVER: One metal stud gone, slight cuts in rubber strips, remainder in excellent condition. TUBE: One patch.
26 x 2½ .....	Rom com. n.s.	£3 6 6	—	Front	—	— ½ oz.	COVER: Metal studs slightly worn, remainder excellent. TUBE: Excellent.
26 x 2 passenger	Hutchinson	—	2½ Douglas .....	aBack	—	—1½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn, remainder in excellent condition. TUBE: 1 patch.
26 x 2 T.T. ....	Hutchinson	—	—	Front	—	— ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2 passenger	Hutchinson	—	2½ Douglas .....	Back	—	—2½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn. TUBE: Trial tube not used.
26 x 2 T.T. ....	Hutchinson	—	—	Front	—	—1 oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2 passenger	Hutchinson	—	2½ Douglas .....	Back	Nail through cover when examined	—3½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn, joint between bead and carcass slightly worn. TUBE: Trial tube not used.
26 x 2 T.T. ....	Hutchinson	—	—	Front	—	— ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2 passenger	Hutchinson	—	2½ Douglas .....	bBack	Three small holes .....	—2½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn; joint between bead and carcass worn, damp inside canvas in consequence. TUBE: Trial tube not used.
26 x 2 T.T. ....	Hutchinson	—	—	bFront	—	—1 oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	3½ New Hudson ..	Back	—	—3 oz.	COVER: Centre row of studs worn flat, outer rows partly worn, one or two studs peeling off; join of joint between bead and carcass cracked inside, damp in consequence. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	Front	—	—	COVER: Centre row of studs slightly worn, remainder excellent.
26 x 2½ passenger	Hutchinson	—	3½ New Hudson ..	Back	—	— ½ oz.	COVER: Centre row of studs worn, remainder excellent. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	Front	Pin right through cover when examined	— ½ oz.	COVER: In excellent condition. TUBE: Pinhole in tube holding air till dismounted.
650 x 65 small car	Hutchinson	—	5 A.J.S. sc. ....	Back	—	—3½ oz.	COVER: Tread worn smooth, remainder excellent condition; applies spare, run 2 days only. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	Front	—	— ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	Sid'car	—	— ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	2½ A.J.S. ....	aBack	One stone cut .....	—4½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn; joint between bead and carcass slightly cracked slight damp on inside canvas. TUBE: One patch.
26 x 2½ T.T. ....	Hutchinson	—	—	Front	—	— ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	2½ A.J.S. ....	aBack	—	—2½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn; joint between bead and carcass slightly cracked slight damp inside canvas. TUBE: One patch.

aOne puncture, nail

bOne puncture, flint

cOne puncture, pin



# "Brough came roaring along all out" — *Motor Cycling.*

And wherever you find a reference to this rider in the Press reports of the

## A.C.U. Six Days' Trials

you will find a similar note.

And these are the tyres he rode,  
photographed as he finished—the

## JOHN BULL Cross Groove

They are ordinary 26 x 2½ and 26 x 2½ sections—not special sizes, and not specially manufactured.

The machine they shod was a Brough 6 h.p. Twin—not a lightweight—and in spite of the gruelling condition of the roads they came through the whole 1,000 miles without a single puncture, and enabled their rider to win Gold Medal.

That's service, and the actual photograph of the tyres themselves should convince you of the exceptional advantages derivable from the special method of their making.

**Brough knows their worth—do you?**

If not, send coupon below for Booklet, section, and particulars.

To the **LEICESTER RUBBER Co.,  
LEICESTER.**

Please send me Booklet, section and particulars  
of the JOHN BULL CROSS GROOVE.

Name.....

Address.....

LONDON STOCKISTS: Harrods, Ltd., Brompton Road, S.W.; Nye & Co., 16, Hampstead Road, N.W.; The Service Co., 292-3, High Holborn, W.C.; H. Taylor & Co., 21a, Store Street, Tottenham Court Road, W.C.

Back Tyre  
26 x 2½

Front Tyre  
26 x 2½

*In answering this advertisement it is desirable to mention "The Motor Cycle."*



*The**Ariel***SUCCEEDS****WHERE MANY OTHERS FAIL.****A.C.U. SIX DAYS' TRIALS.****3 ARIELS ENTERED 3 MEDALS****2 GOLD. 1 BRONZE.****Including Bonus for successfully climbing Beggar's  
Roost and Lynmouth Hills.****SCOTTISH SIX DAYS' TRIALS.****3 ARIELS ENTERED 3 MEDALS****1 GOLD. 1 SILVER. 1 BRONZE.****The only team to complete the full course under  
their own power.****WRITE FOR CATALOGUE  
DEPT. 2****ARIEL WORKS,  
BOURNBROOK, BIRMINGHAM.***In answering this advertisement it is desirable to mention "The Motor Cycle."*



## TYRE JUDGE'S REPORT (continued).

Size and Type.	Make.	Price.	Used on.	Wheel to which Fitted.	Holes through Cover or other Casualty not Deflating Tube.	Gain or Loss in Weight after Trial	Remarks.
26 x 2½ passenger	Hutchinson	—	—	aFront	—	—	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	3½ O.K. ....	dBack	Wire ½" long right through cover when examined	-3 oz.	COVER: Centre row of studs worn flat, outer rows partly worn, remainder in excellent condition. TUBE: Patched.
26 x 2½ passenger	Hutchinson	—	—	Front	—	-1½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	7 Indian .....	Back	—	-2½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn, remainder excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	aFront	—	-1 oz.	COVER: In excellent condition. TUBE: One patch.
26 x 2½ passenger	Hutchinson	—	7 Indian .....	Back	One nail hole .....	-4½ oz.	COVER: Centre row of studs worn flat, outer rows partly worn; cut in tread 1" wide, ½" deep diagonally, apparently due to imperfect vulcanising of tread at joint; remainder very good. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	aFront	—	+ ¼ oz.	COVER: In excellent condition. TUBE: One patch.
26 x 2½ passenger	Hutchinson	—	3½ Bradbury ....	Back	—	—	COVER: Centre row of studs half worn, remainder excellent. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	Front	—	+ ½ oz.	COVER: In excellent condition. TUBE: Excellent.
650 x 65 small car	Hutchinson	—	7 Matchless sc.	Back	One stone cut .....	-9½ oz.	COVER: Tread quite smooth; a few small stone cuts, one right through; remainder excellent. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	Front	—	-4½ oz.	COVER: Centre row of studs worn flat, outer rows slightly worn, near side especially; joint between bead and canvas slightly worn, damp inside canvas. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	Sidcar	Cover rolled off turning corner, tube did not burst	- ¼ oz.	COVER: Excellent condition. TUBE: Stretched owing to swelling when cover rolled off.
650 x 65 small car	Hutchinson	—	7 Matchless sc.	Back	—	-11½ oz.	COVER: Tread worn quite smooth, remainder in excellent condition.
26 x 2½ passenger	Hutchinson	—	—	Fron	—	-4 oz.	COVER: Centre row of studs worn flat, outer rows worn slightly, remainder excellent. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	—	aSid'car	—	- ¼ oz.	COVER: In excellent condition, except for cut in wall. TUBE: Spare used in place of damaged one.
26 x 2½ passenger	Hutchinson	—	3½ Triumph ....	Back	—	-2½ oz.	*COVER: Centre row of studs slightly worn, remainder excellent. TUBE: Excellent.
do. do.	Hutchinson	—	—	Front	—	+ ½ oz.	*COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	6 Zenith .....	Back	—	-2½ oz.	COVER: Centre row of studs partly worn; tread opening slightly at joint, apparently due to imperfect vulcanisation. TUBE: Split by puncture, third day discarded.
26 x 2½ passenger	Hutchinson	—	—	Front	—	+ ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ passenger	Hutchinson	—	3½ Singer .....	Back	One flint hole .....	-2½ oz.	COVER: Centre row of studs worn flat, outer row slightly worn, remainder excellent. TUBE: One patch cut, due to twisted tube.
26 x 2½ passenger	Hutchinson	—	—	Front	—	+ ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 2½ rubber tread	Wood-Milne	—	3½ Green-Precision	Back	—	- ½ oz.	COVER: Attachment between bead and carcass badly worn nearly all the way round, much damp inside canvas in consequence. Experimental tube discarded first day.
do. do.	Wood-Milne	—	—	Front	One nail hole .....	- ½ oz.	COVER: In excellent condition. TUBE: Excellent.
26 x 3 (2½ rims) steel studded	Palmer .....	£7 15 4	7 Matchless sc.	Back	—	-17½ oz.	COVER: Steel studs slightly worn, remainder excellent. TUBE: Excellent.
do. ribbed	Palmer .....	£6 0 4	—	Front	—	- ½ oz.	COVER: Excellent condition, no appreciable wear on ribs.
do. do.	Palmer .....	£6 0 4	—	Sidcar	—	+1½ oz.	COVER: Excellent condition, no appreciable wear on ribs. TUBE: Slight mud and damp on valve hole.
26 x 3 (2½ rims) ribbed	Palmer .....	£6 0 4	5-6 Clyno sc. ....	Back	—	-2½ oz.	†COVER: Wear on ribs very slight, the only visible signs of the cover having been used being a few very small cuts in tread of ribs. TUBE: Excellent.
do. do.	Palmer .....	£6 0 4	—	Front	—	+1½ oz.	†Ditto ditto ditto
do. do.	Palmer .....	£6 0 4	—	Sidcar	—	+3½ oz.	†COVER: No visible signs of wear. TUBE: Excellent.
26 x 2½ grooved rubber, T.T. type	John Bull ...	—	6 Brough .....	Back	—	- ¼ oz.	COVER: Markings on tread worn, small stone cut, remainder excellent. TUBE: Excellent.
26 x 2½ do. ....	John Bull ...	—	—	Front	—	+ ½ oz.	COVER: Excellent condition. TUBE: Excellent.
26 x 2½ ribbed ..	Pedley .....	£3 6 9	6 Zenith .....	Back	4" nail through tread and wall, tube untouched	-2½ oz.	COVER: Slight wear on ribs, in excellent condition. TUBE: Two patches.
26 x 2½ ribbed ..	Pedley .....	£3 6 9	—	Front	—	- ½ oz.	COVER: In excellent condition. TUBE: Two patches.
26 x 2½ ribbed ..	Pedley .....	£3 0 0	3½ Quadrant .....	Back	—	-3½ oz.	COVER: Ribs considerably worn, remainder in excellent condition. TUBE: Two patches.
26 x 2½ ribbed ..	Pedley .....	£3 0 0	—	Front	—	- ½ oz.	COVER: In excellent condition. TUBE: Two patches.
26 x 2½ ribbed tread	Stellastic ....	—	6 Zenith .....	Back	—	-3 oz.	COVER: Thin rubber covering to steel insertions in tread nearly worn away; several sideslips reported; whole cover in excellent condition. TUBE: Two patches.
26 x 2½ ribbed tread	Stellastic ....	—	—	Front	—	- ½ oz.	COVER: Rubber covering to steel insertions unworn, in excellent condition. TUBE: Two patches.

aOne puncture, nail. bOne puncture, flint. cOne puncture, pin. dTwo punctures, cause not known. eOne large cut in wall through striking stone in dark. fThree punctures, flints. gOne puncture, double wood screw. \*Placed second in order of merit. †Awarded special prize for "the set of tyres which has withstood the severe conditions of the trials most satisfactorily."

(Signed) F. LINDSAY LLOYD, Tyre Judge.

## BELT JUDGE'S REPORT (abridged).

The accompanying sheet of particulars [Reproduced on the next page.—ED.] shows the details of the belts tested during the Six Days' Trials and my remarks on the condition at the conclusion thereof. (Only belts used on machines which completed the trial are reported.) I have awarded the prize presented for that set of belts which has withstood the severe conditions of the trial most satisfactorily to Messrs. J. Pedley and Sons, Ltd., for their 1in. Pedley rubber belt used on Mr. P. Weatherill's 3½ h.p. Zenith, and placed second in order the same company's ¾in. belt used on Mr. A. J. Dixon's 3½ h.p. Singer.

I would also mention as having gone through the trial in a

most satisfactory manner the set of Service leather belts carried on Mr. W. B. Little's 3½ h.p. Premier. In all these sets of belts one only was used, and in each case only one piece required to be cut off. At the conclusion of the trial they were all in a perfectly serviceable condition and apparently good for use for many more miles.

Examination of certain belts used during the trial showed that considerable deterioration to the belts was caused by the fastener having been badly attached, and in two cases it appeared as if the fasteners used were somewhat too small for the belt, a cross strain at this critical point being thus put upon the belt itself.



## Belt Judge's Report (continued).

No. used.	belt.	Tested on.	Rider.	Shortened	Judge's remarks on condition at the conclusion of the trials.
2	3" Pedley rubber	3 1/2 Quadrant	R. Mundy	—	Both belts constantly damaged through bottoming on the pulley, discarded on 4th day.
2	1" Pedley rubber	6 Zenith	G. Griffith	(a) 2"	(a) Fastener broke 4th day, pulled through 6th day, otherwise in good condition.
				(b) 1"	(b) Fastener badly fitted; in good condition.
2	3/8" Service Co. leather	3 1/2 Premier	W. B. Little	(a) 2 1/2"	(a) Belt scraped 4th day, in very good condition, very flexible.
				(b) unused	
2	1" Stanley Dermatine	3 1/2 Triumph	H. E. Catt	(a) 5"	(a) Belt cracked 3" from either end, two other small cracks at outer angle, nearly worn out.
				(b) unused	
2	3/8" Pedley rubber	3 1/2 Bradbury	A. R. Abbott	(a) 1"	(a) Fastener badly fitted, belt worn in consequence, otherwise in good condition.
				(b) 2"	(b) In good condition.
2	1" Lycett Rawido	6 Zenith	A. P. Morris	(a) nil	(a) Reported slipping on 1st day, changed used again for 2 1/2 days; in good condition.
				(b) 2"	(b) Used 3 days, pulled through at fastener 4th day, changed to first belt, otherwise good.
(a)	3/8" Lycett Rawido	3 1/2 Green-Precision	H. C. Mills	(a) nil	(a) Used 1st day only, fastener pulled through.
(b)	3/8" Lycett New Winter	3 1/2 Green-Precision	H. C. Mills	(b) nil	(b) Slight wear at fastener, otherwise in good condition.
	3/8" Lycett Rawido	3 1/2 Triumph	W. F. Newsome	(a) —	(a) Badly cracked, 4th day 3" from end; unserviceable.
				(b) nil	(b) Slight crack near one end, otherwise in good condition.
2	1" Pedley rubber	3 1/2 Zenith	F. Weatherill	(a) 1 1/2"	(a) In excellent condition. Awarded cup.
				(b) unused	
2	1" Pedley rubber	3 1/2 Singer	A. J. Dixon	(a) 2"	(a) In excellent condition. Placed 2nd in order of merit.
				(b) unused	

(Signed) F. LINDSAY LLOYD, Belt Judge.

## Inter-club Hill-climb in Scotland.

On the 24th inst. the Edinburgh and District M.C. and the Border M.C.C. held a hill-climb on Langton Hill. Each club was represented by one lightweight, two singles, one twin, and one passenger machine. Results:

Rider and machine.	Secs.	F.M.
CLASS I		
1. A. H. Alexander (2 3/4 Douglas) ...	79.8	3021
2. G. L. Carmichael (2 1/2 Singer) ...	92.2	2567
3. A. U. R. Downie (2 1/2 A.J.S.) ...	113.6	2114
CLASS II.		
1. A. J. C. Lindsay (3 1/2 Rover) ...	57.6	3599
2. A. H. Alexander (3 1/2 Zenith) ...	61.8	3457
3. O. G. Braid (3 1/2 Indian) ...	62.2	3437
CLASS III.		
1. R. S. Morrison (5-6 Bat) ...	51.	2873
2. C. Armstrong (3 1/2 Indian) ...	62.8	2806
3. J. M. Martin (5-6 Matchless) ...	61.	2406
CLASS IV. (Scratch).—Up to 550 c.c.		
1. A. J. C. Lindsay (3 1/2 Rover) ...	56.6	
2. P. E. Tolfree (3 1/2 Bat) ...	58.8	
3. A. H. Alexander (3 1/2 Zenith) ...	62.2	



A STRANGE SIGHT ON NOTTINGHAM—DERBY ROAD, AT BARROW-ASH, ON MONDAY LAST.

Motor cyclists who use their machines for business purposes were considerably delayed. We are indebted to Mr. A. B. Bennett, hon. sec. of the Derby and District M.C.C., for the photograph. This rider is seen above with his 6 h.p. Brough.

CLASS V. (Scratch).—551 to 1,000 c.c.		
1. J. R. Alexander (7-9 Indian) ...	49.2	
2. R. S. Morrison (5-6 Bat) ...	52.2	
3. J. M. Martin (5-6 Matchless) ...	57.6	
A. J. C. Lindsay (3 1/2 Rover) ...	57.6	

CLASS VI.—Passenger.		
1. A. H. Alexander (3 1/2 Zenith) ...	96.	2805
2. W. B. Smith (3 1/2 Bat) ...	112.4	2674

## RESULT OF TEAM COMPETITION.

Edinburgh Club.		Border Club.	
A. H. Alexander	3021	G. L. Carmichael	2567
A. H. Alexander	3457	A. J. C. Lindsay	3599
P. E. Tolfree	3325	T. W. Milligan	2769
R. S. Morrison	2873	J. M. Martin	2406
A. H. Alexander	2805	W. B. Smith	2674

15481

14015



The new 2 1/2 h.p. two-speed chain-driven Sunbeam motor cycle with its designer, Mr. Greenwood. The photograph was taken on the Yorkshire hills, where the Sunbeam was behaving very well, during a week-end tour.



# The Motor Cycle Grand Prix de France.

British and American Successes. Team Prize won by the Indians.



## THE GRAND PRIX DE FRANCE.

O. C. Godfrey (Indian twin), the winner, finishing amid great cheering.

**W**HAT promised to be an important and interesting event was the above race, over a course of 280 miles, organised by the Motor Cycle Club de France. Unfortunately, as we pointed out last week, owing to differences between the organising body and the Automobile Club de France, the event was banned by the last-mentioned body and also by the Auto Cycle Union, with the result that the score or so of English riders who had entered decided not to compete. On Thursday the differences were settled and the ban withdrawn, but it was then too late for the majority to make their arrangements.

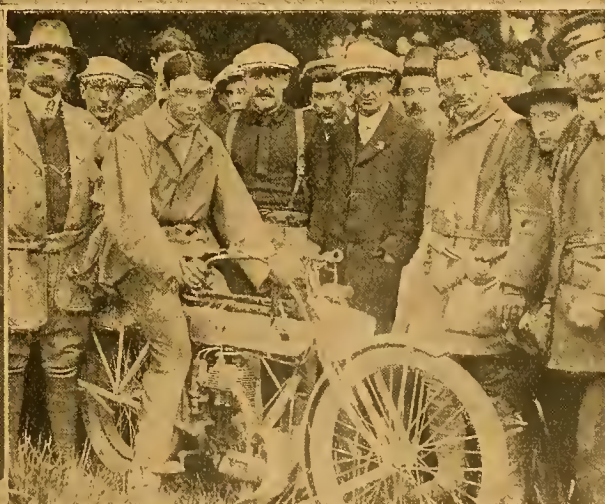
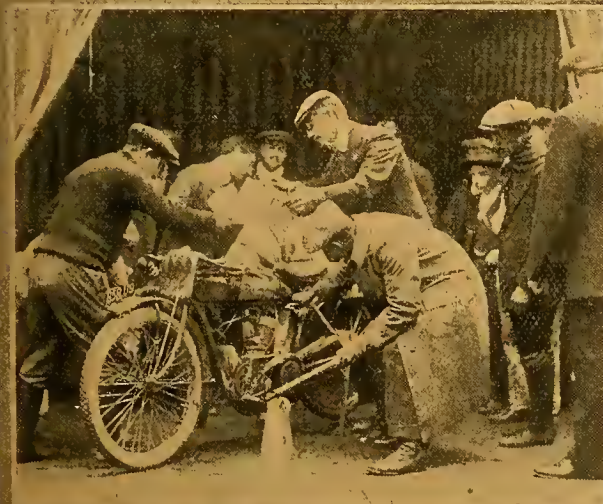
O. C. Godfrey (twin Indian) and C. B. Franklin (single cylinder Indian), accompanied by W. H. Wells and W. F. Newsome, who was taking over a racing Triumph for Graham Fenton, were the only Britishers to make the journey. The Fontainebleau Circuit, on which the contest was held, is in a very muddy state owing to the recent rain, but this did not prevent fast speeds being accomplished, though several spills were recorded.

A French amateur, de Vay (Triumph), the second to finish

Early on Sunday morning the Boulevard Sylvain-Collinet presented an unusually animated scene. At five o'clock the first competitor was despatched on his long journey of 450 kilometres, the remainder following at half minute intervals. A large crowd of interested spectators watched the start, in spite of the early hour. The length of the laps was thirty kilometres, and this had to be covered fifteen times by motor cycles and twelve by sidecars in twelve hours.

The result was an easy win for O. C. Godfrey, who raced again after a rest of several months. He was mounted on his  $3\frac{1}{2}$  h.p. Tourist Trophy two-speed twin Indian, and his time was 6h. 34m. 59s., equal to an average speed of  $42\frac{1}{2}$  m.p.h. de Vay, on a  $3\frac{1}{2}$  h.p. Triumph, was second in 6h. 55m. 14s., C. B. Franklin (single-cylinder Indian) third in 7h. 5m. 24s. Franklin was delayed by tyre troubles. Bloch (Rene-Gillet) was fourth, time 8h. 9m. 44s. Godfrey's last lap was the fastest, his speed being 46 miles 1,062 yards per hour.

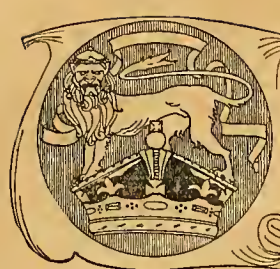
In the passenger class Vanella (Rene-Gillet) was first, with Chartier des Varennes second on an Indian.



Filling up Mon. Raid's 4 h.p. Indian. W. H. Wells is superintending operations. Mon. Raid was fourth in order of finishing.

De Vay (Triumph) after finishing second in the Grand Prix de France.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Aug. 29th	...	7.53 p.m.
" 31st	...	7.48 "
Sept. 2nd	...	7.44 "
" 4th	...	7.40 "

## New Records.

At the Canning Town track on Tuesday morning, Harry Martin, riding a 2½ h.p. Martin-Jap, captured the standing mile record, covering the distance in 1m. 14½s., also the standing five miles record, time 5m. 32s.

## One Race at Next Brooklands Meeting.

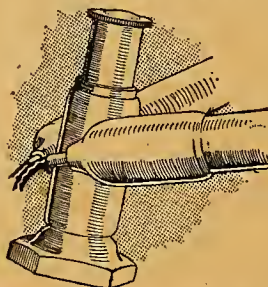
At the Brooklands A.R.C. meeting on Saturday, September 28th, there is only one motor cycle event on the programme, viz., the Twelfth Short Race, a handicap for all classes of motor cycles, distance about 5½ miles.

## Streatham Hill-climb.

We are advised that there is already a satisfactory entry in every class at the Streatham and District M.C.C. open hill-climb on September 7th, but further entries will be accepted up till Monday next. *The Motor Cycle* formula will be used, and we are asked to draw especial attention to the cyclecar class.

## A New Engine.

The Enfield machine H. V. Colver was to have ridden in the 150 miles race at Brooklands last Saturday is fitted with a new Enfield engine, which possesses several notable departures in design. It has an outside flywheel, mechanically operated valves, with the inlet valve arranged



Handlebar lugs showing extension for lamp bracket, and oil squirt.

overhead, and, of course, chain drive. Colver was seen on the track with it a month ago, and reported the machine to be extremely fast. This Enfield may yet be the first lightweight motor cycle to cover sixty miles within sixty minutes.

## SPECIAL FEATURES.

A FOUR CYLINDER SINGER CYCLECAR.  
THE NEW LEA-FRANCIS.  
A WEEK IN WATERPROOFS.  
LE GRAND PRIX DE FRANCE (Illus.)



SECRETARY OF THE NEW HARTLEPOOL CLUB.

A new motor club has been formed in West Hartlepool. The existing Motor Cycle Club has joined hands with the car owners to form a strong and-influential club. W. T. Walton, junr. (who has held the secretaryship of the Hartlepool Motor Cycle Club for the last seven years), is to be secretary of the new body. He is seen above on his 3½ h.p. P. & M.

## Canning Town Track.

We understand that the cycle racing track at Canning Town—the only three-lap track in England suitable for speed work—is to be demolished.

## Important Hill-climb Next Saturday.

There are no fewer than 191 entries for the Coventry and Warwickshire Motor Club's seventh annual open hill-climb, to be held on Saturday next, commencing at 1 p.m.

## "The Motor Cycle" Appreciated in America.

We note with interest that the article which appeared in our spring issue under the heading of "How the Power of an Engine is Tested" has been reproduced, even to one of the sketches by an American contemporary. (Of course without acknowledgment.) It is true that most of the article has been paraphrased, but some of it is written word for word and is signed by the ingenious correspondent.



LE MOTOR CYCLE GRAND PRIX DE FRANCE.

The above illustration gives some idea of the tortuous nature of the course. C. B. Franklin, who finished third, is seen going well.



# STERNOL and the A.C.U. 6 DAYS' TRIAL

21 HONOURS SECURED.



**10 GOLD MEDALS**

**5 SILVER** „

**6 BRONZE** „



Evans, in addition to securing highest marks, gained the Silver Cup for  
**Finest Performance on Porlock Hill.**

He went up without his feet touching the ground at any point.

**3 Sternol Users Made Highest Possible Points.**

Of those who dropped out **not a single one** had any engine trouble.

## OFFICIAL RESULTS.

Name of Rider and Machine.	Marks Maximum 1050	Award.	Remarks.
P. J. Evans (3½ Humber) .....	1050	<b>Gold Medal</b>	<b>Silver Cup finest performance up Porlock Hill.</b>
A. J. Sproston (3½ Rover) .....	1050	„ „	
S. Crawley (3½ Triumph) .....	1050	„ „	
G. Castagnoli (3½ L.M.C.) .....	1009	„ „	
A. J. Dixon (3½ Singer) .....	1000	„ „	
L. A. Rees (3½ L.M.C.) .....	982	„ „	
J. D. Corke (5 A.J.S.) .....	982	„ „	
J. S. Holroyd (2½ Motosacoche) .....	975	„ „	
L. M. Soresby (3½ L.M.C.) .....	975	„ „	
D. Herdman (3½ Rudge) .....	951	„ „	
J. Haslam (6 Zenith) .....	947	<b>Silver Medal</b>	
G. Hunt (3½ Campion) .....	940	„ „	
E. V. Pratt (O.K.) .....	925	„ „	
M. Garrey (5 Swan) .....	925	„ „	
C. L. Scott (3½ Rudge) .....	903	„ „	
V. Wilberforce (2½ Douglas) .....	844	<b>Bronze Medal</b>	
S. K. Jones (3½ L.M.C.) .....	834	„ „	
R. C. Owen Wells (3½ Bradbury) .....	832	„ „	
A. R. Abbott (3½ Bradbury) .....	800	„ „	
L. Cass (4½ Quadrant) .....	784	„ „	
J. Mundy (6 A.C. Sociable) .....	637	„ „	
G. B. Fry (3½ Quadrant) .....	—	—	Broke contact breaker spring, retired.
J. Johnson (4 Kynoch) .....	—	—	Retired, reason unknown.
W. Land Dibb (6 Rex) .....	—	—	Collision, had to retire.
Dr. Moss-Blundell (6 Corah) .....	—	—	Retired owing to accident.
J. Farnsworth (3½ Campion) .....	—	—	Illness, retired.
E. T. Babbington (5-6 Bat) .....	—	—	Water in magneto, retired 6th day.
S. T. Tessier (7-8 Bat) .....	—	—	Tyre troubles, retired.
R. Poole (3½ O.K.) .....	—	—	Gear trouble, retired.
Colin McBeth (3½ Rudge) .....	—	—	Trouble with wheel bearings, retired.
G. H. Donnelly (4 Swan) .....	—	—	Frame out of truth, retired.
F. H. Thornton (5 Swan) .....	—	—	Frame and chain trouble, retired.
F. Hill (6 A.C. Sociable) .....	—	—	Timing gear broken, retired.
J. Cocker (2½ Singer) .....	—	—	Water in magneto, retired.

*Standard Quality Sternol Only was used.*

Remember that many splendid results have proved that for speed and power "Sternol" is really the **best** lubricating oil on the market. Motor cyclists using "Sternol" never experience trouble through gumming up, carbonizing, starting from cold or sooting up of plugs. Engine troubles vanish from the time you adopt "Sternol," whilst you will find your chances in hill climbs or any other contest are materially enhanced.

We stake our reputation on "Sternol." Many hundreds of motor cyclists do likewise (and have never been disappointed). YOU can do the same, with the complete assurance of getting better results—all the time.

Write to-day for Price List and particulars.

# STERNOL

56, Royal London House, . . .  
 Finsbury Square, LONDON, E.C.

E.H.G.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*



# Sparking Plug Design.

Owing to the  
unparalleled success of

## THE FAMOUS LODGE PLUG,

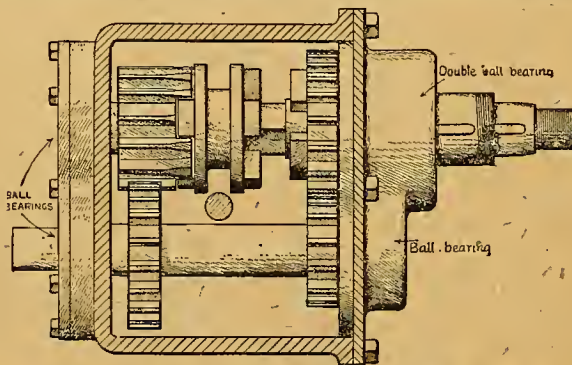
DESIGNED FOR MAXIMUM POWER,  
with its 3 pure nickel sparking points and pure nickel centre rod  
(PRICE 4/- EACH)

Other plug manufacturers are now including similar characteristics in their productions.

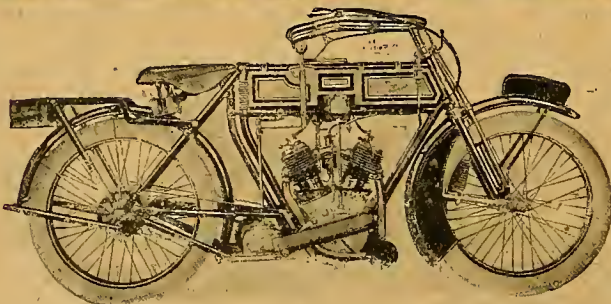
But however closely they make their plugs to resemble Lodge Plugs, they never quite succeed in imitating the essential features which can alone produce equal results. Don't be misled by appearances. Avoid all imitations, which can do nothing but cause disappointment.

Use only genuine LODGE Plugs. BRITISH MADE.  
When ordering, specify "Lodge Motor Cycle type."

LODGE BROS. & Co.,  
Dept. E, New St.,  
BIRMINGHAM.



THE "BAT" Two-Speed Gear.



THE "BAT" Model No. 3, with Two-Speed Gear.

**THE VARIABLE GEAR**  
for motor cycles—whether they be used solo or as a passenger combination—has come to stay. This has been fully proved in all the big trials.

In the



the TWO-SPEED Gear (in which both Shafts run on Ball-Bearings, and which has the pinions always in mesh) is mounted as a countershaft gear, so that neither the engine nor the back wheel is encumbered by it.

Experience has shown this to be the correct position for a variable gear, and thus the "BAT" again leads in correct design. Illustrated Book of the Bat free on request.

**THE BAT MOTOR MNFG. Co.  
PENGGE, LONDON, S.E.**

*In answering these advertisements it is desirable to mention "The Motor Cycle."*



**The A.C.U. Judges' Report.**

The delay in issuing the judges' report of the A.C.U. Six Days' Trials is, we are told, due to the number of protests which have had to be considered.

**End-to-end Sidecar Record.**

We understand that an attempt was to be made on the Land's End to John-o'-Groat's sidecar record, commencing yesterday. A rider named Ellison Hawks, of Leeds, had announced his intention of making the attempt, riding a Rudge Multi. One would imagine that the weather would effectually stop long distance road records of this kind.

**Trend of Design in Australia**

From an Australasian contemporary we learn that the fixed geared machine without a clutch is almost a thing of the past as regards the Dominion, and that 1912-13 contracts are calling for ninety-five per cent. two-speed and free engines. Two firms in New Zealand alone use fleets of forty and twenty-eight motor cycles respectively for business purposes.

**Coventry Club's Open Hill-climb.**

Again the Coventry and Warwickshire Motor Club has secured a record entry for its seventh annual open hill-climb, fixed for Saturday next, the 31st inst. Practically every well-known make of machine is represented, and most of the leading riders will compete. The venue has been kept secret to prevent practising, but readers who desire to witness the climb should apply to Mr. Geoffrey Smith, *The Motor Cycle*, Coventry, for a programme, enclosing stamps for 6½d.

**Experimental Engines.**

A correspondent who happened to be at Brooklands last week was surprised and interested to come across a new engine under test with an overhead inlet valve. Further investigation proved that it was an experimental Triumph. We are not surprised at this, as we saw the drawing of a Triumph engine with its inlet valve arranged on the overhead principle more than a year ago, and we have heard several times during the last two months that it had been seen on the road. Another strange machine which is often seen to emerge from the Triumph works is a two-stroke single-cylinder which appears to run beautifully. Verily, the Triumph Co. will not allow grass to grow under their feet!

**The Tilbury-Gravesend Ferry.**

Our best thanks are due to the many readers who, in response to our request, have kindly sent their experiences of this ferry. Some report very favourably, others the reverse. The fact is that motor cyclists who own sidecars or heavy machines should make use of the carriage ferry, giving notice to the station-master at Tilbury of the time of their arrival, as this ferry does not run regularly. Sometimes the passenger ferry will land the motor cyclist at the carriage jetty at Gravesend, otherwise there are steps to be negotiated on the Kent side. At Tilbury the arrangements are better, and no porters are required, but the approach is very circuitous, and the district uninviting. Anyone who desires to avoid London and the ferry must take the lengthy route given in our issue of March 14th last, page 266.

**FUTURE EVENTS**

- Aug. 31.—Coventry and Warwickshire M.C. Open Hill-climb.
- " 31.—Dublin M.C.C. Open Sidecar Reliability Trial.
- " 31.—Mersey M.C. Open Reliability Trial.
- Sept. 7.—Streatham and District Open Hill-climb.
- " 7.—Liverpool M.C.C. Open Reliability Trial.
- " 14.—B.M.C.R.C. Race Meeting.
- " 14.—Torbay M.C.C. Open Hill-climb.
- 16.—Edinburgh and District M.C.C. Open Hill-climb on Amulree

**Presentation to a Lady Motor Cyclist.**

Miss Muriel Hind was recently the recipient of a gold watch bearing her monogram presented by the Rex staff and employees as a token of their appreciation of her riding. A short time back the same lady was presented with a splendid silver cup as a souvenir of the Irish End-to-end Trial. It was subscribed for by the other competitors.

**Brooklands Meeting Postponed.**

The B.M.C.R.C. meeting that was to have been held at Brooklands on Saturday last, 24th August, was unfortunately rendered impossible by rain. We understand that it has been postponed to Saturday, 14th September next, which represents the next Brooklands meeting.

of the B.M.C.R.C. There was great disappointment when it was seen that the event must be put off, as the 150 mile race had attracted a representative entry with promise of good sport being witnessed.

**Motor Cyclists and Army Manœuvres.**

A very large number of motor cyclist members sent in their applications to be included in the A.A. and M.U. contingent for the manœuvres to be conducted from September 14th to the 20th. The necessary number have been selected to serve, and those not selected have been asked to signify their willingness to serve in the event of additional motor cyclists being required at the last moment. Those who have been selected must attend at the rendezvous on Friday, the 13th prox., the day prior to the manœuvres.

**"English Machines Obsolete."**

Thus reads a cross heading in an American paper on motor cycle doings in Vancouver, B.C. "The English machine," it says, "is almost obsolete, while five years ago they were the only make in use; the superiority of American goods has proved itself more than equal to the task of clearing the boards here as it has in other sections of Canada. The same failings mark their exit here as in other parts of the country, namely, too light a construction for severe conditions, small wheels and tyres, low clearance between the crankcase and road, weak spring forks, and last but not least it is a long wait for a replacement from England."

**A THREE-SEATED MOTOR BICYCLE**

The above strange-looking N.S.U. machine, which belongs to a Coventry motor cyclist, was snapped in Warwick a short time ago. The owner regularly takes his wife and daughter about with him, the seats being arranged, one on either side of the bicycle and another at the rear.



# The Reliable Douglas

Five Vibrationless Douglas Lightweights

were entered in the

Six Days' Reliability Trial

## ALL FIVE

SUCCESSFULLY COMPLETED THE COURSE

and secured

ONE GOLD MEDAL

TWO SILVER MEDALS

and

TWO BRONZE MEDALS

Miss Hammett, riding a Douglas, was the only lady rider to complete the Trial on a Lightweight.



P. W. Moffatt (Douglas) on Byber's Hill.

*All of the Five  
Douglas Machines  
secured the bonus  
of 25 marks  
for making clean  
ascents of Lynton  
Hill.*



P. Phillips (Douglas) on Porlock.

MAY WE SEND YOU FULL DETAILS OF OUR MODELS?

**DOUGLAS BROS.,** Kingswood, BRISTOL

Telephone—No. 51.

Telegrams—"Douglas, Kingswood."

London—336, Goswell Road, E.C.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*



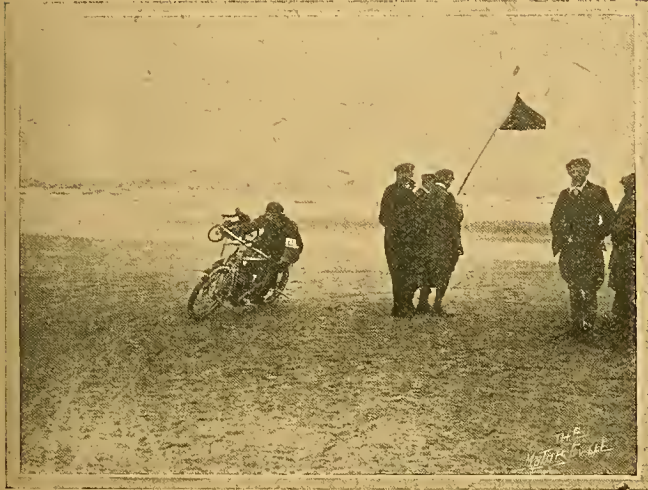
## SPEED TRIALS AT PORTMARNOCK.

The Dublin and District Motor Cycle Club held their fourth speed trials of the season, on Saturday afternoon, at Portmarnock. The weather was favourable, but there were an unusually large number of gullies across the course. The novices' race was won by a new member. Results:

Two Mile Novices' Handicap (engines of unlimited capacity): 1. C. Dunkley (5 Indian), 28s. start; 2. C. Bayton (3½ Triumph), 15s. start; 3. V. J. Farrell (3½ Triumph), 40s. start. Won easily. Winner's net time 2m. 47½s.

Four Miles Scratch Race (unlimited capacity): 1. F. J. Walker (3½ Rudge); 2. C. Bayton (3½ Triumph); 3. J. Healy (3½ Rudge). Won very easily. Winner's time 5m. 8½s.

Twenty-six Miles Open Handicap (unlimited capacity): 1. F. J. Walker (3½ Rudge), 3m. start; 2. T. E. Green (3½ Rudge), 3m. start; 3. C. Dunkley (5 Indian), 4m. start. Won by 38s. Winner's net time 33m. 32½s.



Walker (Rudge) who won two out of three races at Portmarnock on Saturday. He is seen turning in the twenty-six miles race.

## PHILIPSON'S SELF-GOVERNING PULLEY.

WE recently had the opportunity of inspecting this ingenious device fitted to a Triumph machine. This pulley is made in two patterns for racing and touring purposes. The principle of each is the same, but the racing pulley, which was the one we saw, is



provided with a stronger spring; this causes the gear to rise more quickly to the maximum, where it will remain under all ordinary circumstances, a slight pressure on the outer surface of the revolving ring, which surrounds the spring box, being required when it is desired to lower the gear. This can be done by the rider's heel or by means of a small brake shoe actuated by a Bowden wire and lever on the handle bar. A very slight touch reduces the gear as required on a hill or when turning a corner, and, when released, the gear returns gradually and automatically to the maximum as the road conditions permit. The touring pattern has a lighter spring and is entirely automatic.

We are requested not to describe the mechanism in detail at present, but we can say that the gear is extremely simple, and the photograph which we publish shows that it has a very neat appearance. It is quite foolproof and cannot be made to jam; there is no end thrust, and it is self lubricating. The maximum gear can be set in any desired position within the limits of the gear, and it is a matter of half a minute or less to alter this maximum. Even when the belt is loose it is gripped tightly between the two flanges of the pulley, and it is impossible for belt tension to force the flanges apart, which might conceivably happen in a gear controlled only by a spring. Another point worth noting is that as the belt is continually rising and falling in the pulley the latter is worn evenly and not in a groove—a con-



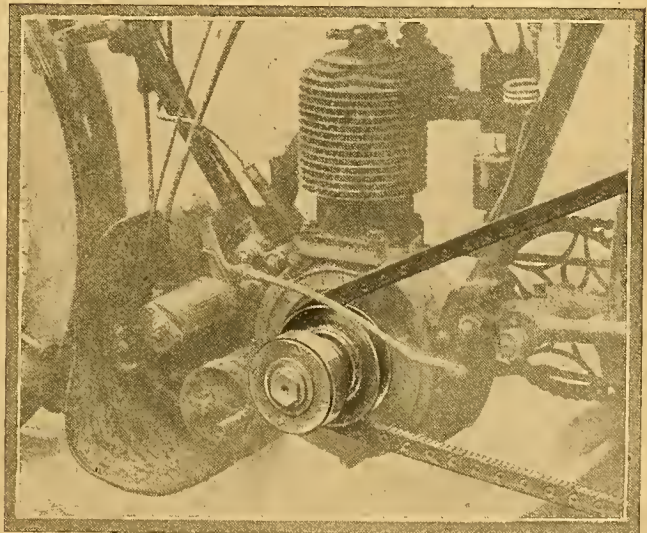
B. B. Harvey (7-8 Bat), the scratch man in Saturday's races, getting under weigh. It is interesting, also, to note that the pulley is to be made for fitting in the counter-shaft, where, owing to the large diameter allowable, it should be very effective. As belt adjustment is so seldom necessary Mr. Philipson proposes to connect the ends of the belt by a couple of plates only, thus bringing the ends close together. If a fastener is used it is a good plan to wrap a greenhide lace round the link in the manner shown in the small sketch. This prevents the ends of the belt wearing and subsequently pulling out.

## LONDON TO YORK RIDE.

Entries for the Essex Motor Club's annual run to York and back on August 30th-31st are given hereunder:

C. H. Corfield (C. and H. cyclecar)	A. T. Stanton (3½ Bradbury sc.)
D. S. Parsons (G.W.K.)	A. E. Brassington (6 Rex sc.)
G. T. Gray (3½ Rudge)	G. E. Revill (8 Zenith sc.)
Frank Roberts (3½ Rudge)	A. J. Sproston (3½ Rover sc.)
A. da Silveira (7 Indian)	W. H. Wells (7 Indian sc.)
A. A. Lilley (3½ Singer)	E. Frasseti (7 Indian sc.)
Harold Karslake (3½ Rover)	B. A. Hill (7 Indian sc.)
L. G. Brown (3½ Triumph)	W. Keir Smith (7 Indian sc.)
J. H. Kerr (3½ N.S.U.)	C. F. Mitchell (6 Bat sc.)
P. D. Walker (3½ Rudge)	R. Lord (6 Rex sc.)
A. H. Gold (3½ Ariel)	J. S. Holroyd (2½ Moto-sacoché sc.)
H. J. Beal (3½ N.S.U.)	G. L. Fletcher (2½ Douglas sc.)
J. A. Neumann (3½ Rudge)	V. Garland (6 Clyno sc.)
A. V. Deacock (6 N.L.G.)	

The start will take place at 7 p.m. to-morrow (Friday).



Philipson's Self-governing pulley fitted to a 3½ h.p. Triumph.





Start of the Novice Race in the Portmarnock Speed Trials last Saturday—Dunkley (5 Indian), the ultimate winner, is the second on the left.

#### Ayr and District M.C.C.

The annual one day trial was held over a 260 mile course via Kilmarnock, Glasgow, Bowling, Balloch, Luss, Tarbet, Cairndow, Inveraray, Dalmailly, Taynult, and Oban, returning the same way. With the exception of Miss May Senior, who suffered from tyre trouble, all arrived at Arrochar up to time. There were several falls on Rest and be Thankful. G. Cocker broke his oil pipe owing to his back brake jamming, which caused him to fall, and W. Munro



A few of the competitors in the Westmorland M.C.C. Hill-climb, held on Underbarrow Scar last Thursday.

had his back tyre blow off the rim in Kilmarnock. Gold medals: W. Allen ( $3\frac{1}{2}$  Triumph), H. Andrew ( $3\frac{1}{2}$  Triumph), F. K. Dickson ( $3\frac{1}{2}$  B.S.A.), J. Gilchrist ( $3\frac{1}{2}$  T.T. Triumph), A. J. C. Lindsay (6 Matchless), J. Meredith ( $3\frac{1}{2}$  P. and M.), W. Munro ( $2\frac{3}{4}$  Douglas), and A. Reaves ( $3\frac{1}{2}$  Rudge). Silver medals: G. Cocker ( $3\frac{1}{2}$  Rudge Multi) and J. McKervail ( $3\frac{1}{2}$  Triumph).

#### Leeds M.C.C. and Sheffield and Hallamshire M.C.C.

An inter-club flying kilometre speed event will take place in Stapleton Park, near Pontefract (by permission of Mr. Hope Barton), on September 7th. There will be eight classes.

#### Leicester County M.C.C.

The Leicester County M.C.C. is a newly founded organisation, and, although only formed a fortnight ago, already numbers over forty members. President, Mr. J. G. Shields, J.P., C.C.; hon. secretary, Mr. J. Dignan, Bell Hotel, Leicester.

#### Evesham M.C.

The results of the speed trial held on the 22nd inst. over a half-mile course were as follows: 1. H. W. Wynn ( $3\frac{1}{2}$  Rudge), 31s.; 2. B. Longford ( $3\frac{1}{2}$  Rudge), 32s.; 3. A. Bladder ( $3\frac{1}{2}$  Rudge), 34s.; 4. G. Hitchings ( $3\frac{1}{2}$  Triumph), 35s.; 5. D. Young (8 Williamson sc.), 38s.

#### Lincolnshire A.C. (Motor Cycle Section).

A hill-climb on the knock-out principle will be held on Scamblesby Hill, on the Horncastle and Louth Road, on Saturday, September 7th, at 3.30 p.m. There will be three classes: No. 1 up to 350 c.c., No. 2 up to 600 c.c., and No. 3 over 600 c.c. Two yards start will be allowed for each 5 c.c. difference in the cubic capacity of the engine.

#### Clapton and District M.C.

A reliability trial was held on the 18th inst. from the Swan Hotel, Clapton Common, to Bishops Stortford and back. There were ten starters. Results:

	Total error.
1. P. Bowman (4 J.A.P.) ... ..	10m.
2. A. Hewitt ( $3\frac{1}{2}$ Triumph sc.) ... ..	11m.
3. { G. Blain ( $3\frac{1}{2}$ Kerry-Abingdon sc.) ... ..	12m.
{ G. Davey ( $3\frac{1}{2}$ Kerry-Abingdon sc.) ... ..	12m.
{ A. Smith ( $2\frac{3}{4}$ New Hudson) ... ..	12m.



Sheffield motor cyclists at Owl Bar last week-end. They are not downhearted in spite of the weather.



# HUTCHINSON TYRES

## RELIABILITY TRIAL

### The Tale of Triumph.

The usual list of HUTCHINSON Successes in the Severest Trial ever held.

## 5 SPECIAL SILVER CUPS

J. Tassell (Matchless Sidecar). W. G. McMinnies (Triumph). H. Mellor Jameson (Enfield and Sidecar).  
W. G. McMinnies (Triumph). H. Mellor Jameson (Enfield and Sidecar).

## 14 GOLD MEDALS.

J. F. Sirrett (Indian). W. Heaton (A.J.S.). A. J. Dixon (Humber).  
B. A. Hill (Indian). J. D. Corke (A.J.S.). H. M. Jameson (Enfield).  
S. Moffatt (Douglas). H. Berwick (New Hudson). A. J. Stevens (5 A.J.S., s.c.).  
E. P. Dickson (Zenith). H. Dixon (New Hudson). C. R. Collier (7 Matchless, s.c.).  
B. Haddock (A.J.S.). W. G. McMinnies (Triumph).

## 6 SILVER MEDALS.

P. Phillips (Douglas). P. Weatherill (Zenith). W. B. Gibb (Douglas).  
J. Haslam (Zenith). R. V. Pratt (O.K.). J. Tassell (7 Matchless, s.c.).

## 3 BRONZE MEDALS

P. D. Walker (Rudge). A. R. Abbott (Bradbury). W. Wilberforce (Douglas).

Let us once more emphasize the fact that HUTCHINSON Tyres used in all competitions are **absolutely** similar in all respects to those obtainable from any agent, anywhere, at any time.

**"DISTINCT FROM ALL OTHERS."**

HUTCHINSON TYRE CO.,  
LONDON, E.C.

*Send for our Latest  
Illustrated Price List.*



**A  
FINE  
TESTIMONY**

**A  
GOLD  
MEDAL**

**in the SCOTTISH  
SIX DAYS' TRIALS**

and a splendid letter of appreciation  
from the winner, who used the

**S.-G.  
BELT.**

August 7th, 1912.

*I have received official notice that Miss Langston and I won a gold medal in the recent Scottish Six Days' Trials. You will be pleased to hear that we went through the entire Trial on the same 1in. Shamrock Gloria Belt, a fine testimony to any belt pulling a sidecar and passenger.*

*On some of the worst hills we changed for a short distance to a 7in. "Shamrock," to get a slightly lower gear, but this second belt did not do more than 20 miles all told. This means that the 1in. took us for well over a thousand miles without any attention beyond shortening on the first day to counteract its original stretch.*

*Yours faithfully,*

*Rev. P. W. BISCHOFF.*

*Write a postcard for fully priced list.*

**The HANOVER RUBBER Co.,**  
17, Goswell Rd., Aldersgate, LONDON, E.C.

**S.-E.  
TYRES**

are worthy  
of your  
consideration.



26x2½ in., per cover,  
37/6.

**31 HONOURS**  
IN THE  
**6 DAYS' TRIALS**  
WON ON  
**WAKEFIELD**  
**"CASTROL"** (Regd).

Viz:—

**THREE SILVER CUPS**  
**23 GOLD MEDALS and**  
**5 SILVER MEDALS.**

The lubricant par excellence  
for all Motor Cycles.

**C. C. WAKEFIELD & CO.,**  
27, Cannon Street, E.C.

C.D.C.

**Looks Substantial, Eh?  
Substantial Results too!**

Fit the

**SIMMS**

**No. 10 Plug.**



It gives a fat hot spark, over-oiling does it no harm, and it does not soot up.

This plug has proved an enormous success on all kinds of motor vehicles. This is the reason we make only one pattern.

The insulation is positively unbreakable.

Ask your local agent to show you one. It costs only 3/3, and it will enable you to get better service from your engine.

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**Torbay and District M.C.C.**

The second annual open hill-climb has been arranged for September 14th on Halsangai Cross Hill, which is about three-quarters of a mile long. It is said to be quite safe, being almost straight for its whole length and very slightly curving at the top, and will therefore be a fair test of machines. There are nine classes, including one for ladies and another for cyclecars. Entry forms and full particulars will be sent on application to Mr. A. Powell, 37, Fleet Street, Torquay.

**Mersey M.C.**

An open reliability trial will take place on the 31st inst. The start will be made at 8 a.m. from Hamilton Square, Birkenhead. The route will be Birkenhead, Chester, Tarporley, Stone, Cheadle, Mayfield, Ashbourne, Matlock, Bakewell, Tideswell, Bradwell, Hope, Chapel-en-le-Frith, Alderley Edge, Knutsford, Warrington, Cronton, Liverpool (Broad Green).

Competitors will be started in pairs and under pain of disqualification they must ride together. Each competitor is credited with 1,000 marks. Marks will be deducted as follows: Failure to climb any hill 50 marks, pedalling or foot assistance on any hill 25, stop due to tyre troubles 5, any other involuntary stop 20, for each full minute early at any control 3.

Each competitor acts as observer to his comrade, and in the event of a stop must wait and make a note of the cause. If, however, the stop is unduly prolonged after carrying out certain prescribed forms, he may proceed with the pair of riders that follow.

The committee of this club would welcome the assistance of any readers willing to act as marshals and observers on the route of the open reliability trial on August 31st. Applications should be made to Mr. S. W. Carty, hon. secretary, 5, Redcross Street, Liverpool.

**Dewsbury M.C.**

The second reliability trial of the year was held on Tuesday last, the prize being the Bat cup and gold medal. Result:

	Marks lost.
1. F. H. Dunstan (3½ Rudge) ... ..	3
2. S. Naylor (3½ B.S.A.) ... ..	10
3. C. Sydney (3½ Bradbury) ... ..	11

**North Staffordshire M.C.C.**

The third reliability trial for the Ashton cup took place on the 18th inst., starting from Whitmore and proceeding to Whitchurch, Bangor-on-Dee, Llangollen, Ruthin, Mold, Chester and back to Whitmore; distance, 111 miles. Results of this trial: G. Jones (3½ h.p. Zenith), 100 marks; G. Tagg (4½ h.p. Regal-Precision), and W. Palmer (3½ h.p. Triumph), tie for second place, 99½ marks; J. A. Prendergast (3½ h.p. Ivy-Precision), 95 marks; F. Tagg (5 h.p. Indian), 95 marks; R. H. Attwood (3½ h.p. Bradbury), 89 marks. Final results: 1, J. A. Prendergast (3½ h.p. Ivy-Precision), Ashton cup; 2, G. Tagg (4½ h.p. Regal-Precision), gold medal.

**Tunbridge Wells M.C.C.**

The third trial of a series of four for a challenge cup presented by the president, Col. Sladen (the mayor), took the form of speed trials, the previous trials being a petrol consumption test and a hill-climb. The speed trial was held over a half-mile course, the result being:

1. Brown (3½ Rover) ... ..	32½s.
2. Rumens (3½ Singer) ... ..	33½s.
3. Carey (3½ B.S.A.) ... ..	36½s.

It was a distinctly unfavourable afternoon for such an affair, the rain falling at intervals in torrents, which called for a considerable amount of pluck on the part of the riders owing to the wet state of the road and the high wind, consequently the times recorded were very creditable.

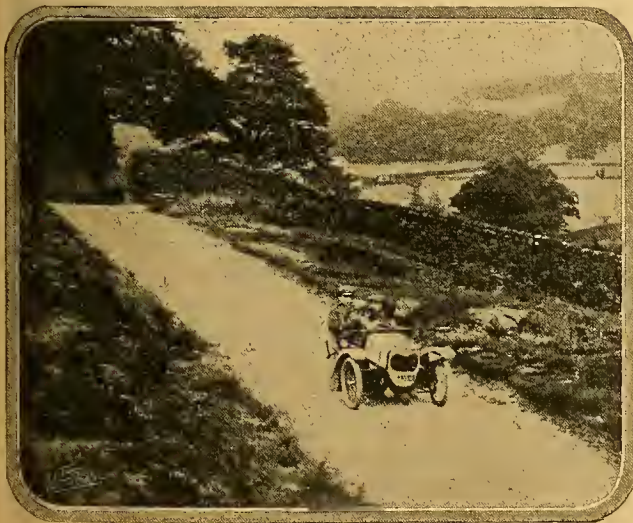
## A PASSENGER TRIAL IN YORKSHIRE.

THE two days' trial organised by the Harrogate and District M.C.C. attracted twelve entries of which eleven started. The first day's run was to Bridlington and back (130 miles), the competitors having to check in at numerous places, and climb Garrowby Hill without a stop. This hill accounted for C. Kenny (4 h.p. Singer sc.), G. Shepherd (3½ h.p. B.S.A. sc.), and W. Atkinson (3½ h.p. Scott, sc.). C. A. Nettleton (3½ h.p. New Hudson sc.) was late at a check in consequence of tyre troubles, thus there were seven to start on the second day over a far more difficult route including such hills as Pot Bank, Leathley Bank, Norwood Edge, and Gays Cliff (Yorkes Folly). E. R. Davies (6 h.p. Matchless sc.) did not start, and the remainder

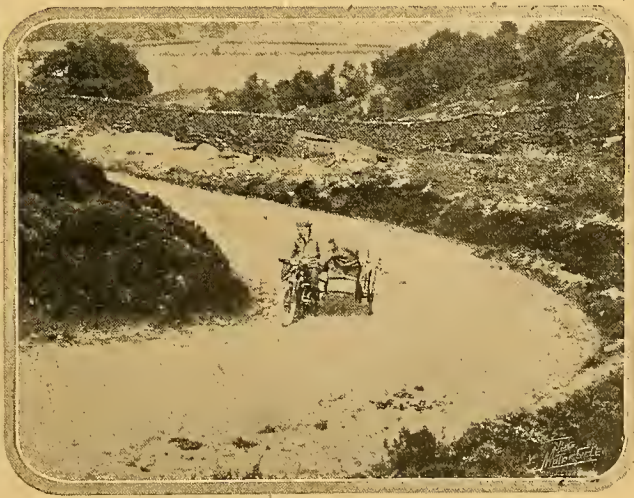
ran on without trouble to Yorkes Folly, which caused the downfall of W. Aldon (3½ h.p. Premier sc.), H. W. Fortune (3½ Brown sc.), W. Hill (3½ Scott sc.), and G. Hill (3½ Scott sc.).

**Two Inseparables.**

Consequently, W. Fawcett (6 Zenith sc.) and W. Turner (8 Morgan) were the only ones to finish with a clean sheet. To find a winner, these two were required to climb Brownstay Ridge, and this being satisfactorily accomplished they were then called upon to make a five miles non-stop run and again climb Yorkes Folly. Again they were successful, so the officials decided to give both of them a gold medal, and H. Fortune takes third prize for having climbed the furthest up Yorkes Folly of the remaining competitors.



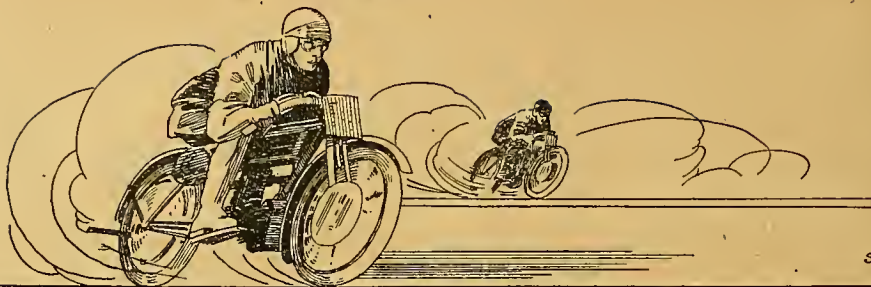
W. Turner (8 h.p. Morgan runabout) climbing Guy's Cliff, near Pateley Bridge—a hill which accounted for the most failures.



W. Fawcett (6 h.p. Zenith sidecar) negotiating the worst bend on Guy's Cliff in the Yorkshire passenger trial.



## QUESTIONS & REPLIES



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Abnormal Petrol Consumption.

**?** I have a  $3\frac{1}{2}$  h.p. Precision engine and a standard carburetter with a 32 jet in it, and can only get about 40 m.p.g. out of it. I have tried a smaller jet, but it will not pull. Is it possible for the engine to be at fault or the carburetter, and can you give me any advice?—S.W.W.

28 to 32 is about the normal size of jet for the cubic capacity of the engine in question. The reason it will not pull when you fit the smaller jet is because the choke tube is probably too large. If you reduce the choke tube in proportion to the size of the jet you will probably find the engine pull all right and be more economical. Forty miles to the gallon is ridiculous consumption for an engine of this size. Probably there is some waste taking place somewhere, either at the extra air inlet, or there may be some leakage in piping, tank, etc., which you have not discovered.

### Wood Green to Folkestone.

**?** Would you be kind enough to give me the best route from Wood Green to Folkestone, avoiding, as far as possible, traffic through London and bad hills. My machine is a 5-7 h.p. Chater-Peugeot and sidecar. I am an absolute novice, and have not ridden more than seventy miles yet altogether. What is the distance, and what time do you think it ought to take me? Could you tell me what mileage I ought to do on a gallon of petrol?—J.R.B.

Wood Green is rather awkwardly placed for reaching the Folkestone Road. To miss the traffic you would have to make a very long detour. What we should advise you to do is to start on Saturday or very early in the morning and make for the junction of the Brixton and Clapham roads. Here you will find signposts to Folkestone and Dover. The whole road is signposted by the A.A. and M.U., and you cannot mistake it. The only other alternative is to make your way from Wood Green and go through Green Lanes, Tottenham Hale, past the White Hart, Black Horse Road Station, following the blue road marked on the R.A.C. official map of recommended routes round and across London (which can be obtained, price 1s. 7d. post free, from these offices). This will clearly show you the way of avoiding the traffic. The route marked blue joins the Folkestone Road

just beyond Bromley. The distance from London to Folkestone is seventy-six miles. Driving at twenty miles an hour, it would take you about four hours. You could probably run about 60 m.p.g.

### Engine Stiff at Starting.

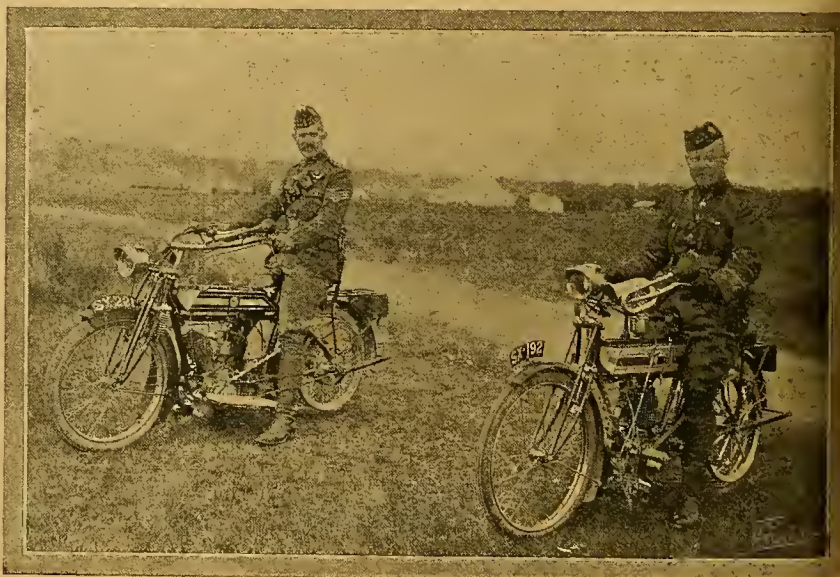
**?** I have a 1912 F.E. motor cycle, and when starting it up for the first time each day it gives a lot of trouble before it will start; it is almost as much as I can do to pedal round with the exhaust up, but directly it has once started it runs beautifully and will start up again perfectly. I have tried injecting petrol, but this only helps a little. Is the piston a little too tight? I should be obliged if you would tell me what is wrong and how to remedy it.—R.H.W.

If the piston moves easily in the cylinder of your engine after the engine had been running it looks as if you might possibly be giving the engine too much oil, and do not put enough petrol into the cylinder when starting from cold. It is unlikely that the makers would fit a piston that was too tight, but it is possible that expansion of the cylinder under heat might enable a slightly tight piston to run freely.

### Starting from Cold.

**?** My mount is a 1912  $3\frac{1}{2}$  h.p. two-speed. I find it rather difficult to start by means of the kick starter when the engine is cold, and in consequence wish to fit dry battery and coil ignition only for starting purposes, using the Lodge two ignition plug. Will you please let me know whether this is practical. I take it that the contact breaker can easily be fitted in continuation of one of the gear wheels that drive the magneto. The coil and battery will be carried in the sidecar.—INDIA.

You do not want battery ignition to enable the engine to start readily when cold. The trouble is that the engine is not free, and therefore does not revolve quickly enough to get a good spark and suction on the carburetter. If you inject a little petrol or paraffin through the compression tap to ease the piston ring before starting, you will find the engine will start quite readily with a kick starter. We should not advise you under any circumstances to attempt fitting dual ignition, although it could be fitted, as you say, to a continuation of one of the gear wheels that drive the magneto; it would, however, be a costly process.



MILITARY MOTOR CYCLISTS. Sergt. Chalmers (Rex-Jap) and Lieut. Forsyth (Triumph) in camp with the 10th Royal Scots (Cyclists) at Barry Camp, Forfarshire.



# DUNLOP SUCCESSES

in the Six Days' Trials.

**3 SPECIAL PRIZES** WON ON **DUNLOP BELTS.**

**10 GOLD MEDALS** WON ON **DUNLOP TYRES.**

**14 GOLD MEDALS** WON ON **DUNLOP BELTS.**

**4 SILVER MEDALS** WON ON **DUNLOP TYRES.**

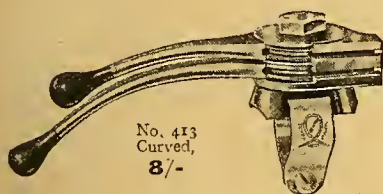
**3 SILVER MEDALS** WON ON **DUNLOP BELTS.**

**2 BRONZE MEDALS** WON ON **DUNLOP TYRES.**

**3 BRONZE MEDALS** WON ON **DUNLOP BELTS.**

THE DUNLOP PNEUMATIC TYRE CO., LTD., Aston Cross, BIRMINGHAM; Alma Street, COVENTRY.  
BRANCHES—London, Nottingham, Manchester, Newcastle, Bristol, Leeds, Liverpool, Glasgow, Dublin, Belfast.

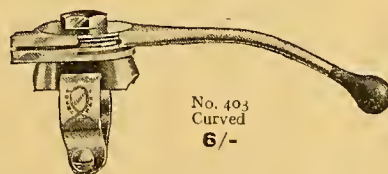
## BOWDEN CONTROL LEVERS



No. 413  
Curved,  
8/-



See that all your levers bear the **Genuine Trade Mark**—It has no name of a Town beneath it—only just **REGD.**



No. 403  
Curved  
6/-

When buying control levers see that you profit by the years of expert concentration which alone has made our levers as perfect as they are. Those illustrated above are our best pattern single and double control levers. They are made from solid stampings, and can be supplied for right or left hand, and in two designs; straight or curved. Similar levers made from pressed steel can be supplied to give one, two, or three operations at 4/-, 6/-, and 9/- respectively.

Please send for our 1912 Catalogue, and note that our only address is—

**BOWDEN WIRE, LTD., Pratt St., Camden Town, LONDON.**



# HUNTS Ltd.

The City &amp; West End Motor House,

117, Long Acre, London, W.C.

RELIABLE ACCESSORIES AT

LONDON'S LOWEST PRICES.



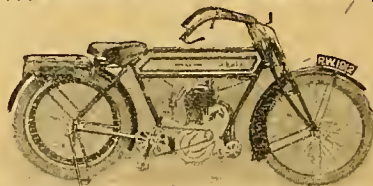
The Bowden Rapid Valve Grinder and Spring Lifter.

Price 7/6. Postage 4d.

and will grind in a valve perfectly, in a fraction of the time taken by other devices.

The BOWDEN RAPID VALVE GRINDER has been introduced to make valve grinding easy, certain, and expeditious. It can be operated in any position on any machine without dismounting the cylinder.

MOTOR CYCLES in stock for immediate delivery.



RUDGE-WHITWORTH (in stock).

1912 3 1/2 h.p. Multi-speed Model, with free engine, multi-plate clutch, pedal engine starter, and multi-speed gear: price £60 0

ZENITHS, with the Gradua Gear (in stock).

1912 3 1/2 h.p. Model £55 13 1912 6 h.p. Model £70 7

BRADBURY (in stock).

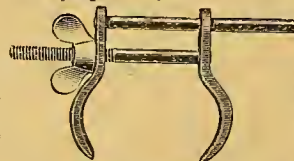
1912 3 1/2 h.p. Standard Model ..... £43 0

TRIUMPH.

1912 3 1/2 h.p. Free-engine Model ..... £55 0

DOUGLAS (in stock).

1912 2 1/2 h.p. Twin, Model G ..... £41 0



The Hunt Chain Grip.

This useful little accessory draws the chain together and holds same in position while the rider inserts the bolt and nut for fastening.

Price 1/6. Postage 2d.



THE HUNT MAGNETO KNIFE. A useful little tool.

BOSCH MAGNETOS ARE THE BEST

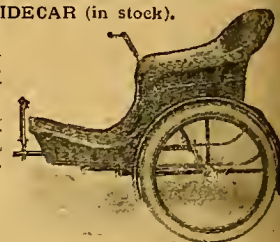
FILE: For smoothing down Platinum Points to secure even contact. GAP GAUGE: For setting Platinum Points correctly. KNIFE: The utility of which every motorist will appreciate.

Price 1/- Postage 1d.

THE HUNT 1912 IMPROVED MODEL SIDECAR (in stock).

Upholstered wicker chair, cushion, detachable clips, 26 x 2 1/2 in. tyre. A strong and reliable sidecar at a popular price, stocked to fit all motor cycles.

Price £5 15s.



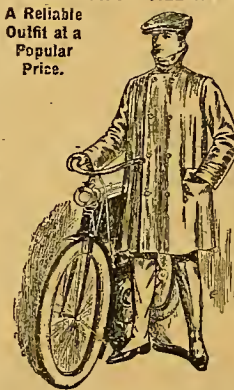
MILLFORD SIDECARS (in stock).

1912 Herald, improved model ..... £6 6 0

1912 Rigid Model, with wicker body ..... £9 9 0

THE "ALL-WEATHER" SUIT.

A Reliable Outfit at a Popular Price.



Manufactured in double texture fawn water-proof material. Coat, double breasted, wind and rain cuffs, storm collar, throat tab, ventilated under arms, two side pockets with flaps. Leggings manufactured of the same material to match, with straps for attaching to brace buttons, spat feet. Stock sizes: Coat, length 36 in., chest 40, 42, 44 in. (size taken over coat). Leggings, full length 34 in., length in leg 29 in. Price of suit complete £15 0 Coat only .. £6 17 6 Leggings only 0 7 6 Postage 6d.

100 page illustrated catalogue post free.

## The L.M.C. for RELIABILITY.

Alford, Lines.,

Aug. 16th, 1912.

Dear Sirs,—I should like to take this opportunity of letting you know how very pleased I am with the machine. The engine seems so much more powerful than other 3 1/2 machines and lately I have been using a sidecar. Have just come up here from Portsmouth, 218 miles in one day.

Yours faithfully,

R. M. G.

(Surgeon, R.N.).

# 100%

## SUCCESS in the SIX DAYS' TRIALS.

Four L.M.C.'S took part in this strenuous test

# All Four Finished

AND SECURED

## 3 GOLD MEDALS and 1 BRONZE MEDAL.

THE IDEAL MACHINE FOR TOURING IN THE L.M.C.

Makers: The LLOYD MOTOR ENGINEERING CO., LIMITED,  
L.M.C. Works, Monument Road, BIRMINGHAM.

309, Monument Road, Birmingham,

August 15th, 1912.

Dear Sirs,—I wish to acquaint you with the satisfaction I feel at the performance of my new 4 h.p. L.M.C. motor bicycle.

I have recently put the machine to a severe test, having accomplished 400 miles in four days with a sidecar and 16 stone passenger, myself, the rider, 10 stone 6 lbs., and personal luggage totalling up to 30 stone.

During start of this ride we encountered several very bad hills viz., on the Brighton Road, all of which the machine surmounted, the Sturmer-Archer Three Speed Gear showing a valuable acquisition.

In conclusion, I may say that the machine easily surpasses all my expectations in the amount of power developed.

Yours faithfully

(Signed) J. B. PAYNE.



**The Isle of Wight.**

? Will you kindly let me know what it costs to take a motor and sidecar from Portsmouth to the Isle of Wight? Are the usual licences available, and are the roads on the Island good?—A.C. The cost of transport from Portsmouth to Ryde is 1s. 6d. The Isle of Wight is as part of the county of Hampshire, so the licences are the same. The roads in the Island are good but winding and hilly.

**Adjustable Pulleys.**

? I have had considerable trouble with my adjustable pulley. The cap which keeps the locking nut for the near side of the flange comes off. The old pulley was right hand thread, and when I lost a cap it screwed up and spoilt the thread. I had a new pulley fitted recently. This had left hand thread, but the cap soon came off. I had just adjusted the pulley, and had screwed the cap on as much as I could, standing on the pedal to get it tight; yet it came off when I ran the engine on the stand to see if it was all right. I have an Armstrong three-speed gear. Would a plain pulley suit me? I always run with sidecar.—J.B.

makers should be able to advise you a case of this kind. If their method of locking the flange is not satisfactory they should supply you with a pulley that is reliable. We have always understood that the locking ring should be a right hand thread and the flange a left hand. You can easily obtain an adjustable pulley which will give you no trouble. Your old pulley will probably have to be sent for the makers to bore their pulley to the correct taper, or you could order it with a plain hole and get it tapered locally.

**A First Machine.**

? I am intending to purchase my first motor cycle in the course of the next week or two and shall esteem it a favour if you will assist me to a decision. (1.) Is it advisable for a novice to choose a lightweight, and if so, on what ground? (2.) Would the vibration from a single-cylinder lightweight be such as to render a twin desirable? (3.) How would the cost of running such a twin compare with that for a single? (4.) Would such a motor cycle be capable of taking anything but a "freak" hill on top gear, or would it be advisable to have a variable gear to compensate for the low horse-power? (5.) Do you advise a second-hand motor cycle for a novice entirely without technical knowledge?—F.J.T.

(1) It depends entirely on the man. If the novice is an old pedal cyclist and not over 35 we should not recommend a lightweight in preference to a heavyweight if the prospective owner likes a little speed occasionally. The only reason why we sometimes recommend that a novice should choose a lightweight machine is because, generally speaking, a lightweight is easier to handle and control, and, in these days of variable gears, a lightweight of good make is truly fast on the top gear, and will climb practically anything. (2.) Not if the machine is fitted with a well balanced

single-cylinder engine. A twin is, of course, more comfortable than any single, and if you require to have the least vibration, doubtless a good twin would be desirable. (3.) The additional cost of running would be hardly noticeable with a twin, the cubic capacity of which did not exceed that of the single by very much. (4.) We always advise a variable gear in any case. (5.) A second-hand machine not more than a year old would be almost as good in the hands of a novice, or anyone else, as a new one, but you ought to have expert advice before purchasing.

**An Explosion in the Crank Case.**

? I should be much obliged if you could explain to me the cause of a cylinder explosion. My cycle is a 3½ 1909 model, mageto and h.b.c., and one morning I took it out to have a run but could not get it to start. (I was surprised, as it started quite easily the previous evening, but before doing so I noticed a bluish spark come from somewhere near the plug.) I tried to start it on the stand and the pedals went round quite easily, but as soon as I dropped the valve lifter the cylinder broke into pieces, also breaking lower part of piston. I noticed after flooding the carburetter it seemed to overflow and stream out from the bottom of the jet chamber for a few minutes and then stop. Would this have anything to do with it?—J.T.

The bluish spark you mention coming from somewhere near the plug was obviously a short circuit. The explosion apparently occurred in the crank case below the piston and, therefore, must have been caused by a collection of vapour in the crank case. Had the spark you

mentioned set fire to vapour arising from a flooded carburetter it would not have burst the cylinder and broken the piston. It would simply have burst into flame. How the petrol got into the crank case we cannot imagine, but if the explosion had occurred above the piston it would have blown off the combustion head, whereas occurring below the piston it has broken the cylinder off above the flanges. It is difficult to account for these explosions without being in close touch with the machine at the time of the accident.

**EXPERIENCES WANTED.**

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"BD 1355" (Irthlingborough).—G.W.K. cyclecar.

"Dono" (Scotland).—Marlborough light car.

"G.W.J.M." (Kent).—Wilkinson T.M.C. for solo and passenger work, particularly as regards flexibility.

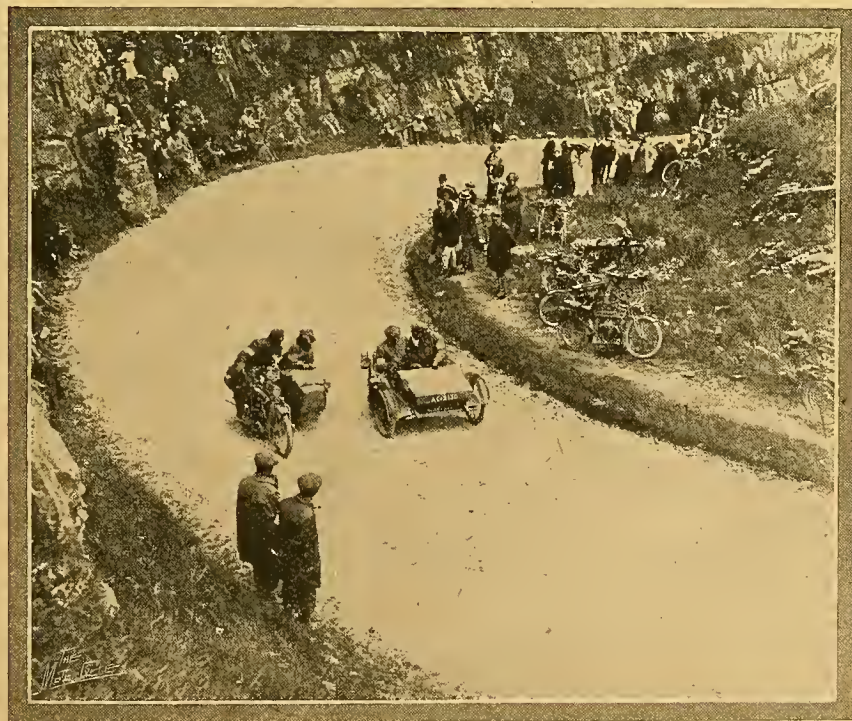
"S.C." (Fulham).—1911 T.M.C. with sidecar for business purposes. General reliability, wear of gears and tyres; also, 1911 F.N.

"J.P." (Capetown).—8 h.p. Matchless and sidecar. Running cost, petrol consumption, double belt drive, and change-speed gear.

"W.T." (Mysore).—5 h.p. four-cylinder F.N. and four-cylinder T.M.C. with sidecar. Hill-climbing, speed, and upkeep.

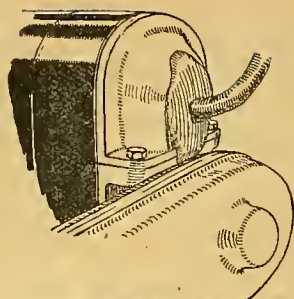
"J.W.A." (Jersey).—Roc two-speed gear fitted to Humber.

"E.A.L." (Brixworth).—1912 3½ h.p. two-speed Kerry-Abingdon.



IN CHEDDAR GORGE. R. C. Davis (Chater-Lea sidecar) and F. Hill (A.C. Sociable), Six Days' Trials competitors, climbing the ascent through Cheddar Gorge, abreast.





Several competitors in the Six Days' Trials had trouble with water entering the magneto. It usually runs down the high tension wire. Our sketch shows a simple remedy. Obtain a good tyre patch, cut a hole in the centre and force the wire through it.

#### Sidecar Wind Screens.

J. A. Taylor and Co., 241, Balfour Road, Ilford, Essex, inform us that they hold the sole patent rights for sidecar screens, and have obtained an injunction against infringers of their design.

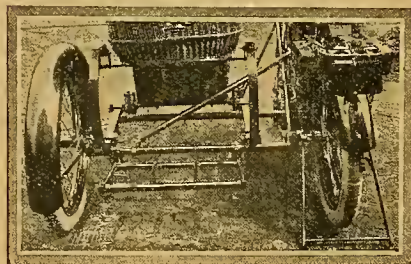
#### Catalogues Received.

A very voluminous catalogue is published by the Rotax Motor Accessories Co., Ltd., 43-45, Great Eastern Street, E.C. A speciality is the Rotax motor cycle lamp, the generator of which is somewhat of a departure from the usual form. Some very neat tool kits are also listed, and a variety of tools of interest to motor cyclists.

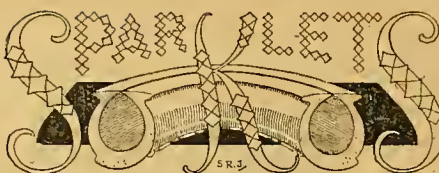
The latest 1912 catalogue of Hunts, Ltd., 117, Long Acre, W.C., is particularly well got out, and lists everything from complete motor bicycles and sidecars to the smallest accessory.

The Lukin carburettor is a most interesting device, and a study of the method of construction will interest the majority of motor cyclists. The carburettor is fully illustrated and described with lettered drawings in a new catalogue just published by Lukin, Ltd., The Ride, Newcomen Street, Borough, London, S.E.

We are in receipt of the latest catalogue of the A.J.S. motor cycle (A. J. Stevens and Co., Ltd., Retreat Street, Wolverhampton), which is one of the most popular up-to-date lightweights in the kingdom. The models described are the 2½ h.p. lightweight and the 5 h.p. passenger machine. Each model is lucidly explained, and illustrations and drawings are given of the gear box and component parts thereof, and the transmission. In the Six Days' Reliability Trials, out of the five machines entered four gained gold medals and one a silver medal, the latter losing the fifth gold medal by 18 marks.



A new luggage grid, a special fitting which may be obtained with the Enfield sidecar combination.



#### Belt Fasteners and Belt Drifts.

The Aston Motor Accessories Co., Talford Street, Aston, Birmingham, give a guarantee for one year with their belt fastener and belt drift, and claim that the fasteners are practically unbreakable. The belt drift forces the canvas of the belt sideways instead of cutting it, thereby increasing the life of the belt at the joint.

#### Business Announcements.

H. Martin and Co., Leslie Grove, East Croydon, are enlarging their premises and forming themselves into a limited liability company.

P. Platt, the well-known Bradbury rider, will shortly open premises at 129, Union Street, Oldham. He will hold the sole agency for Bradbury and other well-known motor cycles.



G. W. Baker (2½ Singer) who covered 3 miles in 3 min. 42½ secs. and 5 miles in 6 min. 40 sec. on the New Brighton track on Bank Holiday Monday.

#### A Good Record.

A Pedley belt was used on George Griffith's 6 h.p. Zenith Gradua which obtained a gold medal in the Scottish Six Days' and also in the A.C.U. Six Days' Trials.

#### American Police and Speedometers.

It is well known that the American police use the motor cycle to a very large extent in the execution of their duties. All their mounts are equipped with speedometers, and the Jones is the favourite among them. The facsimile of a letter has been shown to us, received by Markt and Co., Ltd., 98, Clerkenwell Road, E.C., from Captain Stiles, West Chicago Park Commissioners, Police Department, who is most enthusiastic concerning the accuracy of these speedometers.

#### Sparking with a Big Gap.

We had a very curious experience the other day with a sparking plug. The plug became damaged through the breaking of a valve, with the result that the electrode attached to the body of the plug was bent inwards, so that a plug gap of slightly over ¼ in. was left. Some experts who saw the plug bet the owner that he could never start the machine or get it to fire with the gap. However, the bet was accepted, the plug was put in, and at the second revolution of the pedals the engine started, and fired fairly regularly. The magneto was the new waterproof Bosch, and the experience related speaks well of the excellency of its sparking powers.

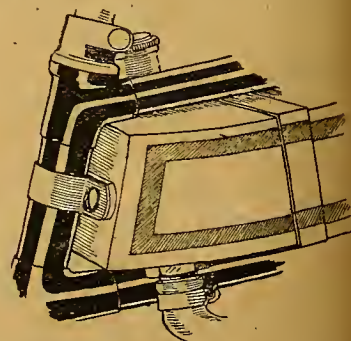
#### Fan Dynamometers.

We are asked to point out that the description of engine testing by means of fan brake dynamometers published in our issue of March 21st, and used by Rudge-Whitworth, Ltd., is W. G. Walker's patent. This firm have now issued a license to Rudge-Whitworth, Ltd., to use and manufacture dynamometers for their own use, and are willing to grant licenses for others. The address of the firm is W. G. Walker and Co., Emery Hill Street, Victoria Street, Westminster, S.W.

#### Six Days' Trials Notes.

Winners of ten gold, two silver, and two bronze medals in the A.C.U. Six Days' Trials used Monogram oil as their lubricant.

The 6 h.p. Royal Enfield sidecar combination driven by H. V. Colver in the Six Days' Trial was taken out on the one fine day last week, without any overhauling, for a test up Sunrising Hill. The passenger seat was occupied by Mr. J. Urry, of Birmingham, by no means a lightweight, and after running at top speed from Redditch, Sunrising was climbed without a falter. A few minutes afterwards the same machine made another ascent with three up, including the driver. Directly afterwards another ascent was made from a start some distance up the hill, with Mr. Urry in the sidecar and another passenger on the carrier. Thus, the machine which had undergone the strenuous Six Days' Trial demonstrated that it had lost little, if any, of its tune by making three ascents of Sunrising within a quarter of an hour, and on two ascents the combined weight of the driver and two passengers totalled 35 stones.



Water tank on Comet-Precision, fitted with Green engine.



# A.C.U. Six Days' Trials.

5 ZENITHS ENTERED,  
5 ZENITHS FINISHED,

Gaining

5 MEDALS, 3 Gold,  
2 Silver.

Though there were no less than 47 retirements, every Zenith came through.

The **ZENITH** also gained  
The **1<sup>ST</sup>** **BELT PRIZE**

(Presented by "Motor Cycling"),

**BEATING IN THIS RESPECT EVERY OTHER MAKE.**

N.B. There was no trouble on machines fitted with the

## Gradua Gear.

The Standard Road Gear was used.

See Report in "The Motor Cycle."

"It can be said without contradiction that the Zeniths and N.S.U.'s are the nearest to standard of any machines in the trial, consequently their reliability is known."

In addition to the BELT PRIZE, the **ZENITH** was specially mentioned for lightness on tyres—"Motor Cycling" said "the back cover on Griffith's heavy twin Zenith being in particularly fine condition."

**ZENITH MOTORS LTD.,** { Phone—No. 4. } **WEYBRIDGE.**  
Contractors to War Office. { Telegrams—"ZENITH." }

Spares stocked in London by  
Robertson's, 157, Gt. Portland Street, W.





THREE RIBBED.

STEEL STUDDED.

# SPENCER MOULTON

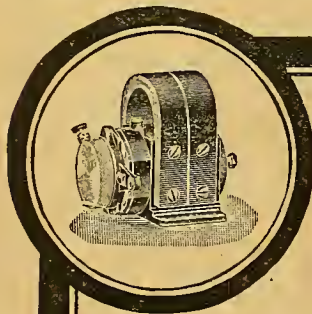
## MOTOR CYCLE TYRES

Made in three kinds—three-ribbed, steel studded, and standard heavy. The same excellence of quality obtains in these covers as in our well-known motor tyres.

Full particulars and prices on application to—

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London: 77 & 79, Cannon St., & C. KINGSTON MILLS,  
Glasgow: 65 & 67, Bothwell St. BRADFORD-ON-AVON,  
Leeds: 68, Albion Street. WILTS.



## MORE SPEED

on less fuel consumption is but one of the many advantages of fitting the

# 'U.H.' MAGNETO.

No ignition trouble with "U.H." It will make your engine doubly efficient, and will give it increased power on hills.

Booklet of the "U.H." Free.

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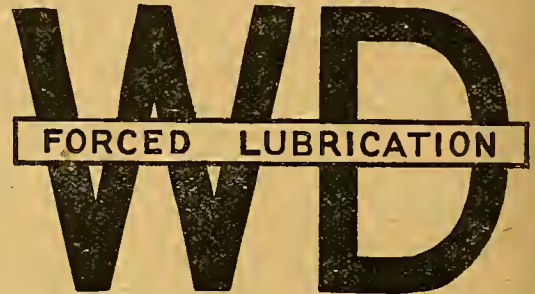
115, Southwark St.,  
LONDON, E.C.

'Grams: "Widerstand, London."  
'Phone: 5112 Central.

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THE MACHINE FOR 1913 & AFTER.

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A BIG ADVANCE IN ENGINE DESIGN.  
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LONDON-EXETER M.C.C. TRIAL.....GOLD MEDAL  
COVENTRY RELIABILITY TRIAL.... LOST NO MARKS  
HILL CLIMBING TRIAL M.C.C.....SILVER MEDAL.

NO WEAR.

NO WORRY.

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HARNALL LANE,  
COVENTRY.

## 4¼ REGAL PRECISION

FOR SIDECAR WORK GIVES JUST THAT LITTLE EXTRA POWER  
THAT YOU WANT.

Single Cylinder, 89x96 in/m., 600 c.c.

Extra strong frame and forks, that you can always rely upon.  
Extra large tank capacity, with detachable sump and petrol  
filter.

Extra low saddle and comfortable riding position.

Sturmey-Archer 3-speed, or Bowden or Roc 2-speed.

Excellence of practical design and finish, heaps of good points.  
That little "extra" all round that makes "just the difference."

Immediate Delivery.

ERNEST SMITH & WOODHOUSE, Ltd.,  
88, John Bright Street, BIRMINGHAM.

LONDON AGENTS: H. G. MILLS & Co., 15, Woodhouse Parade, North Finchley



## The Guest Decompressor. PATENT.

THE little article illustrated herewith makes motor cycle starting simplicity itself, and not an athletic feat as heretofore.

EASY TO START THE ENGINE, AND  
GOES DEAD SLOW IF REQUIRED.  
SIMPLE TO FIT.

SUITS ALL STANDARD MACHINES.  
FITS INTO EXHAUST CAP.  
NOTHING TO GET OUT OF ORDER.

Price 12/6 each.  
Postage 4d.

GUEST DECOMPRESSOR CO.,  
107, HIGH ST., WEST BROMWICH



# Reduced Prices

at end of Season.

**MATCHLESS.  
HAZLEWOOD.  
A.S.L.  
CALTHORPE.**

ACCESSORIES.

REPAIRS.

THE  
MOTOR  
MAINTENANCE  
COMPANY  
L<sup>td</sup>

Established -

1907.

**184, Great Portland Street, W.**

Tele { phone: 4839 Mayfair.  
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## THE BLUEMEL MASCOT :: PLUG ::



MODEL S for Motor Cycles.

**WILL** get the last ounce out of your engine.

**WILL** stand up to the hardest work it can be possibly put to.

**WILL** do so consistently for a greater length of time than any other plug.

**WILL** regularly fire the weakest mixture, and

**WILL** give you the much desired immunity from ignition troubles.

Write for List, Motor Cycle Dept.,  
**C. W. BLUEMEL & BROS.**  
WOLSTON, near COVENTRY.

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**Great End of Season  
Clearance of**

**MOTOR CYCLES AND  
SIDECARS.**

If you are contemplating the purchase of a Motor Cycle or Sidecar, do not fail to pay a visit to

**Harrods Motor Showrooms**

and view the examples of every make of machine which are there being offered side by side.

**DO NOT FORGET** that if you require a runabout or Cyclecar Harrods can offer you the best selection for immediate delivery in London.

**ANY MAKE SUPPLIED  
ON HARROD UNIQUE  
SYSTEM OF PURCHASE  
BY DEFERRED PAYMENTS.**

**HARRODS, LTD.,  
BROMPTON ROAD, S.W.**

RICHARD BURBIDGE, Managing Director.





## An exceptionally popular and thoroughly successful TWO-SPEED HUB

### "MILLENNIUM" MAKE.

It is centrally designed—operated by one foot lever—dust and waterproof. Its simple, straightforward construction renders mistakes impossible. Both gears controlled by friction clutches. Unimpaired efficiency on high gear. Makes control equal to motor car. Essential to sidecar machines. Can be fitted to almost any machine.

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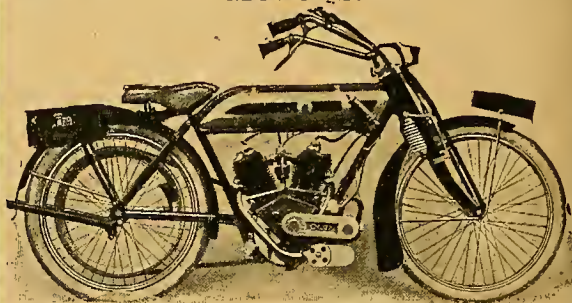
**LAKE & ELLIOT, LTD.,**  
Albion Works, Braintree, ESSEX.

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PRICE £10.  
Ready to build up.

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6 and 8 h.p. Models.

The finest machine in the world for

### Design, Workmanship, & Finish

R.A.C. MEETING, BROOKLANDS, July 27th. 5½ Mile Race. H. Reed on DOT from Scratch finished first. Speed, 73 M.P.H.

MERSEY MOTOR CLUB HILL CLIMB, Sat., Aug. 3rd. H. Reed on DOT, fastest time of the day.

Write, 'Phone (2125 Central), or call—

**H. Reed & Co.,** 306, Deansgate, Manchester.

Sole Agents for Manchester & District for the Canoclet Sidecars.

Applications for Agencies invited.

London Agents—The Service Co., Ltd., 292, High Holborn, London, W.C.  
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All Goods and Repairs to Ellesmere Street, Hulme.

## AMAC=====AMAC

A.C.U.

### SIX DAYS' RELIABILITY TRIALS.

36 Machines fitted with  
**AMAC CARBURETTORS**

Result:

**15 Gold Medals.**  
**6 Silver Medals.**  
**6 Bronze Medals.**

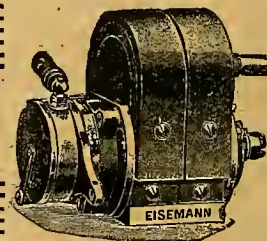
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Private Owner, Enfield, AMAC.  
Best Performance on Hill—Pass. Class:  
Private Owner, Enfield, AMAC.  
Best Performance, Slow Running on Hill—Pass. Class:  
Private Owner, Matchless, AMAC.  
Countisbury Slow Hill-climb—Motor Bicycle Class:  
Won by A. R. Penny, A.J.S., AMAC.  
—Pass. Class:  
Won by A. J. Stevens, A.J.S., AMAC.  
Whitby's Gap Slow Hill-climb—Motor Bicycle Class:  
Won by G. L. Fletcher, Douglas, AMAC.  
—Pass. Class:  
Won by A. J. Stevens, A.J.S., AMAC.

ASTON MOTOR ACCESSORIES CO., LTD.,  
TALFORD STREET, ASTON, BIRMINGHAM.

## AMAC=====AMAC

### MAXIMUM ENGINE EFFICIENCY.

FITTED  
ON  
HUMBER  
MACHINES.



FITTED  
ON ALL  
RUDGE  
MACHINES.

## EISEMANN MAGNETO

was used by Mr. V. Taylor (Rudge),

**THE WINNER OF THE  
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43, BERNERS ST., OXFORD ST., LONDON, W.  
Telephone: No. 4601 City. Telegrams: "Rousillon, London."

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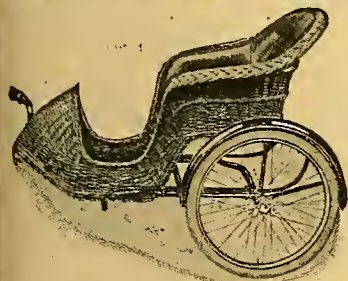


# CORONET SIDE CARS

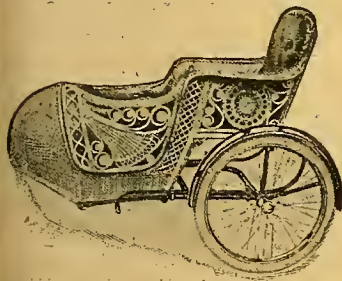
## SAVE YOUR POWER

Fitting a Coronet. Light, strong, and scientifically constructed by experienced mechanics; 3½ h.p. machines take them easily.

CAN BE OBTAINED FROM ALL DEALERS.



Model 1. High class Canoe-mount Body, Cranked Axle, and other improvements, £6 6 0.



Model 4. Ornamental Cane Body, as illustration, or Close Reel Cane Body, £8 8s.

## 1 H.P. PRECISION ENGINES.

We have a large stock of these powerful single-cylinder sidecar engines. We can supply them fitted with magneto, carburetter, etc.

## WE WANT YOUR ENGINE. DO YOU WANT MORE POWER.

We will make a liberal allowance for your engine in exchange for one of the above PRECISIONS. There is no excuse now for being under-powered.

### MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from £6. Your old coil and acc. taken in exchange.

**SPRAYS.** Your old carburetter taken in exchange. Liberal allowance. Ask for quotation.  
**WAGS.**  
**WAGS.** and B's.

**BOOTH'S MOTORIES,**  
KEIGHLEY MILLS, BEDFORD ST. NORTH  
(off Pellon Lane), HALIFAX. Tel. 1062.

## MOTOR BICYCLES FOR SALE.

FOR Prompt Delivery:

6 h.p. Royal Enfield, 2-speed, and sidecar; £84.

3½ h.p. Humber, 2-speed; £52/10.

3½ h.p. N.S.U., 2-speed; £53/15.

2½ h.p. Royal Enfield, 2-speed, slightly soiled; £45.

2 h.p. Humber; £35.

3 h.p. N.S.U. Twin, 2-speed, used for demonstration purposes only, good as new; was £49, now £43.

W. HARRISON and Co., 73, Bold St., Liverpool. [X1118]

HEBDEN'S Great Sale.

THESE are all there is left.

BE quick to secure the bargains.

1912 Rudge Multi (shop-soiled); £54.

1912 Free Engine Triumph, shop-soiled; £50.

1912 Humber 2-speed and canoelet sidecar; usual price £65/2, now £39/10.

1912 James 2-speed and canoelet sidecar, kick starter; £73/3, now £65.

1912 New Hudson (Jap). 3-speed; £59/17, £53.

1912 2½ h.p. Premier 3-speed; £46/10, now £37/10.

1912 Free Engine Rudge, shop-soiled; £49.

1912 Free Engine Triumph, unpacked.

1912 T.T. Roadster Triumph, unpacked.

1912 Multi-speed Rudge unpacked.

2ND-HAND.—1912 Free Engine Rudge, as new; £45.

1912 Lady's Douglas, 2-speed and clutch, as new; £44.

1911 T.T. Triumph, as new; £39/10.

1911 T.T. Rudge, as new; £33.

1911 Lincoln Elk, 2½ h.p.; £17/10.

1909 Standard Triumph; £28.

1909 Rex, 3½ h.p.; a gift, £19.

1909 N.S.U., 3½ h.p., 2-speed; £20.

VINDEC special and Sidecar, 5-6 h.p., free engine; £20.

3 h.p. Triumph, mag., Draids, splendid condition; £16.

ALL the above machines are in first-class order and all fitted with mag. and up-to-date fittings; no rubbish, but every one an absolute bargain, and can only be had from Hebdens's Motor Mart, Burnley. Tel.: 488. [4578]

BOLTON.—1912 free engine Premier, in new condition; any trial; £40, or near offer.—Below.

1910 Free Engine Triumph, in very good condition; any trial; £35, or exchange.—Below.

1909 Triumph, one of the most reliable machines on the road; any trial; £28.—Below.

BOLTON.—1912 T.T. roadster Triumph, just run 1,000 miles, very fast machine, and is just as new; cost with all accessories £60 nine weeks ago; will accept £50, or exchange.

PARKER, Stanley Garage, Westbrock St., Bolton. Phone: 1348. [X1834]

1911 Bradbury, splendid order; must sell at once; £29.—103, Waterloo Terrace, Ashton, Preston. [X2001]

1912 T.T. Singer, practically new; £37, or exchange Douglas.—2, Victoria Buildings, Fishergate, Preston. [X2000]

1912 Peugeot, 3½ h.p., tyres good, lamp, horn, etc.; £35.—Halstead, 15, Church St., Briercliffe, Burnley. [4409]

1909 Triumph, new condition, new tubes, new cover, accessories, back rest; £26/10.—17, Moorgate, Bury. [X1995]

1911 Bat-Jap, 3½ h.p., spring frame, splendid condition; £32.—Watson, Crow Trees, Addingham, Ilkley. [4474]

DOUGLAS, 1910½ engine overhauled and renewed makers, new tyre; £22.—2, Coronation St., Haslingden. [X2007]

TRIUMPH, 1909, in splendid order and condition; accept £24 for immediate sale.—65, Hilden St., Bolton. [X1948]

## MAKE YOUR OFFER.

We like cash buyers. If you are in a position to pay cash, make us an offer for any machine on our list. We will accept if at all possible. You can save pounds.

List Price £47 10s.

Our Price £36 10s.

Saved - £11 0s.

We offer a High-grade Machine, namely, a BRAND NEW

1911½ 3½ h.p. PREMIER

at a REDUCTION of £11.

Fitted with all improvements. Fully guaranteed. Delivery from stock.

FOR £10 EXTRA

we can supply above machine fitted with Armstrong or Sturmey-Archer 3-speed gear. Just the thing for Sidecar work.

CLYNO, 1912, only run 200 miles	£57 10
HUMBER, 1911, 3½ h.p., 2 speeds, handle starting, and Millford sidecar	£40 0
PREMIER, 3½ h.p., 1911 model	£30 0
N.S.U., 2 h.p., 1910, 2-speed, and new sidecar	£38 10
N.S.U., 3½ h.p., 1908, magneto, 26in. wheels	£13 10
REX, 3½ h.p., 1908, spring forks, magneto	£16 10
Twin DOT, 7-9 h.p., 2-speed, handle starting, with sidecar	£36 10
CLYNO, New, 1912 model. In stock	£57 5
VINDEC, 5 h.p., 1910, 2-speed	£35 0
REX, twin, 1910, Speed King	£23 0
REX DE LUXE, 5 h.p., twin, 1911, M.O.V., with £12 12s. Rex sidecar	£47 10
REX, 3½ h.p., vertical engine magneto	£8 10
BRADBURY, 1910, 3½ h.p.	£20 0
HUMBER, 1910, 2-speed gear	£29 10
SAROLEA 5 h.p. Tricar, P. and M. gear	£10 10
ENFIELD Lightweight, 1910	£18 10
QUADRANT, 3½ h.p., magneto, spring forks	£16 10
DAVIS DOUBLE, 1911, 6 h.p. J.A.P. 2-speed gear; cost £94	£24 10
DARRACQ 9 h.p. 2-seater Car, 3 speeds and reverse	£15 10
3 h.p. CLYDE, M.O.V. magneto	£8 10
WOLF Lightweight, 1910	£10 0
QUADRANT, 3 h.p., vertical engine	£5 10
HUMBER Tricar, open frame, wheel steering, water-cooled	£15 0
REX DE LUXE, 7 h.p., 1911, 2-speed	£40 0
CLYNO, 1912, run 300 miles.	£52 10

PUSH CYCLES TAKEN IN EXCHANGE.

### ENGINES.

7 h.p. Twin REX, 1911, M.O.V.	£9 10
6 h.p. Twin KERRY, magneto, silencers	£9 10
6 h.p. Twin ANTOINE	£6 0
4 h.p. ORIENT £3 0 3½ h.p. MINERVA	£3 10
2½ h.p. MINERVA £2 10 1½ h.p. MINERVA	£1 10

Exchanges entertained.

### MISCELLANEOUS.

WANTED.—XL All Spring Forks.	
New 1912 B. and B. Carburetter	23/6
B. and B. Carburetter, h.b. control	7/6
Mabon Clutch, fit twin Peugeot	35/-
Nearly new 1912 Senspray	23/6
Bradbury Pattern Handle-bars	6/6
Lower Sidecar; cost £14	8/-
Mabon Clutch, fit 1911 twin Rex	35/-
Long Handle-bars, dropped ends	5/6 and 3/3
Coronet Silencers, up to 5 h.p.	3/3 and 4/3
Fital 2-speed, fit 3½ h.p. Minerva	£3 5
Wide Mudguards, 410.	pair 2/11
B. & B. and Amac, h.b. control	13/3
New Amac Carburetter, h.b. control	18/6
Montgomery Castor Spring Wheel Sidecar	£6 10
Mills-Fulford Sidecar	£3 15
Tubular Carriers, with drop ends	4/6
Cyclecar Chassis, wheel, tyres, P. & M. 2-sp.	£12 10
Sidecar Lamps, show red behind	6/9

## Booth's Motories,

Keighley Mills, Bedford Street North, Halifax.  
Telephone 1062.



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£6 6 0  
£7 7 0  
£8 8 0  
£9 9 0

**THE PORTLAND SIDECAR**

GET  
THAT LIST.

£10 10 0  
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£12 12 0  
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**GUARANTEED FULLY TWELVE MONTHS.**

**EARLY DELIVERIES.**

**ART CATALOGUE POST FREE.**

**1913**

We are now booking orders for 1913 models.

Get our exchange form.

**1912**

Special offers in 1912 models. Immediate delivery ex-stock of

**REXES  
DOUGLAS'S  
SCOTTS  
ZENITHS  
ARIELS  
RUDGES**

Call and inspect or write.

No extra for deferred payments.

**REXES**

We still have for disposal a few brand new and guaranteed 1911½ Rexes, 1912 footboards, magnetos, carburetters, gears, tyres, belts, &c., &c.,

Maker's price .. . 60 Gns.

Our price .. . 51 Gns.

**Cash or Exchange.**

Deferred payment terms £14 with order and 12 monthly payments of 66/8.

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**MOTOR BICYCLES FOR SALE.**

**50/-** Motor Cycles: about half a dozen left. If you want one write for list.—Hitchens, Ltd., Morecambe. [X3687]

**RUDGE, 1911,** good condition, engine re-hushed, very fast; £32/10; deferred or cash terms.—Hitchens, Ltd., Morecambe. [X4001]

**BAT, 1911,** with P. and M. 2-speed gear, perfect condition; £36; cash, or deferred.—Hitchens, Ltd., Morecambe. [X4002]

**HUMBER, 1909,** 2-speed, good order, with sidecar; £30; cash, or deferred.—Hitchens, Ltd., Morecambe. [X4003]

**DOT, 5-h.p., B. and B. carburetter, first-class condition, wants new crank case side, mag, ignition; dirt cheap, £9, no swaps or deferred.—Hitchens, Ltd., Morecambe. [X4004]**

**GRITZNER, 3-h.p., Bosch mag., F.E., B. and B. carburetter, good tyres, enamel and plating first-class; £15/10 cash or deferred.—Hitchens, Ltd., Morecambe. [X4005]**

**KERRY, 2-h.p., a.i.v., B. and B. carburetter, Bosch mag., good tyres, belt, footrests; £13/10, cash or deferred.—Hitchens, Ltd., Morecambe. [X4006]**

**MOTOSACOCHE, 1910, F.E.,** nice condition throughout, liquid spring forks, var. pulley; £16, cash, or deferred.—Hitchens, Ltd., Morecambe. [X4013]

**N.S.U., 3-h.p., m.o.v., B. and B. carburetter, magneto, tyres good order, footrests, stands, pedals; £13/10, cash or deferred.—Hitchens, Ltd., Morecambe. [X4007]**

**REX, 3-h.p., m.o.v., Longemare carburetter, Bosch mag., good tyres, spring forks, 2 brakes, plating good; £17/10 cash, or deferred.—Hitchens, Ltd., Morecambe. [X4008]**

**BRAITHWAITE, 3-h.p., Fafnir engine, a.i.v., B. and B. carburetter, 2 brakes, Ukanets stands, mag., in going order; £12/10 cash, or deferred.—Hitchens, Ltd., Morecambe. [X4014]**

**N.S.U., with 2 speeds, good motor cycle, for sidecar work; deferred terms, £16; cash offers wanted.—Hitchens, Morecambe. [X4009]**

**TO the Knots—Don't be silly and offer us 10/- down and 1/- a week for any of these machines. If you want to buy a good mag. machine for cash, make us an offer. We want to sell, and will answer all letters referring to same per return. If the above prices are too much for you, send for list. We have some in stock as low as 35/-.—Hitchens, Ltd., Morecambe. [X4015]**

**1911 Free Engine Triumph, £41; 1911 2-speed Douglas, £33/10; 1911 Douglas, £31.—Cross, agent, Rotherham. [X2004]**

**KERRY-ABINGDON, late 1911, splendid condition. Little used, tyres good, belt new; £28.—Ralphs, Bristol St., Leeds. [X1669]**

**TORPEDO 2-h.p. Precision, Bosch, B. and B., new July, complete, lamp, tools; £30 cash.—13, Park St., Bare, Morecambe. [X1981]**

**NEW 3-h.p. Lincoln Elk, 2-speed, chain drive; cost £42; sidecar, coach-built, cost £15; offers.—Burrors, Cudworth, Barnsley. [X2002]**

**F.N., 2-h.p., December, 1911, 2-speed and free, perfect condition, excellent tyres; £35.—Reynolds, 32, Downing St., Manchester. [X2012]**

**1911 2-h.p. New Hudson, like new, £31; 1911 3-h.p. New Hudson, Mabon, 29, bargain.—Rimmer, 29b, Liverpool Rd. South, Birkdale. [X1754]**

**1910 2-h.p. Motosacoche, just overhauled, absolutely perfect, many accessories; £18/10.—Leo Scott, Auckland House, St. Helens. [X4462]**

**P. and M., light model, Bosch mag., 2-speed, free engine, spring forks, B. and B. carburetter; £18 cash.—Hempel, Corn Mill, Bingley. [X3724]**

**ROYAL Enfield, 1911½, perfect order, just overhauled; £28/10; parting through illness.—Rev. F. George, 276, Scotland Rd., Liverpool. [X1836]**

**3-h.p. Rover, all new, enamelling, 1912 B. and B. 2 carburetter, belt, accumulator, tyres good; £11.—Richards, 125, High St., Bolton. [X2037]**

**1912 Lincoln-Elk, 3-h.p., 2 speeds, free, kick starter, new condition; nearest £35; consider lightweight part.—20, Kilm St., Beeston, Leeds. [X2051]**

**1912 3-h.p. 2-speed Humber, new last month, perfect; £46, immediate sale.—Barrow, 30, Mayfield Rd., Whalley Range, Manchester. [X4327]**

**3-h.p. Mag. N.S.U., in perfect condition, climb anything, h.b.c., Whittles, horn, 2 brakes; any trial; £14.—Farworth, 16, Pall Mall, Chorley. [X1898]**

**EXCELSIOR, 4-h.p., 1912, still new, free engine, £55, with Millford family sidecar £65 cash.—Motor Exchange, 32, Downing St., Manchester. [X2011]**

**1911 Standard Triumph, absolutely perfect, complete, lamp, horn, spare belt, tube, etc., £34/10, good sidecar, £2/10.—Rockside, Broom Rd., Rotherham. [X2039]**

**TRIUMPH, 3-h.p., 1909½, Whittle, new tyre, recently overhauled, perfect; £31; with new 1912 N.S.U. 2-speed gear, £36/10.—Rocbuck, 19, Somerset Rd., Huddersfield. [X1345]**

**F.N. Lightweight, 1-h.p., Bosch mag., spring forks, 1912 B. and B., good condition, perfect order; £15/10 (instalments if desired)—K., 194, Oxford Rd., Manchester. [X2022]**

**HUMBER Lightweight, 1912, 2-h.p., perfect, all accessories; £25, or near offer.—K., 194, Oxford Rd., Manchester. [X2023]**

**DO IT NOW!**

Delays are dangerous. Prices of second-hands are now at low water mark, and it pays to buy now and, if necessary, resell in March.

Cut your losses and save yourself £ s. d. Below we give a list of New and Second-hand Bargains. All guaranteed and ready for immediate Delivery.

**EXCHANGES, DEFERRED PAYMENTS.**

**CASH OFFERS CONSIDERED.**

**RUDGE MULTI, 3½ h.p., 1912, new.... £60**

**RUDGE CLUTCH, 3½ h.p., 1912, new .. £55**

**REX SIDETTE, 6 h.p., 1912, new..... £75**

**REX DE LUXE, 6 h.p., 1912, new .. £62 10**

**ARIEL, 3½ h.p., 3-speed, new..... £58**

**ZENITH, 6 h.p., 1912, new.... 67 Gns.**

**ZENITH, 3½ h.p., 1912, new .. 53 Gns.**

**SCOTT, 3½ h.p., 1912, new..... £65**

**REX, 3½ h.p., 1912, de Luxe, new ..... £56**

**SPECIAL OFFER.** Almost new, 1912, A.C. Sociable de Luxe model, with hood, screen, and lamps. Guaranteed perfect. Cost **£110**, Accept **£88**

**CLYNO, 6 h.p., 1912, sidecar combination..... £62**

**TRIUMPH, 3½ h.p., 1909, Mabon ..... £25**

**MINERVA, 2½ h.p., good order, ..... £14**

**REX SIDETTE, 1912 model, as new..... £60**

**REX DE LUXE, 1912 model, perfect..... £52**

**PREMIER, 3½ h.p., 1912, 3-speed.... £48**

**PREMIER, 3½ h.p., 1910 model .... £32**

**RUDGE, 3½ h.p., 1911 T.T. model .... £34**

**ARIEL, 2½ h.p., ideal lightweight ..... £10**

**P. & M., 3½ h.p., 1909, 2-speeds, lovely order..... £32**

**DOUGLAS, 2½ h.p., 1911 model ..... £31**

**T.A.C., 7-8 h.p., 1910 model ..... £36**

**INDIAN, 7-9 h.p., 1911, 2-speed ..... £52**

**P. & M., 3½ h.p., 1911 model ..... £50**

**SCOTT, 3½ h.p., 1910 model, and sidecar..... £36**

**F.N., 4½ h.p., 4-cylinder ..... £23**

**A.J.S., 3 h.p., twin, just overhauled .... £27**

**V.S., 5 h.p., free-engine, magneto ..... £28**

**F.N., 2½ h.p., 1910, tricycle, 2-speeds .... £30**

**REX, 5 h.p., tourist model..... £22**

**MINERVA, 4½ h.p., spring forks .... £19**

**ANTOINE, 5-6 h.p., twio, low built .. £19**

**PHOENIX, 8 h.p., car, 2-seater ..... £26**

**ANGLIAN, 2 b.p., lightweight ..... £8**

**ANTOINE, 4 h.p., clutch model..... £12**

**IMPERIA, 2 h.p., handle-bar control .. £8**

**EXCELSIOR, 3 h.p., tricar, 2-speeds..... £12**

**SPECIAL LINE.** Shamrock-Gloria Clearance Belts at half maker's list prices. Send for a length or approval. Money returned if not satisfactory. 3in., 8d.; 3in., 10d.; 3in., 1/-; 3in., 1/2 per foot.

**MAUDES MOTOR MART.**

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**SCOTT'S**

Victoria Motor House, Powell St., Halifax.

ALL MACHINES SEVERELY TESTED BEFORE LEAVING THE WORKS.

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

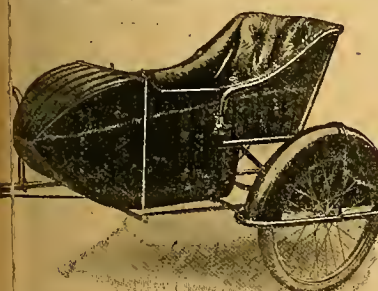
**CLEARANCE SALE!**

One Multi Rudge in stock. First cheque secures. PRICE £60.

RUDGE 2-speed and free-engine and a justable pulley; engine starts with the back wheel on the ground	£56 10
RUDGE free-engine model	£55 0
RUDGE standard	£48 15
RUDGE T.T.	£43 15
ROYAL ENFIELD, 1912, any model	£55 0
SCOTT, 1912, new, first cheque for £56 secures	£55 0
ZENITH-GAZA, new, 3 1/2 h.p.	£55 0
PREMIER, 1912, new, 5 1/2 h.p. Archer 3 speed gear, start with wheel on the ground	£55 0
CLYNO, like new, complete with 12-guinea sidecar	£55 0
P. & M., as good as new, complete with sidecar	£45 0
NEW HUDSON, Lightweight, 2 1/2 h.p. like new, 3-speed gear, a bargain	£33 0
PREMIER, 1912, like new 3 1/2 h.p.	£33 0
RUDGE, Standard 1912, 3 1/2 h.p.	£33 0
PREMIER, 3 1/2 h.p., 1912, complete with sidecar, 1 speeds	£55 0
NEW HUDSON, 3 1/2 h.p., 1912, not done 300 miles, 3 speeds	£46 10
HUMBER, 3 1/2 h.p., 2-speed and free engine, take a sidecar	£29 0
TRIUMPH, 3 1/2 h.p., late 1908, a beauty	£36 0
REX DE LUXE, 3 1/2 h.p., 1911, with 12 improvements, 2 speeds	£36 0
LINCOLN ELK, 3 1/2 h.p., 2-speed and kick starter	£36 0
PREMIER, 3 speeds, 1912, complete with sidecar and numerous spares	£54 0
REX, 5 h.p., 1910, with 1911 improvements, out done 1,000 miles	£34 0
REX, 1910, 5-6 h.p., 2-speed, and free engine complete with sidecar	£35 0
F.N. Lightweight, 1911-12, shaft drive, shop-soiled, complete with 10 worth of spares	£38 0
F.N., 5-6 h.p., fitted with 2-speed gear and free engine at a cost of over £80, a bargain	£38 0
MOTO-REVE, 1911, 3-speed Armstrong, gem, shop-soiled	£29 0
MINERVA, 3 1/2 h.p., h.b.c., magneto ignition, spring forks	£15 0
TRIUMPH, 1907, 3 1/2 h.p.	£20 0

50/- down and 5/- per week secures the following:

Fairair, 2 1/2 h.p., h.b.c.	£8 10
Quadrant, 2 1/2 h.p., spring forks	£8 0
R.X. and Forecar, complete, with free engine, h.b.c.	£14 0
2 Motor Cycles, Kerry and Lloyd's, want slight repairs	£5 0
3-guinea Sidecar, second-hand	£4 4



As illustrated, 10 GUINEAS.  
Write for Sidecar Catalogues.  
We claim to have the finest and strongest Sidecar on the market. No fear of wheel dropping off.  
**WATFORD SPEEDOMETER**  
11 Models. Liberal allowances made on old ones.

As illustrated, 10 GUINEAS.  
Write for Sidecar Catalogues.  
We claim to have the finest and strongest Sidecar on the market. No fear of wheel dropping off.  
**WATFORD SPEEDOMETER**  
11 Models. Liberal allowances made on old ones.

**MOTOR BICYCLES FOR SALE.**

1912 Models at reduced prices: Triumph £55, Zenith £50, Premier 3-speed £50, Enfield 2-speed £42, Colcott £29; all brand new; following second-hand—T.T. Triumph (1911) £30, twin Bat £25, twin Rex £35, twin Premier £35, Rex mag. £40, Bradbury and sidecar £28—Oswald Parker, Melbourne, Derby. [X1950]

1912 3 1/2 h.p. Twin N.S.U. with 2-speed gear, ideal lightweight, £49; 1910 free engine Triumph, splendid order, £38; 1909 free engine Triumph, well equipped, a beauty, £35; 1909 standard Triumph, new tyres, £26; 5-6 h.p. twin Rex, Bosch mag., h.b.c., spring forks, W. title h.b.c., splendid tyres, fine sidecar machine, bargain £18; 3 1/2 h.p. Vindee, mag., 2-speed gear, £14; 3 1/2 h.p. Quadrant, mag., B.B. spring forks, £14; Moto-sacche, Druid forks, good tyres, £9; 3 h.p. mag. Minerva, £12; 5 1/2 h.p. Vindee twin, mag., spring forks, £2; 5 1/2 h.p. twin Rex, accumulator, trembler coil, spring forks, will pull sidecar, bargain £10; 3 1/2 h.p. Bradbury, accumulator, fine machine for a learner, £8; immediate delivery of Scott, Triumph, Rudge, Premier, Siger, and Douglas, cash, easy payment, or exchange; we are at your service—The North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283. [X1938]

**SECTION IV.**

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

**BIRMINGHAM.**

SPECIAL Sale of new and 2nd-hands.

P. and M.—We have in stock both models, standard £60 and colonial £65; first order secures delivery. —Colmore Depot, 35, Colmore Row, Birmingham. [453]

DOUGLAS, 1911, 2-speed, free engine, handle starting, good order; £35.—Colmore Depot, 35, Colmore Row, Birmingham. [4538]

MOTOSACOCHE, 1910, free engine, fine condition. £20.—Colmore Depot, 45, John Bright St., Birmingham. [4539]

PREMIER, 1911, 3 1/2 h.p., good running order; £25.—Colmore Depot, 35, Colmore Row, Birmingham. [4540]

TRIUMPH, 1910, standard, overhauled, good running order; £29.—Colmore Depot, 35, Colmore Row, Birmingham. [4541]

ZENITH, 1911, 3 1/2 h.p., Gradua gear, spinnu hill climber; £35.—Colmore Depot, 45, John Bright St., Birmingham. [4542]

TRIUMPH, 1911, 3 h.p., with N.S.U. 2-speed, with or without sidecar; £38.—Colmore Depot, 35, Colmore Row, Birmingham. [4543]

BRADBURY, 1911, 3 1/2 h.p., 2-speed, with N.S.U. gear, powerful sidecar machine; £39.—Colmore Depot, 35, Colmore Row, Birmingham. [4544]

SINGER, 1912, 3 1/2 h.p., free engine, hardly used; sacrificing for £42.—Colmore Depot, 35, Colmore Row, Birmingham. [4545]

PREMIER, 1912, 3 1/2 h.p., Armstrong 3-speed, T.T. model, fine condition; £48.—Colmore Depot, 45, John Bright St., Birmingham. [4546]

ENFIELD, 1910, 2 1/2 h.p., good running order; £19.—Colmore Depot, 45, John Bright St., Birmingham. [4547]

SCOTT, 1910, 3 1/2 h.p., overhauled; £28.—Colmore Depot, 35, Colmore Row, Birmingham. [4548]

DOUGLAS, 1912, 2-speed, good as new; £42.—Colmore Depot, 35, Colmore Row, Birmingham. [4549]

ENFIELD, 1912, 2 1/2 h.p., 2-speed, free engine, hardly used; reduced from £52 to £42.—Colmore Depot, 45, John Bright St., Birmingham. [4550]

LADY'S Douglas, 1912, splendid machine, in fine order; £42.—Colmore Depot, 35, Colmore Row, Birmingham. [4551]

RUDGE, 1912, 3 h.p., free engine, oiled only; take £44 to clear.—Colmore Depot, 45, John Bright St., Birmingham. [4552]

NEW Hudson, 1912, 3 1/2 h.p., 3-speed, used a few times; £49.—Colmore Depot, 35, Colmore Row, Birmingham. [4553]

MATCHLESS, 1912, 6 h.p., var. gear, hardly used, as new, take £61.—Colmore Depot, 35, Colmore Row, Birmingham. [4554]

PLASTOW, Grimsby, has the following machines 1912, for immediate delivery:

1912 Triumph, free engine, new; £55.

1912 Douglas, Model G, new; £11.

1912 Indian, 7 h.p., 2 speeds and F.E., complete with Jones 27/6 speedometer, Montgomery £10/10 sidecar; 60 gns.

1911 Rudge, F.E., Kemp-hall tyre, excellent condition; £36.

1911 Triumph, F.E., perfect order; £37.

1911 F.N., 4-cyl., gear transmission, pedals and footboards; £24/10.—Plastow, Grimsby. [X1960]

QUADRANT, 2 1/2 h.p., just overhauled, h.b.c., nearly new tyres; price £6/10.—Higgs, butcher, Leicester. [X1883]

TRIUMPH for sale, 1908, in good running order; £24.—Wing, 15, High St., Stratford-on-Avon. [X2053]

**Collier's Motories,**

Westgate, Halifax, England.

**1912 BRADBURY'S.****THE IDEAL SIDECAR MACHINES.**

The greatest power in single-cylinder machines, giving maximum efficiency and freedom from attention.

1 1/2 h.p., tourist ..... £58 3 1/2 h.p., 2-sp., chain £58 10  
1 1/2 h.p., 2-speed, belt £55 3 1/2 h.p., 3-speed .. £58 10

**SPECIAL EXCHANGE QUOTATIONS.****CASH, EXCHANGE OR EASY PAYMENTS.**

CLYNO, 1912, Twin, 2-speed, new .... Offers.  
REX, 1912, 4 h.p. Tourist, 8 1/2 x 9 1/2, new £46 0  
REX DE LUXE, 1912, 4 h.p., 2-speed, new £56 0  
HUMBER, 1912, 3 1/2 h.p., 2-speed, new £47 10  
HUMBER, 1912, new 3 1/2 h.p., 2-speed £47 10  
INDIAN, 1911, 5 h.p., Clutch, splendid condition £39 10  
SCOTT, 1911, 2-speed ..... £34 10  
ANTOINE, 6 h.p. Twin, magneto, spring forks £23 10  
REX DE LUXE, 1911, Twin, 2-speed, new £53 10  
REX, 1911, 3 1/2 h.p., Tourist, new and unused ..... 34 gns.  
REX DE LUXE, new 1911, 3 1/2 h.p., 2-speed, and new Sidecar, very smart lot, with maker's guarantee ..... 50 gns.  
N.S.U., 1911, 3 1/2 h.p., 2-speed ..... £32 10  
KERRY, 2 1/2 h.p., runs well ..... £8 10  
BRADBURY, 2 1/2 h.p., magneto.... £18 10  
REX, 1911, 3 1/2 h.p., Tourist, very reliable £29 10  
BAT, 2 1/2 h.p., spring frame ..... £10 10  
REX DE LUXE, 5 h.p., 2-speed, Twin, and Sidecar ..... £35 0  
MINERVA, 2 1/2 h.p., 2-speed ..... £16 10  
REX, 1910, Twin, special finish ..... £29 10  
QUADRANT, 3 h.p., with accessories £7 15  
REX, 1911, 3 1/2 h.p., Tourist, 100 miles only £32 10  
REX, 5 1/2 h.p., Twin, spring forks ..... £16 10  
MINERVA, 4 1/2 h.p., Twin, spring forks £16 10  
N.S.U., 5 1/2 h.p., 2-speed, Magneto Twin .. £26 10  
MINERVA, 2 h.p., light weight .... £6 10  
DE DION, 2 1/2 h.p., spray carburetter £6 10  
JESMOND, 2 1/2 h.p., Watawata belt.. £8 10  
OLYMPIC, 3 h.p. .... £10 10  
MOTO REVE, 2 h.p., single-cylinder £19 10

**TRICARS AND CARS.**

3 1/2 h.p. 2-speed HUMBER Runabout, with extra seat attachment ..... £13 10  
PHENIA, 4-cyl., less tyres ..... 17/6  
4-cylinder 2-seater WOLSELEY Car, recently overhauled, great bargain ..... £22 10  
1 h.p. W.C. 2-speed MONOCAR, open frame .... £15 0

**COLLIER'S 1912 SIDECARS.**

"Popular," Clippe, or Conventional tyre ..... £5 5 0  
"Superbe" type, with best tyre, apron, etc. .... £6 6 0  
Side-entrance body, as illustrated ..... £10 0  
Ditto, with best coach-built body ..... £12 6 0  
Improved Quick Detachable Joints, Cranked Extra Strong Back Axle and Spindle to all Models Prompt delivery to suit Rexes, Indians, N.S.U.'s, Indians and any other make.

Discount to trade. Exchange entertained.

**SPECIAL OFFER.**

1912 2-speed 2 1/2 h.p. REX Junior de Luxe. Only had road tests, accept £32 10. Particulars on application



# ROBERTSONS SPECIALTIES.

## THE WALL TRICARRIAGE.

5 H.P., 2-SPEED SHAFT DRIVE,  
DIFFERENTIAL, 50 MILES PER  
GALLON, 40 MILES PER HOUR.  
**PRICE 100 GUINEAS.**  
COME AND HAVE A TRIAL RUN.

## TURNER SIDECARS.

MODEL No. 1 - - - - £14 15 0  
MODEL No. 2 - - - - £13 13 0  
Extras: HOOD, 35/-; SCREEN, 35/-  
COME AND HAVE A TRIAL RUN.

## C.M.C. CARETTE

6-8 H.P., TWIN-CYLINDER, WATER  
COOLED, 3 SPEEDS AND REVERSE,  
WHEEL STEERING, PRICE 95 GNS.

## MILLFORD SIDECARS

ALL MODELS, WICKER, CANE,  
AND COACHBUILT BODIES.  
FROM £6 6 0 TO £24 0 0.

## THE IVY MOTOR CYCLES

## COWEY & JONES SPEEDOMETERS

## F.R.S., MILLER, & P. & H. LAMPS.

## XL'ALL SADDLES

## ALL SPARES

FOR J.A.P. ENGINES,  
ZENITH MOTORS,  
AND ROC GEARS.

## GRADUAL PAYMENTS

## ROBERTSONS

TELEPHONE: 5767 MAYFAIR.

157, GREAT PORTLAND STREET, W.

## MOTOR BICYCLES FOR SALE.

TRIUMPH, 1907, 3½ h.p., h.b.c., Dualop belt, just  
overhauled; what offers?—Below.

ENFIELD, 1911, 2½ h.p., 2 speeds, free engine, as  
new; what offer?—Below.

DOUGLAS, 1910, 2½ h.p., just been enamelled and  
overhauled, fast; what offers?—Below.

PREMIER, 1912, 3½ h.p., standard, quite new; must  
be sold, what offers?—Below.

TRIUMPH, 1912, F.E., in stock.—Alcester Motor  
Co., Alcester. [X1847]

2½ h.p. 1912 Twin Humber, Armstrong 3-speed, 2½ in.  
back tyre, double footrests; £42 cash; also

3½ h.p. 1912 Free Engine Triumph, new at Easter;  
£46; both machines have been ridden about  
1,000 miles, are as new, and complete with lamp, horn,  
spare belt, fastener, valve, and tools.—Geoffrey Smith,  
Dunelm, Northumberland Rd., Coventry. [X2077]

RUDGE, free engine, new, registered; offers, cash or  
exchange.—Watson's Garages, Retford and Tuxford. [X1984]

DOUGLAS, 1911, Model E, 2-speed, footboards; £54.  
—Mess, 65, Arden Rd., Handsworth, Birmingham. [X1915]

THE Cornub Motor Co., King's Norton, have a few  
shop-soiled 1912 models to clear at reduced prices.  
[X1971]

3½ h.p. Minerva, overhauled, low, h.b.c., good tyres,  
£24 bargain, £9.—Crease, Radford Place, Mansfield. [X2009]

1910 3½ h.p. Brough, splendid condition, nearly new  
tyres, very comfortable; £24.—Mogg, Forest Rd.,  
Bulwell. [X1742]

HUMBER, 1911½, 2-speed, lamp speedometer, etc.;  
£55/10, cost £60.—Hirst, 214, North Fosse, Leic. [X4636]

REX Lightweight modern, mag. new belt, tyres, re-  
cently overhauled; £15.—Parsons, 66, Regent St.,  
Leamington. [X1860]

TRIUMPH, 1912, free engine, brand new, in crate;  
what offers?—J. Scanlan, 89, Bracebridge St.,  
Birmingham. [X4469]

1911 3½ h.p. Premier, good condition, very little  
used; first reasonable offer.—Carrs, Market  
Place, Mansfield. [X4506]

TRIUMPH, 1912, free engine, nearly new, with lamp,  
horn, and spares.—Applv, 31, Dora Rd., Small  
Heath Birmingham. [X4561]

1910½ Triumph, standard, little used, no winter  
riding, spares; £32.—Kerr, Claremont Rd., Spaul-  
brook, Birmingham. [X1799]

1912 Singer, 2½ h.p., faultless, not done 300, very  
fast, splendid climber, ideal for solo; £26-25,  
Highland Rd., Coventry. [X2034]

1910½ 6 h.p. N.S.U., 2-speed, free engine, Whittle,  
good tyres, new condition; any trial; £34.—Levi  
Ratcliffe, Culey, Atherstone. [X1859]

2½ h.p. New Hadley £5/10, 3½ p. Pebok £7/10, both  
long bars, excellent condition; will ride 40 miles.  
—Barratt, Kibworth, Leicester. [X1929]

1912 Douglas, model H, 3-speed, lamp, horn, Cowey,  
in new condition, spares; £46, cost £53/10  
Easter.—Leafie, Irthlingborough. [X1842]

6 h.p. N.S.U., powerful, and in good condition, mag.,  
footboards, and all accessories; £16.—Box 1,215,  
The Motor Cycle Office, Coventry. [X2048]

L.M.C., 1911, 3½ h.p., free engine, 2-speed, perfect con-  
dition; trial; £36.—Goosty, 53, Harborne Park  
Rd., Birmingham. Tel.: 3520 Central. [X1824]

2½ h.p. 1910 Moto-Reve, Bosch, Whittle, Druids; sell  
£26, or exchange for 3½ h.p. mag. machine.—Box  
1,216, The Motor Cycle Office, Coventry. [X2014]

TRIUMPH, F.E., £55; Calcott, 2½ h.p., £33; Rex  
twin, 6 h.p., £55; Hobart, £37; perfectly new; what  
offers?—Tuck and Blakeacre, Coventry. [X2080]

SPECIAL Clearance Sale of new and 2nd-hands pre-  
vious to stocktaking; now is your chance for genuine  
bargains; must be cleared; no reasonable offer refused.

NEW 1912 2½ h.p. Ariel Lightweight, free engine, 3-  
speed; list £52/10, accept £45.

NEW 1912 3½ h.p. Twin N.S.U., free engine, 2-speed;  
list £49, to clear £37/10

ARIEL, 1911, 3½ h.p., free engine, var. gear, 1912 de-  
compressor, with lamp, horn, tools, practically  
new, £35, great bargain; another same model, with  
sidcar, £38/10.

B.S.A., 1911, 2-speed model, £40; New Hudson, late  
1911, 2½ h.p., 3-speed, £38/10; Moto-Reve twin  
lightweight, £18/10.—Falcon Motor Depot, Lezells, Bir-  
mingham. [X2024]

3½ h.p. Clutch Model Rex de Luxe, 1910½, drip feed  
lubricator, Brooks large carrier case, perfect, like  
new; bargain, £26.—Touns, 138, Catherine St., Leice-  
ster. [X4444]

MINERVA, 2½ h.p., excellent condition, good running  
order, B and B control Amac carburetter, Helle-  
sen; £9/10.—Eichenberger, 7, Carlton Rd., Boston, Lines. [X2035]

3½ h.p. Triumph, 1908, good condition, Mabou clutch,  
new Dunlop back, new belt, head light, spare  
tube, numerous other spares; £24.—Allen, Saxby,  
Grimsby. [X1955]

3½ h.p. Free Engine Rex, 1908, Binks carburetter,  
1911 tank, new belt and tyre just fitted, and  
machine overhauled; bargain, £18/10.—37, Claremont  
St., Coventry. [X2079]

# ROBERTSONS NEW MACHINES FOR IMMEDIATE DELIVERY.

ALL MODELS OF TRIUMPH, BAT,  
DOUGLAS, CLYNO, HUMBER, IVY,  
NORTON, RUDGE, ROVER, P. & M.,  
NEW HUDSON, ZENITH, ENFIELD,  
MATCHLESS, SCOTT, SINGER, ETC.

## SECOND - HAND EVERY MACHINE

OVERHAULED AND GUARANTEED.

1912.

## G. N. CYCLECAR £86 IN PERFECT ORDER

- |      |                                   |   |     |
|------|-----------------------------------|---|-----|
| 1215 | P & M., 3½ H.P., 2-SPEED. One     | year old. Horn and lamp never been used | £58 |
| 1203 | IVY PRECISION, 3½ H.P. T.T.       | MODEL. Ridden about 100 miles           | £42 |
| 1181 | HUMBER, 2½ H.P., 3-SPEED. Foot-   | boards. Like new. Lamp, horn, and tools | £45 |
| 1167 | LINCOLN ELK, 3 H.P. Ridden        | about 50 miles. Lamp, horn, and tools   | £26 |
| 1188 | NEW HUDSON, 3½ H.P., 3-           | SPEED GEAR, SHOP-SOILED ONLY            | £45 |
| 96   | NORTON, 3½ H.P. STANDARD          | MODEL, SHOP-SOILED ONLY                 | £44 |
| 1186 | RUDGE, 3½ H.P., F.E. MODEL. As    | new. Lamp, horn, and tools              | £48 |
| 1222 | RUDGE, 3½ H.P. T.T. MODEL. Lucas  | lamp, Max, Cowey, spares, tools         | £44 |
| 1198 | TRUMP-J.A.P., 4 H.P. Brand new    | engine. Very fast, horn                 | £34 |
| 1175 | ZENITH, 3½ H.P. In perfect order, | Lamp, horn, and tools                   | £44 |
| 1147 | ZENITH, 3½ H.P. Hardly used.      | Lamp, horn, and tools                   | £46 |
| 1143 | ZENITH, 3½ H.P. Senspray carbure- | retter. Like new. Lamp, horn, and tools | £48 |
| 1188 | ZENITH, 6 H.P. Beautiful order.   | Lamp, horn, and tools                   | £62 |

1911.

- |      |                                      |                                       |     |
|------|--------------------------------------|---------------------------------------|-----|
| 1173 | BAT, 6 H.P. New condition. Lamp,     | horn, and tools                       | £39 |
| 1142 | BRADBURY, 3½ H.P. Fine order.        | Lamp, horn, and tools                 | £34 |
| 1202 | BRADBURY F.E., 3½ h.p.               | All accessories                       | £39 |
| 1154 | F.N., 4-CYLINDER, 3-6 H.P., 2-SPEED. | Lamp, horn, and tools                 | £38 |
| 1217 | HUMBER, 2½ H.P., 3-SPEED.            | Splendid order, lamp, horn, and tools | £32 |
| 1208 | SCOTT, 2-SPEED, 2-STROKE, 2-CYL.     | water-cooled. Suitable for a lady     | £45 |
| 1132 | PREMIER, F.E., 3½ H.P. Fine          | order. Lamp, horn, and tools          | £38 |
| 1200 | ZENITH, 6 H.P. Splendid for sidcar.  | Lamp, horn, and tools                 | £52 |
| 1090 | ZENITH, 3½ H.P. Good appearance.     | Lamp, horn, and tools                 | £38 |
| 1182 | ZENITH, 3½ H.P. Exceptionally good   | order. Lamp, horn, and tools          | £41 |

## MISCELLANEOUS.

- |      |  |  |     |
|------|--|--|-----|
| 1091 | 1910 SCOTT, 3½ H.P., 2-SPEED, 2-       | STROKE. Lamp, horn, and tools                    | £28 |
| 1211 | 4 H.P. STEVENS, Magneto, H.B.          | control, spring forks, lamp, horn and tools      | £16 |
| 1211 | 1910 PREMIER, 3½ H.P. 2-CYL.           | Lamp, horn, tools. Most excellent condition      | £29 |
| 1220 | SWIFT, 3½ H.P. WHITE & POPPE           | ENGINE. Lamp, horn, and tools                    | £12 |
| 1219 | 1908 F.N., 4-CYL. 1912 carburetter and | clutch. Lamp, horn, and tools. Perfect condition | £24 |
| 1154 | 1909 F.N., 4-CYL. In perfect order.    | Lamp, horn, and tools                            | £19 |

# ROBERTSONS

TELEPHONE: MAYFAIR 5767

157b, GREAT PORTLAND STREET, W.



## MOTOR BICYCLES FOR SALE.

S.A., 1911, standard, guaranteed not done 2,000 miles, tyres as new, front unpunctured, several improvements, all accessories; £35.—Teall, 115, Colmore Row, Birmingham. [X1887]

11 Indian, 5 h.p., free engine, Cowey, Lucas lamp, mirror, spare chains, valves, perfect order; any tyre; £40, or exchange Douglas and cash.—Nolan, Coventry, Nottingham. [X1985]

12 3 h.p. Free Engine Motor Cycle. Condor engine. Thomas D. Bennett mag., C.A.P. can. better, Continental tyres; no reasonable offer refused.—P. Spencer, Priory Mill, Coventry. [X1026]

11-1912 Racing Triumph, only run 700 miles, magnificent condition, won several gold medals, spare valves, tyre, carburettor, belt, very fast, special through-rod Apply, Halford, White Horse, Edwalton, Nottingham. [X1917]

TRIUMPH T.T. Roadster, May, 1911, Jones speedometer, Lucas lamp, horn, watch, tyres, and belt originally new, very fast; bought 1912 model; £37/10. Tough sale; no offers.—Finnemore, 75, New St. Birmingham. [X1663]

SPECIAL Bargain.—6 h.p. Zenith-Gradna, 1911, grip lever, J.A.P. engine, patent drip lubricator, special condition, carefully used about 2,000 miles; £48/15. Post.—Box L8509, The Motor Cycle Offices, 20, Tudor St. E.C. [X4664]

12 3 h.p. Bradbury, good condition, spare valves, Lucas lamp, new John Bull tyre on back, unused Dunlop belt, also new Dunlop spare cover. Cowey carburettor; what offers?—Wright, Tetherton House, Kenning. [X4411]

DABURY, 1912, new June, free engine, £25; Bradbury, 1911, perfect, £34; Moto-Kette, 1910, twin 2 h.p., £16/10; Minerva, 2 h.p., new B. and B. tank and one cover new, £11.—Robertson, 15a, Broad St. Peterboro'. [X845]

WINGDON, 1911, clutch model, 12 months old, ridden 3,000, F.R.S. 1,000 ft. beam, lamp, all spare, belts, etc.; £36, with sidecar £40; no dealers; can be seen Sutton Coldfield.—Box 1211, The Motor Cycle Offices, Coventry. [X1933]

CENOS, 1912 models in stock; special offer, 1912 2-speed, complete, coach-built sidecar, Lucas lamp, horn, spares, all brand new; £80; trade supplied.—P. J. Jones, wholesale agent, Sparkhill, Birmingham. Tel.: 13 Victoria. [X4654]

JONES, 1913, 3-speed, chain drive, special gold medal 5 days' machine fully guaranteed, and overhauled, as well as several special fittings.—P. J. Evans, Sparkhill, Birmingham. [X4656]

HUMBER, 1912, 3 h.p., 2-speed, excellent order, £42; also 1911 and sidecar; splendid condition, £38/1. P. J. Evans, 358, Stratford Rd., Birmingham. [X4657]

ADAMS, 1912, 3 h.p., 2-speed; cost £52 recently, accept £40.—P. J. Evans, Sparkhill, Birmingham. [X4652]

MOTOR Cyclists.—All the finest makes of motor cycles and sidecars on view at P. J. Evans, Motor Depot, Sparkhill, Birmingham. I can save you pounds. Several 1911 models considerably reduced to clear. [X4653]

TRIUMPH, T.T., 1911, very fast, won hill-climbs recently, splendid condition, rebushed throughout, Dunlop good order, Lucas lamp and generator, mirror, carburettor, spare Dunlop tyre and belt, belt case and pump; trial; bargain, £36.—S. Whittle, Great Glen, Lutter. [X1797]

10 Bradbury, free engine, splendid condition, guaranteed give satisfaction, £45, no offers; also 1911 Bradbury standard, excellent condition, £37, or otherwise 1911 Douglas, free engine, 2-speed, not ridden 20 miles, £38; good reasons for sale.—Box 1213, The Motor Cycle Offices, Coventry. [X1939]

## SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, or Bedford. [X1103]

RUGE, 1912, F.E. 3 h.p., splendid order; £36, big bargain.—Garnham, 96, Crown St., Ipswich. [X1103]

NE and 2nd-hand B.S.A., Rudges, Premiers, Bradbys, Enfields, etc.—Lambert, Telford. [X181]

19 Free Engine Triumph, in good order throughout; sacrifice £28.—3a, Bridge St., Cambridge. [X2028]

19 Standard Triumph, in good running order, complete; £20, bargain.—37, Searle St., Cambridge. [X2029]

TW 1912 Free Engine Triumphs, just delivered, no using; £55.—J. Ewen, King's Lynn, Norfolk. [X2019]

NE Bradbury Torpedo Sidecar, 10 gn. model, Dunlop tyre; what offers?—Thomas Cornhill,bury St. Edmunda. [X1800]

1910 Silver Quadrant, 3 h.p., 1912 B. and B., 12, perfect; ride 50 miles purchaser.—31, Lane, Loughborough. [X1928]

DEVERY from Stock, 3 h.p. Scott, F.E. Triumph, 1 P. and M. motor cycles.—King and Harper, Bridge St., Cambridge. [X1832]

1912 2 h.p., 2-speed, shaft-driven, late 1910, little use, only spares, perfect condition, inside and out; again.—Wescombe, Whittelessa. [X4566]

1910 Cyde, mag., h.b.c., new C. ncher tyre and max. 24 tube, just overhauled, excellent condition, low and very fast; bargain, £29.—Simpson, 6, Ingram St. Lutterdon. [X4578]

# Do you Want—

a 1912 Scott, Triumph, Rex-Jap, Zenith-Gradna, Premier, Douglas, or any other really good motor cycle? We can give you . . .

## Immediate Delivery,

whether you desire to

## Pay Cash,

## Make an Exchange, or

## Pay by Instalments.

.....

## SECOND-HANDS.

We have a large stock of overhauled and guaranteed machines which we are offering at very low prices. Full list, giving specification of each machine, free upon request. Write now, or the machine you want may be sold.

A small selection is given below:

### SIDECAR COMBINATIONS.

MATCHLESS, 1911, 8 h.p., 2-speed, doable belt drive, passenger model, and P.M.C. sidecar	£53
REX, 1911, 5 h.p., free engine, and P.M.C. sidecar	£38
B.S.A., 1911, 3½ h.p., free engine, and P.M.C. sidecar; cost £63; and equal to new; not done 500 miles	£45
N.S.U., 1910, 6 h.p., twin, 2-speed, and free engine, N.S.U. coach-built sidecar; cost new £95	£36

### CYCLE CARS.

A.C., 1909, 5-6 h.p., 2 speeds	£38
MOTORETTE, 1911, 6-7 h.p., 2 speeds, water-cooled	£65

### TWINS.

REX, 1909, 5 h.p., de luxe, 2 speeds, and free engine	£30
BAT, 1908, 7-9 h.p., Jap engine	£28

### SINGLES.

TRIUMPH, 1911, 3½ h.p., free engine	£38
TRIUMPH, 1911, 3½ h.p., T.T. roadster	£35
TRIUMPH, 1911, 3½ h.p., T.T. roadster	£32
TRIUMPH, 1909, 3½ h.p., standard	£25
MATCHLESS-J.A.P., 1911, 3½ h.p., free eng.	£33
MATCHLESS-J.A.P., 1909, 3½ h.p., 2 speeds, and free engine	£28
REX, 1911, 3½ h.p., free engine	£28
REX, 1910, 3½ h.p., Speed King	£20

And many others from £5 to £40.

List free upon request.

# The Premier Motor Co., Ltd.

Aston Rd., BIRMINGHAM.

Telegrams: "Primus, Birmingham."  
Phone: Central 4310.

## MOTOR BICYCLES FOR SALE.

TRIUMPH, free engine, 1911, ridden 2,000 miles only, Lucas lamp, Jones speedometer, horn, etc., splendid condition. £42.—Robinson's, Green St., Cambridge. [0145]

MOTOREVE, engine and magneto recently overhauled and rebushed; exceptional value, £16.—Robinson's, Green St., Cambridge. [0146]

ZENITH, 3 h.p., 1912 Gradna gear, ridden under 1,000 miles, horn, mirror, spare belt, etc.; £44.—Robinson's, Green St., Cambridge. [0147]

TRIUMPH, 1907, mag., h.b.c., tyres in good condition; £16.—Robinson's, Green St., Cambridge. [0148]

DOUGLAS Agents for Cambridge and Newmarket, Season 1912-13: Robinson's, Green St., Cambridge. [0149]

1910 Moto-Reve Twin, free clutch, £22; 1910 ditto, 2 h.p. twin Enfield, £20, or exchange; tricar, 4 h.p. M.C.C. water-cooled, free clutch, £11.—Fred Garner, Watton, Norfolk. [4448]

1912 New Hudson Motor Cycle, 3 h.p. J.A.P. engine, 3 speeds, 4 montis old, cost £16, every equipment, as new, ridden 700 miles; owner buying car; must sell, £52, or will entertain exchange.—Smith and Wesby, motor engineers, Saxmundham. [4415]

1911 Royal Enfield Twin, 2 speeds and free engine, Cowey speedometer, lamp, long footboards, M'All saddle, spare Dunlop cover and Rich inner tube, 3 touring bags, tools, and spares, run only 1,200 miles; £35.—Captain Willett, Britannia Barracks, Norwich. [X1945]

DOUGLAS, 1912, model A., cost with accessories £44, will accept £45; had's Douglas, 1912, model L., cost with accessories £54, will accept £46; both machines fitted with free engine, footboards, kick starter, new 2 months ago, little used; owner buying motor.—Hines, 216, Cauldwell Hall Rd., Ipswich. [4604]

## SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

P. and M., brand new, 1912, in stock; first cheque £60 secures.—Stour Cycle Depot, Stourbridge. [X2032]

B.S.A., 1912, new June, clutch model, heavy Kempshall rear wheel, tin. Dunlop belt, condition perfect.—Stour Cycle Depot, Stourbridge. [X2033]

SCOTT, 1910, in perfect condition, good hill-climber, new Palmer tyre, all tools.—Wade, Hilsdon House, Albany Rd., Cardiff. [X1790]

TRIUMPH, 1909, in excellent condition, new Michelin tyres, Dunlop belt; £26.—Write, 35, Leonard St., Neath. [X1918]

3 h.p. N.S.U., perfect condition, mag., h.b.c., new 24 Hutchinson back, new belt, variable pulley, accessories; £16.—Walton, Kingston. [4203]

3 h.p. Brown, Chater-Lea, h.b.c. Amac, adjustable 32-pulley, wants little attention, no tyres; £6, or offer.—26, Upton Rd., Newport, Mon. [X1776]

1912 Zenith, 6 h.p., with Tarnier sidecar, complete; £65; exchange considered, less power or runabout.—Wallace, Market St., Stourbridge. [X1970]

EXCELSIOR, 3 h.p. model, 14 inch belt, Palmer tyres, Binks carburettor, Sturveys-Archer 3-speed gear and free engine; £58/15.—Matthews, Neath. [X2088]

SINGER, 1911, new tyres and belt; a bargain, £33/10.—Matthews, The Spot, Neath. [X2088]

1912 T.T. B.S.A., exceptionally fast, in perfect condition, 9 weeks old; going abroad; £43/10.—Box 1201, The Motor Cycle Offices, Coventry. [X1796]

DOUGLAS, 1911, 2 h.p., condition as new, not ridden 500 miles, Clark's mudshields, horn, lamp, spring pillar, spares; £30.—Dr. Burd, Upton-on-Severn. [X949]

1910 2-speed Humber, new Palmer eard cover and tube on back wheel, new Hutchinson passenger cover on front wheel, all accessories, and sidecar, just overhauled; £30.—Stanley, Black Lion, Aberystwyth. [X887]

2 h.p. Kerry, engine just overhauled, frame newly painted, enrouled French grey, h.b.c. fitted, splendid going order; trial to bona-fide congniters; a bargain at £10.—C. D. Hooke, 147, Caerleon Rd., Newport, Mon. [4574]

TRIUMPHS in stock—1912, free engine, just delivered, £55; 2nd-hand 1911 ditto, £43; 1911 standard model, £39; 1909 ditto, £29; 1908 ditto, £25.—Full particulars on application, Hitchings and Son, Triumph agents, Evesham. [X722]

TRIUMPH, free engine, new Oct., 1910, good condition, recently completely overhauled and rebushed, large F.E.S. lamp, horn, exhaust whistle cost £1, but ended tubes, Whittle, spares, and tools; cheap for immediate sale, £30 cash.—Address, No. 1,197, The Motor Cycle Offices, Coventry. [X1751]

## SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

TRIUMPH, just delivered 1912, free engine, 3 h.p.; 55gn.—Street, Long St., Tetbury. [4339]

3 h.p. Triumph, 1909, free engine, new clutch, tyre, etc.; want light car.—Dr. Thomason, Yarmouth, Engit. [4341]



**MOTOR BICYCLES FOR SALE.**

1912 Triumph, free engine, £55; 1912 Singer, 2-speed, free engine, not ridden 50 miles, 38 gns.; 1911 Douglas, 2-speed, free engine, absolutely as new, 33 gns.; Triumph, 1906, mag., 18 gns.; Triumph, 1908, equal to new, 26 gns.; Triumph, 1909, equal to new, 28 gns.; Triumph, 1910, equal to new, 30 gns.; 1912 free engine Rudge, grand condition, 38 gns.; 5h.p. A.J.S., 2-speed, 60 gns.; 1912 6h.p. Enfield and sidecar, not over month old, not ridden 1,000 miles, 72 gns.—Julian, Broad St., Reading.

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ESTABLISHED 20 YEARS "IN THE HEART OF THE TRADE"



**We are not hanging on to stock. We are clearing it!**

We are not old-fashioned. We are not going to hang on to our stock till we can sell every machine at the price we would like to. NO; we prefer to sell half or three parts of it NOW before the winter, even though we know we are selling machines at prices far less than we can get for them if we keep them over till the spring.

We consider it better business to turn the money over to sell our existing stock NOW and to replace it.

Therefore, we have prepared a list of every machine we have, and we are going to refuse nothing reasonable

**Tell us your requirements**

**Lightweights 1910 & 1911.**

Douglas, Enfields, Moto-Reves, Motosacoche, all recent models, magnetos, overhauled, etc.

From £14 to £30.

**3½ h.p. Models, 1910 & 1911 fixed or free engine or variable gears.**

Triumphs, Premiers, Zeniths, Bradburys, Singers, Kerrys, etc., all overhauled, and good machines.

From £20 to £35.

**1912, 3½ h.p. machines, good as new.**

Rudges, Premiers, Zeniths, B.S.A., New Hudson, soiled only, or used for trial runs.

Bargains from £35.

**Call or write for a list**

Make us a cash offer, and if we can let you have the machine, we will do so.

Further than this, we can let you get a certain number of machines to customers who may prefer to extend the payments rather than purchase in a lump sum.

We would prefer cash offers, and, of course, the cash buyer gets the best bargain.

In any case, if you are scanning the pages of this paper in search of a bargain—you have struck it here.

**Then make us an offer**

**COLMORE**  
35, Colmore Row Birmingham.  
18, Renshaw Street Liverpool.  
261, Deansgate, Manchester.  
62, High Street, Leicester.  
45, John Bright St., Birmingham.

**MOTOR BICYCLES FOR SALE.**

F.N., 1909, 5-h.p., recently overhauled, spring fork mag.; £18.—Terry, East Isley, Berks. [42]

3½ h.p. Humber, cheap for immediate sale.—Apply, Alan Davis, The Green, St. Briavels. [42]

BAT-J.A.P., 5-h.p., twin, new June, 1911, perfect condition; £35.—Roberts, Para St., Windsor. [44]

TRIUMPH, 1911-12, F.E., tyres and tubes practical new; 43 gns.—Miller, 44, West St., Reading. [44]

3½ h.p. N.S.U., mag., Barlow, splendid road order; £15 or near.—Chriss, Mytchett, Farborough. [46]

LADY'S 1912 Motosacoche, unriden, var. gear, fr engine; £48, what offers?—Morganbrown, Peppin Oxfordshire. [46]

3½ h.p. Triumph, 1908, new 2-speed, free engine given up motoring; £30.—W. Cole, Blackmore, Hants. [46]

DELIVERIES from stock Bradbury, chain-driven, speed, £58/10; Douglas, model K, £50.—Gough Motors, Gloucestershire. [47]

3½ h.p. Fafnir, Clatter-Lea, dry cells, B. and B., perfect running order, good climber, low built; £14.—Woodstock Rd., Oxford. [47]

F.N., 4 cys., Bosch, spring forks, 1912 B. and ready for fitting, splendid condition; £17.—Warlow, Beckford, Tewkesbury. [48]

1911 T.T. Premier, 3½ h.p., in good condition, lamp horn, new Dunlop belt; £30.—Lieutenant Wall, Talavera Barracks, Aldershot. [44]

TRIUMPH, 1910, free engine model, in beautiful order, been nursed, not ridden; honestly worth £40, £35.—Layton's, Bicester, Oxon. [49]

TRIUMPH, 1910, standard, first-class order through out; £30.—Layton's, Bicester, Oxon. [49]

DOUGLAS, 1911, 2½ h.p., 2-speed and free engine; £32.—Layton's, Bicester, Oxon. [49]

TRIUMPH, 1911, free engine model, 3½ h.p., excellent condition; £35.—Layton's, Bicester, Oxon. [49]

HUMBER, 1912 twin, fixed engine, new condition only done 300, consider older machine part payment; cash £33/10.—Heyburn's Motors, Maidenhead. [49]

EYLES and Eyles, 113, St. Aldate's, Oxford, have stock, 2nd-hand Scotts, Triumphs, Rudges, Kerr, Premiers, Enfields, and N.S.U.; special bargains clear. [48]

CHATER-LEA, Coronet engine, Bosch mag., Michelin tyre, enamelled French grey, in good going order; £12.—Mapp, Hayercroft, Sunninghill, Ascot. [47]

RUDGE Multi, 1912, April, £49; with £3 Lucas K of the Road lamp, £51/10; Milford radial cast sidecar, 1911, 11 gns.—Foll, surveyor, Woburn Sand Bucks. [48]

1912 B.S.A., 2-speed, free engine model, little a carefully used, appearance like new; 50 gns., near offer.—Davis, 21, Russell Rd., Westbury, Wilt. [46]

HUMBER, 1912½, new July, 3½ h.p., 2-speed, free engine, unscored, equal to new, lamp, horn, mirror, watch, tools, etc.; total cost £55/5, offers.—A. W. Bourne Av., Salisbury. [44]

CLYNO, 1911, excellent condition, only done 12 miles, 45 gns.; Douglas, 1912, model G, only 4750 miles, excellent condition, 35 gns.—G. Parr, South Light Infantry, Bordon, Hants. [43]

3½ h.p. Lightweight Ariel, 26 in. wheels, long bars, 2 B. carburettor, dry batteries, low light, and comfortable, latest fittings, fully equipped; 10 gns.; plus.—Palmer, Damerham, Salisbury. [48]

1910 5-6 h.p. Roe, twin-cyl., free engine, handle steering, Bosch mag., B. and B., machine very little used; £20 immediate cash; owner bought ransport Harris, 588, Commercial Rd., Portsmouth. [49]

DOUGLAS Model K Motor Cycles in stock, ready immediate delivery; £50.—The Motor Cycle Dep 43, Palmerston Rd., Boscombe. Tel.: 1248 Bournemouth. Telegrams: Alsford, Boscombe. [21]

BRADBURY, 1912, chain drive, 2-speed, clutch kick starter, only ridden 70 miles, others quite new; cost £53 few days ago, sell £50 or offer.—Waller, 54, St. Clement's Rd., Boscombe. [44]

BRADBURY, 3½ h.p., 1911, excellent condition, Mabon clutch, spare adjustable pulley, nearly 1 in. belt, Garner Jones speedometer, lamp, mirror, spares; £38 secures.—Hewwood, Waltons, St. Green, Holport. [43]

**SECTION VIII.**

Hertford, Essex, Middlesex, Surrey, Kent and Sussex.

TRIUMPH, 1911, free engine, excellent condition; £44.—Below.

TRIUMPH, 1911, free engine, horn, lamp, speedometer, complete with Milford sidecar, excellent condition; £52.—Below.

BRADBURY, 1911, everything perfect condition; £4.—Below.

KERRY-ABINGDON, 1910, perfect condition; £2.—Below.

KERRY, 3½ h.p., good condition; £6.—Roberts, J. tion Rd., Eastbourne. [4]



# THE MOTOR CYCLE

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York. PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.; Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd.; Wellington, Auckland, Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 132, Bay Street, Toronto. SOUTH AFRICA: Central News Agency, Ltd.

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### Warning Signs.

THE observant reader who travels about the country a great deal must at some time or other have been impressed by the number of red warning triangles which now abound. Equally so notice must be attracted by the careless selection in some instances of so-called danger spots. These red warning triangles are intended as a warning to road users to proceed with caution, but every sensible motorist never does otherwise so long as narrow and twisty roads abound. The purport of this article is to recommend that more careful selection be made of real danger spots, or there is grave fear that the numerous warnings will defeat their own object. In other words, we have of late noticed warnings of so-called danger points which naturally caused us to slow down and proceed cautiously, only to find that there was no real danger at all, but perhaps only an entrance to a private carriage drive. This sort of thing frequently occurs, until at length the motorist who may be desirous of losing no time is tempted to take liberties, thinking the sign an unwarrantable one, and in so doing encounters at too fast a speed a really dangerous place. It would obviously be absurd for every by-road, carriage drive entrance, and such like to be marked with danger signs, and this brings us to another aspect of the question. Why should the continual stream of traffic on a main road be checked for the occasional by-road user? Would it not be far more sensible to warn the by-road user that he was about to enter a main road, and consequently that it was his duty to proceed slowly and cautiously? It seems a far more reasonable plan to warn the minority rather than hold up every user of the road.

### Cyclecar and Sidecar Bodies.

THE last few weeks have brought out a considerable amount of information regarding cyclecars for 1913, and we notice that one or two designers of these vehicles have had sufficient forethought to provide them with bodies of reasonable width. There are, however, a number of experimental cyclecars and sidecars on the road with ludicrously restricted bodies. One of the claims, if not the greatest claim, made for the cyclecar is that its seating accommodation is side by side, yet what do we see on the road? Passengers seated side by side in bodies barely wide enough for one bulky person. A body of this type gives the impression that the passengers have been pushed down into the seat and what would not go in had bulged over the side. If we are to have cyclecars in any numbers let us, at least, have comfortable roomy bodies.

Then with regard to sidecars, although there are a number of excellently designed and well-made sidecar frames on the market there are comparatively few convenient bodies. We refer particularly to accommodation for the multiplicity of traps which one finds it necessary to carry in the case of passenger motor cycling. We ask, where is the sidecar body made which can be entered and left as quickly as a motor car? Why should a sidecar passenger be incommoded by the driver's oilskin, overalls, and other sundries which will never go into a little locker such as is fitted to most sidecars. In addition, the said locker is usually under the passenger's seat, and every time anything is required the passenger must, of course, be disturbed. Every sidecar should have a locker or "boot" fitted, say at the back of the seat.



## The Cape Peninsula M.C.C. 100 Mile Trial.

**T**HE King's birthday brought King's weather—a perfect dry winter day—to the twenty-seven starters. The route was as follows: Salt River to Eerste River (control) 22 miles, Eerste River, *via* Somerset Strand and Gordon's Bay, to Sir Lowry Pass (control) 19 miles, Sir Lowry Pass, *via* Somerset West, to Stellenbosch (control and luncheon stop) 17 miles, Stellenbosch, *via* Bottelary Farm, to Bellville (control) 17 miles, Bellville, *via* Durbanville and Maitland, back to Salt River, 25 miles, total 100 miles.

Results: Time error. Stops. Total.

1. S. B. Priston (P. and M.) — ... 10 ... 10
2. H. Dreyer (6 Enfield sc.) ... 2 ... 10 ... 12
3. R. H. M. Hill (Ariel) ... 10 ... 10 ... 20

The Eerste River control was much further placed than competitors anticipated, resulting in many of them arriving late, only Rev. S. B. Priston (P. and M.) managed the right time, while on the other hand Vincent Lee (7 Indian sc.), who carried two passengers in the sidecar and one on the carrier, erred ten minutes.

The road had dried up very quickly after the heavy winter rains of late, but was free from dust—a real blessing.

Some of the competitors arriving at the second control at Sir Lowry Pass had made up time, thus preventing additional loss of marks, and they now hurried to

the water splash. C. Des Forges (Calthorpe sc.) dropped his passenger, while H. M. Hill (Ariel), and many others after safely negotiating the 12in. deep rivulet, came to a stop on reaching the other side, in most cases the water having fouled magneto or sparking plug.

A four-mile down grade stretch of road, bordered by stately trees, led through the village of Somerset West and up the hill leading into the main road, the severity of which caused a stop to R. Lee (2½ Humber).

On the long rise to Stellenbosch J. Thornton (Bradbury sc.) had to run alongside on the 1 in 5 gradient of Red Hill, while W. H. Logeman (Humber sc.), after tightening his Whittle belt, forthwith made up lost time.

The *pièce de résistance* of the day was the long climb over a rough and uneven road leading past Mr. van Niekerk's farm, Vissershok, on to the Koeberg Road.

Hereabouts the Rev. S. B. Priston met with his first stop, the bottom part of his front mudguard having come in contact with a boulder, thus upsetting the rider's balance.

H. Dreyer (6 Enfield and sc.) went merrily along, his passenger making good use of a whip in chasing cattle desirous of disputing the right of way. F. H. Fritchley (P. and M.) was the only competitor to make an absolute non-stop run.



1.—The Rev. S. B. Priston (2½ h.p. P. & M.), winner of the 100 miles contest. 2.—The luncheon stop at Stellenbosch. The scene outside the Ma-onic Hall. 3.—Perkins (Triumph) entering from the Gordon's Bay road into the mountain road for Sir Lowry Pass. The fine scenery in these parts will be noted. 4.—Vincent Lee (7 h.p. Ind an sidecar), who went through the 100 miles run with three extra passengers as shown. 5.—J. Thornton (3½ Bradbury—Canelet sidecar) leaving Stellenbosch.



# Occasional Comments

by "Lion"



## The Moral of Porlock.

I suppose one may now say without contradiction that the A.C.U. Trials were sent up Porlock Hill under conditions that made a "clean" ascent half a fluke and half a matter of jockeyship, simply to settle the awards for the special prizes. Several teams and several individuals were standing equal for the special cups and medals, and the judges saw no other means of differentiating between them, if they were not sent up a hill which was absolutely certain to knock some of the leaders out. On all other grounds it was undesirable to send the men up Porlock. Any machine, from a  $3\frac{1}{2}$  h.p. solo with 15 to 1 bottom gear to an 8 h.p. sidecar outfit with 12 to 1 bottom gear, could fail on the hill without sustaining the faintest technical slur. Success or failure depended almost exclusively on the skill of the driver—with some slight element of luck included. All over England people are talking vaguely of the "shocking exhibition" the Trials gave on the hill, and most of the critics are unaware that practically the entire entry would have romped up the hill on a dry day, and that the road conditions were so impossible that the hill could be fairly described as unrideable. Slithering over eight inches of mud with one's feet out on a double figure gear is not motor cycling—it is knockabout gymkhana comedy. Nothing but the need of awarding the special prizes to one team and one or two individuals could have justified its inclusion.

## Methods of Awarding Special Prizes.

Now I hope this point will be kept in mind for next year's Trials, and that similar impolitic fiascos will be avoided by wiser regulations. Is it sensible or necessary to award special prizes to teams or individuals? With all respect to the successful holders of such awards in this or previous years, no practical rider imagines that a yawning chasm of profound superiority separates these special prize winners from the bulk of the gold medallists. The jockeys may be fractionally cleverer or more experienced; more complete precautions may have been observed by the entrants in the way of equipping the machines for their special task, or of acquainting the riders with the worst parts of the route; the capricious goddess luck (especially tyre-luck) may have specially favoured the victors, and so on. But actually their superiority is neither so tremendous nor so absolutely an intrinsic feature of the machine as to require or justify differentiation. I personally consider it would be closer to the facts, and fairer to the riders and to the trade, to stiffen the awards a trifle, and, for instance, confine first class gold medals to such machines and teams as lose no marks at all, and to award second class gold medals to machines securing, say, 95%. If the powers that be differ from me, and fancy they can verify the best individual combination and the best team, is a basis of trick-riding on freak gears the wisest method of making the award? Why not, for instance, take into consideration the condition of the exhaust valve, the amount of carbon deposit, or

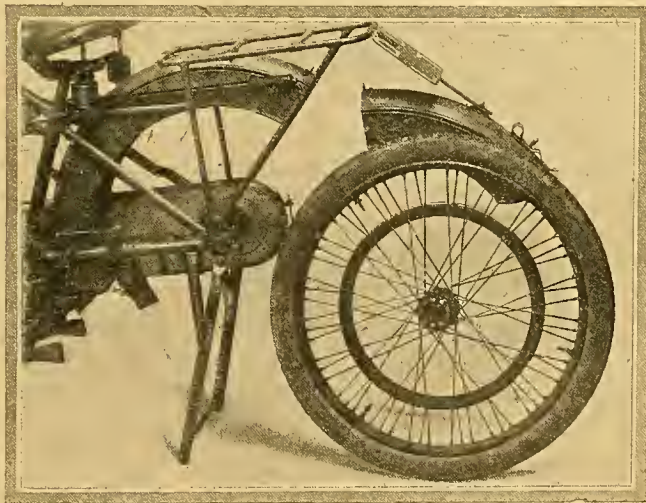
other really technical and practical factors? There is a smaller chance of error in a team award, though I think the time has come when a team should consist of more than three machines; but I never attach huge importance to special single rider awards; for instance, in the 1912 Trials I know of more than one stoppage on quite insignificant hills by machines which secured special awards, which incurred no penalty because no official happened to be at hand. If special awards are persisted in, riding skill may fairly be made a factor in amateur prizes; but in trade awards the public interest centres on the machine, not on the rider, and the personal equation should, therefore, be eliminated.

## A Warning about Cyclecars.

I should like to remind country buyers of cyclecars that they must not corner on these light vehicles as daringly as they would on a small car weighing from ten to fifteen hundredweight. In corner work a cyclecar resembles a sidecar; it may have its wheelbase and weight distribution so arranged as to give more balance than the average sidecar affords, but it requires full use to be made of the occupants' weight if any daring corner work is attempted. The man who tries to rush sharp corners on a three or four-wheeled cyclecar with himself and his (fair?) passenger leaning haughtily backwards is asking for trouble. "Weatherilting," as somebody calls it, is essential.

## Two Defects of some Repair Outfits.

I am surprised to find that many repair outfits lack two items which experience leads me to regard as no less vital than patches and solution—I refer to valve tubing and a small gaiter. I bought two repair outfits on tour the other week, both bearing very famous trade marks. One contained no spare valve rubber, and the other was destitute of any materials suitable for patching or protecting a gash in the cover.

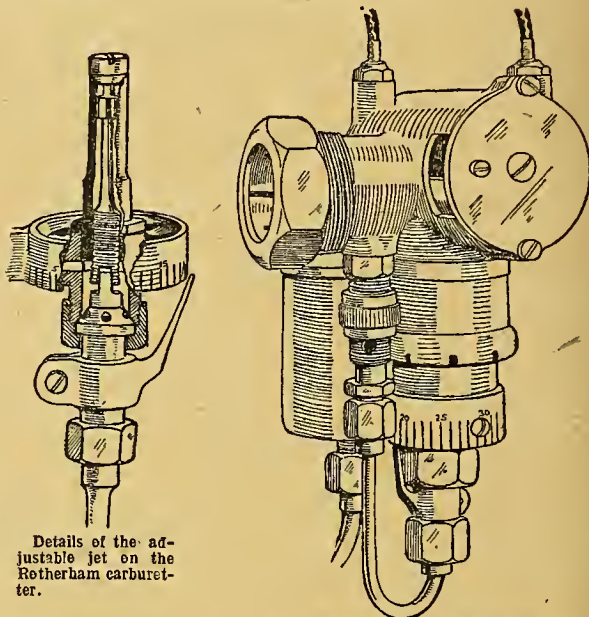


Quickly detachable wheels are a feature of the Lea-Francis, the first details of which appeared in our last issue. It will be seen that when a wheel is removed the driving chains and cases are left in situ.



## The Rotherham Pilot Jet Carburetter.

A NEW pilot jet carburetter for motor cycles will shortly be introduced by Rotherham and Sons, Coventry. It is fitted with an adjustable main jet, which has an indicator by means of which the settings may be accurately checked. The throttle and air controls are of the barrel type, and lie side by side, both being actuated by Bowden wires from the handle-bar. A branch pipe fitted just below the main jet feeds a pilot jet placed on the engine side of the carburetter. The bore of this jet is only .009, and it lies in a small choke tube, the air intake to which is adjustable by means of a screwed sleeve. This may be made to uncover ports in the side of the choke tube. The setting should be such that when the throttle is fully closed the engine will just turn over slowly. On the day of our visit we were unable to have a demonstration of the carburetter in actual use, but have been promised a trial in the near future. We are looking forward to this with some interest, as the carburetter appears capable of very fine adjustment. The carburetter is designed so that any part which might need attention is accessible, though there appears to be very little possibility of trouble. The float chamber is fitted with a neat spring clip lid, and the whole is finished in dull plating.



Details of the adjustable jet on the Rotherham carburetter.

New Rotherham pilot jet carburetter.

## The Latest Dew Spider Quad.

THE neat four-wheeler illustrated on this page has recently been built by H. E. Dew, of Eynsford, Kent, according to his own design.

In the general outline it follows the pattern of its predecessor, the  $3\frac{1}{2}$  h.p. J.A.P.-engined cyclecar, which, it will be remembered, was described and illustrated in our issue of October 12th, 1911. The latter machine was fitted with double belt drive from the counter-shaft to back axle, while the present one has chain transmission throughout, and several other alterations and improvements have been made.

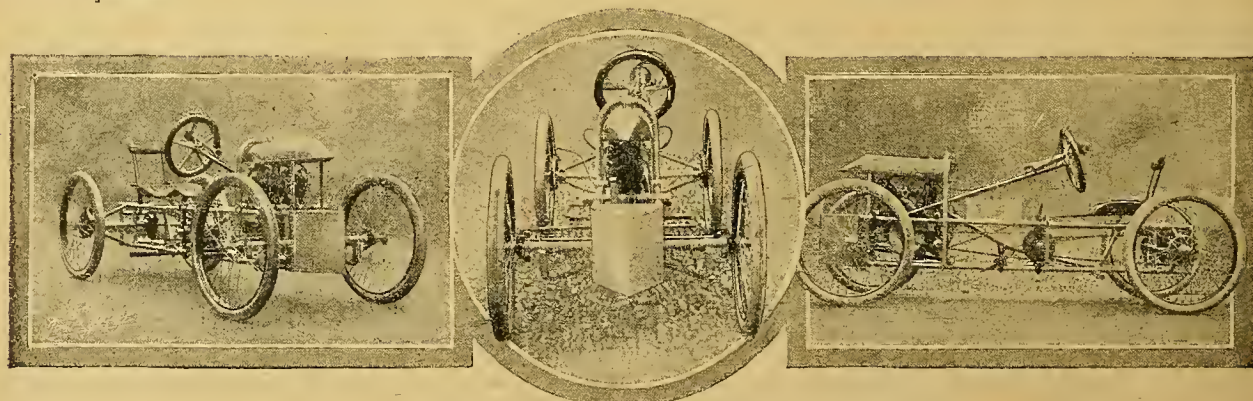
Describing it from front to rear, its salient points are three-point suspension, sprung fore part, the rear being quite rigid. The power is supplied by a 6 h.p. Blumfield twin engine (65 mm. bore  $\times$  95 mm. stroke), fitted into adjustable engine brackets, so that the engine may be moved either forward or backward for chain adjustment. The carburetter is an Amac, and

the magneto a Bosch. A metal-to-metal clutch and two-speed gear box (giving gears of  $4\frac{1}{2}$  to 1 on top and 8 to 1 on low) are mounted on the counter-shaft, which is held on ball races in a sliding frame, the sliding movement allowing for the adjustment of rear chain.

Two foot-operated band brakes are fitted to the rear wheels, which in turn are shod with Michelin steel-studded non-skid tyres, those on the front wheels being of the Clincher grooved pattern.

The finished model is covered in with thin sheet steel. In the illustration, however, these shields have been removed, so that the general outline may be more clearly observed.

Mr. Dew informs us that it has been designed for fast Colonial work, but before despatching it we understand that he will make an attempt to lower the cyclecar hour record.



Three aspects of the latest Dew spider quad described above.

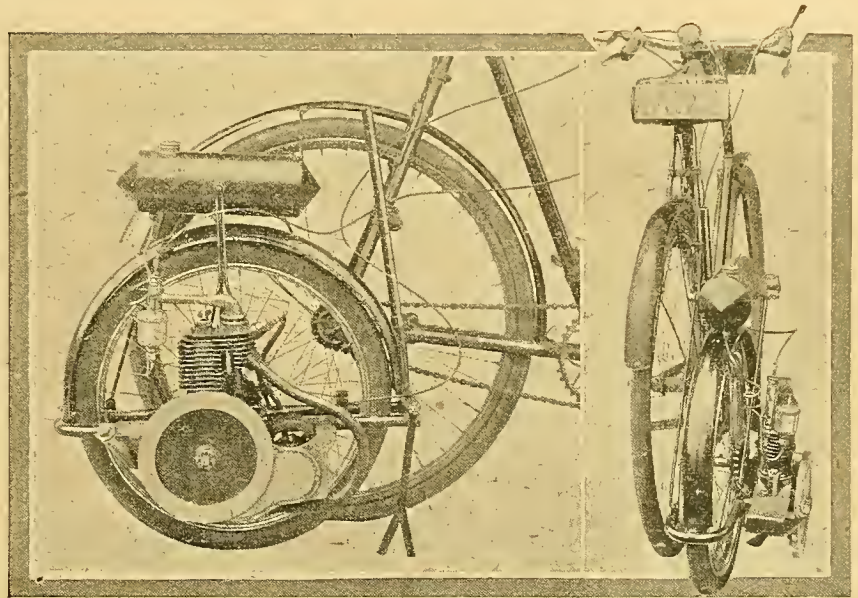


## The latest Wall Auto-Wheel.

Messrs. the International Auto-wheel Co., Ltd., Russell Garage, Russell Road, Kensington, W., have taken up the sole agency of the Wall Auto-wheel, which is now manufactured to their designs.

The power unit consists of a 1 h.p. four-cycle engine, 52 x 54 mm., attached to a frame supporting one wheel. The crank case casting comprises an oil tank and a platform for the magneto. The oil tank is arranged on the bird fountain principle, which means that a constant level is maintained in the crank case until the reservoir is empty. The magneto is gear driven, and the camshaft is geared 4 to 1 to the main shaft, there being two cams instead of one, so that the timing is not affected. To the end of the camshaft there is attached a sprocket, connected by a chain to another sprocket on the cycle wheel spindle. The inlet valve is automatic. A special carburetter is fitted, which is supplied with a single lever control. There is one sleeve in the vaporising chamber which uncovers the air and gas orifices at the same moment and in the correct proportion. Both the cam and main shafts run in ball bearings.

The unit is attached to the cycle in the following manner: There is a stay attached by clips to the back forks of the bicycle, to the chain stays and the rear spindle, thus forming a strong three-point attachment. The unit is bolted to the horizontal member of this bracket so that it is free to rise up and down with the



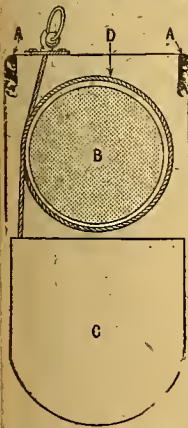
Side and rear views of the improved Wall wheel.

inequalities of the road. The carburetter control and the exhaust valve lifter are carried on the handle-bar.

The device is not intended for serious touring, but it is said to be capable of negotiating a hill of about 1 in 16.

## HAND STARTING DEVICE FOR FOUR-CYLINDER ENGINES.

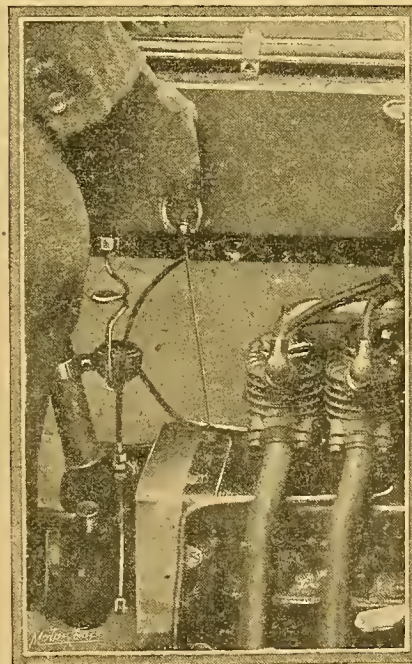
We have lately had the opportunity of inspecting an ingenious and simple device for starting four-cylinder motor cycles, invented by Mr. W. A. Halls-worth. It consists



A. Frame members. B. Flywheel. C. Case. D. Flexible wire.

This case is fixed beneath the flywheel, round which the wire is lapped once before being brought out through a hole in the flywheel cover. The wire is provided with a stop, which answers the double purpose of preventing it from being drawn too far in by the spring or too far out when being pulled to start the engine. When the spring has returned the wire as far as possible, and the handle ring is pushed into the clip provided on the flywheel cover, the wire encircles the flywheel loosely and drops back from contact with it into the guide

provided. Our illustration shows a rider in the act of starting his engine, a four-cylinder F.N., the wire being drawn out about half-way. The device is most



Starting the engine by means of a wire and loop.

effective. We saw the engine started several times, a single pull being sufficient in each case. The start can be affected from the saddle if desired.

### A Neat Accessory.

A smart oilskin cap cover has been sent us by the Para Rubber Co., 93, John Bright Street, Birmingham. It is



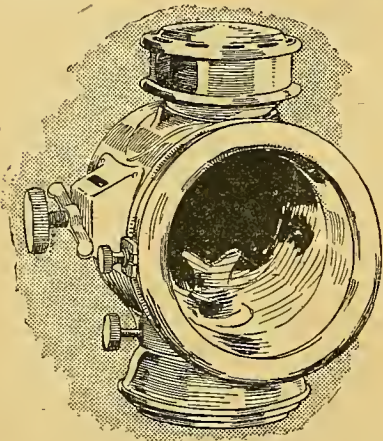
very light but thoroughly protects the head. When folded it will go into a coat pocket. These covers were used by some of the riders in the Six Days' Trials, and they are bound to appeal to all weather tourists.





#### A New Sidecar Lamp.

Brown Bros., Ltd., of Great Eastern Street, London, are marketing a neat oil side lamp for sidecars. The lamp may be had in brass or nickel finish, and with fixing for bracket on either side.

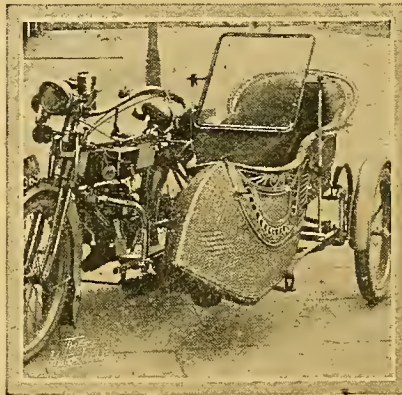


It is strongly made, and the fastenings are substantial, which is of great importance to sidecarists. In view of our leading articles urging sidecarists to show the extreme width of their vehicles, and

the general agreement with this advice, this accessory should be in strong demand.

#### A Sidecar Wind Screen.

A very neatly manufactured wind screen, for use on sidecars, has lately been placed on the market by Messrs.

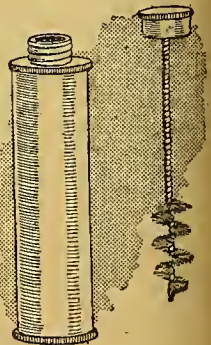


C. and W. Bluemel Bros., Wolston, near Coventry. The screen is made of transparent celluloid and is carried by special brackets mounted on the sidecar body. These brackets are arranged so that they do not interfere with the entrance

to the body, and so that the screen may be set at the most convenient and effective angle. A waterproof apron attached to the lower part effectually prevents any wind or rain passing under the screen. Instructions for correct fitting are supplied with each article.

#### Tyre Solution Flask.

The Coro Oil and Rubber Company, Ltd., St. Paul's Square, Birmingham, have introduced a very useful and practical flask for containing rubber solution. It is made of well polished plated brass, and to the stopper is attached a brush. This is by far the most practical means of carrying the solution, as it keeps in good condition, and the case cannot be damaged like lead collapsible tubes.



#### Burelto Sidecar Stand.

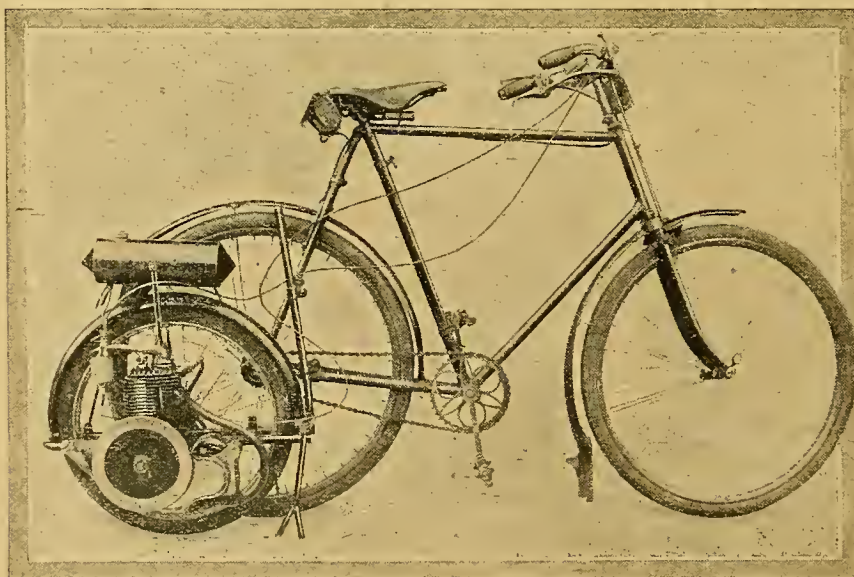
The accompanying sketch shows an ingenious sidecar stand patented by Mr. Eltoft, and manufactured by A. B. Burton and Co., Ltd., Hale, Cheshire. It may be clipped on to the frame of the sidecar and slid along the frame tube or axle so as to form a stand for the sidecar wheel or a rest for the cycle end of the axle when the sidecar is detached. A small rubber-tyred wheel is fitted to the bottom, and it may be fixed at any height or any angle by means of thumb nuts.



#### Six Days' Trials Notes.

Douglas riders won three gold medals in the Six Days' Trials, Messrs. Moffatt, Gibb, and Fletcher receiving the maximum award.

The 3½ h.p. Premier, ridden by Mr. W. B. Little, who won *The Motor Cycle* private owners' cup, was equipped with Stelastatic tyres, which gave every satisfaction. Mr. Dickson (7 h.p. Indian) also used the new Stelastatic tyre with every success, neither of these riders having occasion to use their inflators.

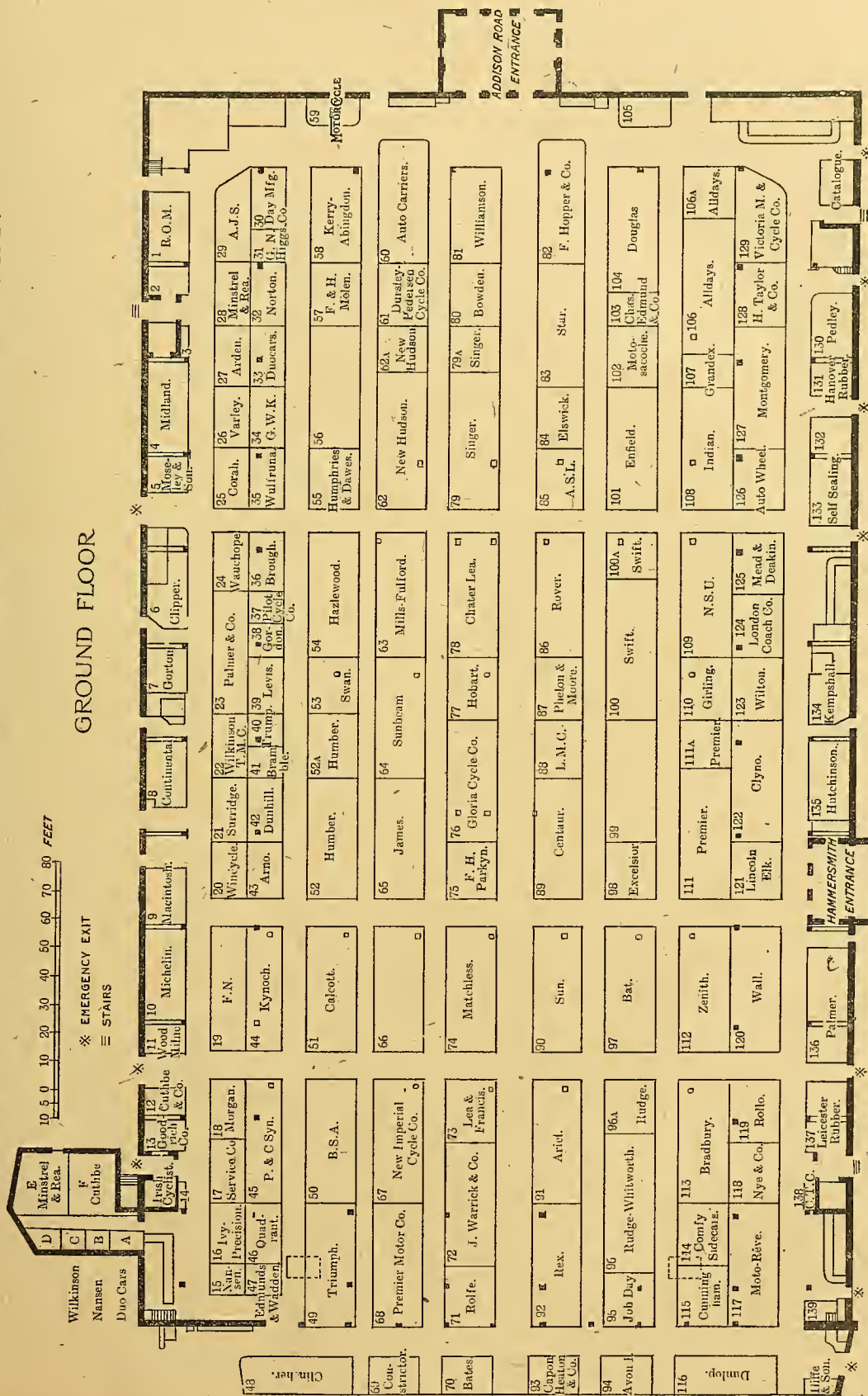


The latest Wall auto-wheel, described on another page of this issue. A four-cycle engine is now used.



From Monday, November 25th, to Saturday, November 30th.

## SHOWING POSITIONS ALLOTTED TO EXHIBITORS.



We reproduce above the Olympia Show plan showing positions of exhibitors. A somewhat novel arrangement of the stands will be made at this year's Olympia Motor Cycle Show. All exhibitors will be in the Main Hall and the tyre manufacturers will have stands round the sides. There will be no offices except in the Annexe, which will be entirely filled with them. This arrangement should be a great help to visitors, as it will enable any particular stand to be located with ease.



# Record Breaking at Canning Town.

In last week's issue, we gave some details of records annexed by Harry Martin, riding a 2½ h.p. Martin-Jap (85.5×39.5 mm.) He used the track on which so many motor cycle events were lost and won in the early days, probably for the last time. His machine was the same he used in the last B.A.R.C. meeting, being fitted with a Rotherham pressure-fed lubricator, and the exhaust-controlled forced induction to which reference has already been made in these pages. The day was fine, and there was practically no wind. His first attempt was the standing mile, which he easily obtained. Next he had a try for the standing five miles, which likewise fell to his machine. Finally, he made an attempt on the ten miles, but as he changed the pulley which gave him rather too high a gear, and the smaller one threw the belt rather out of line and caused it to twist

over, he had to give up. Despite these troubles Martin also captured the six miles record standing start. On his second attempt something in his eye caused him to stop.

## New records.

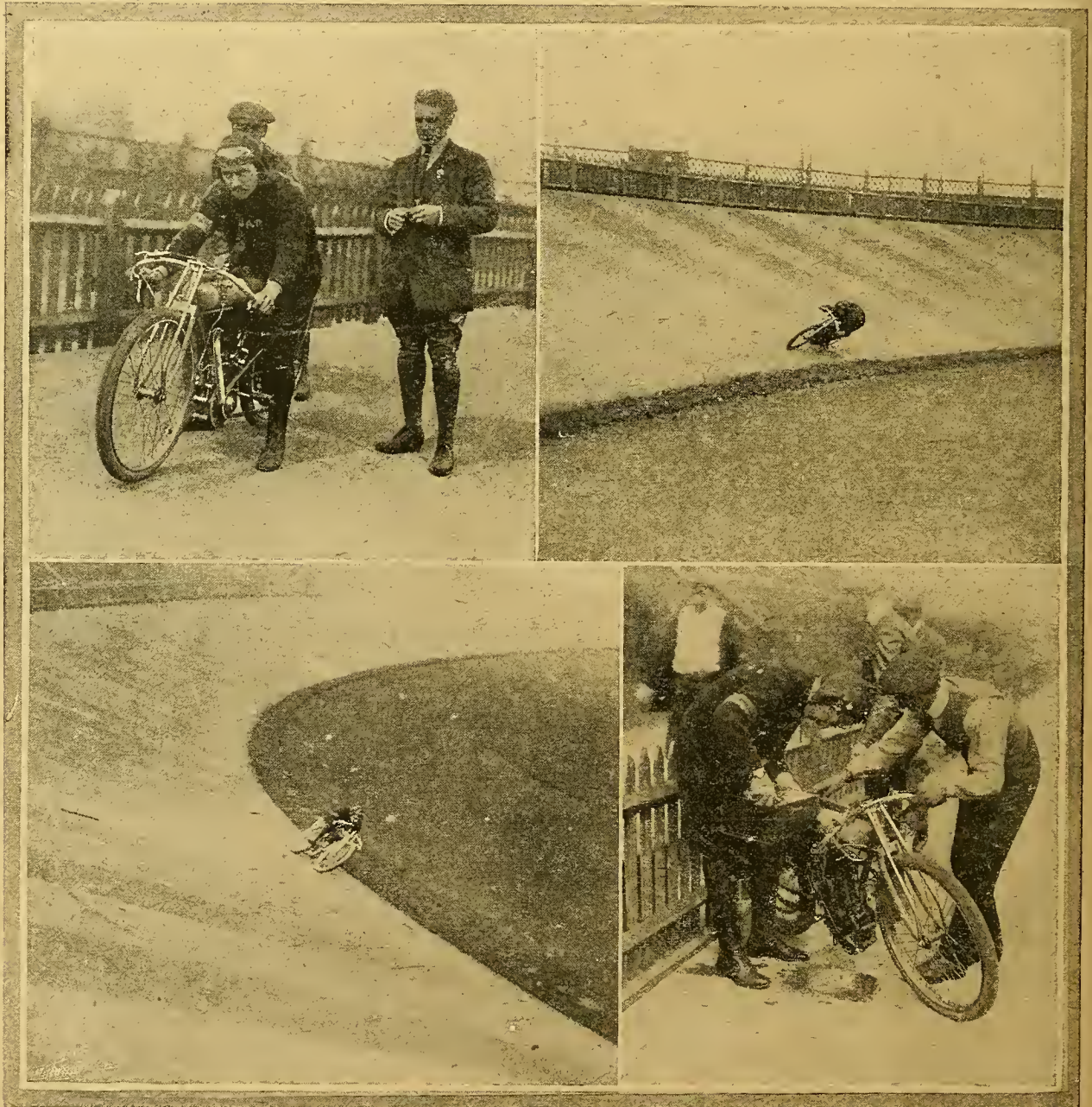
H. Martin (2½ Martin-Jap), Aug. 27th, 1912.

## Old records.

C. E. Bennett (2½ Mansfield), Aug. 10th, 1897.

1 mile	..	1m. 14½s. = 48.12 m.p.h.	1m. 16½s.
2 miles	...	2m. 19½s.	2m. 21s.
3	..	3m. 23s.	3m. 26½s.
4	..	4m. 27½s. = 54.21 m.p.h.	4m. 32½s.
5	..	5m. 32s.	5m. 40½s.
6	..	6m. 39½s.	6m. 47½s.

Martin used C.A.V. accumulator, Pratt's spirit, Wakefield oil, Dunlop belt, Continental tyres, and Amac carburetter.



1.—Start of the five miles record attempt. 2 & 3.—At full speed on the banking. 4.—Replenishing the fuel tank.



# A.C.U. Six Days' Reliability Trial.

## JUDGES' REPORT (Abridged).

**T**HIS year's Six Days' Trial was held under very bad weather conditions, which undoubtedly enhanced the value of the trial as a test of machines. The routes selected proved to be of a most varied nature, and fulfilled admirably the object for which they were chosen. Treating two of the steepest hills as "bonus hills," not involving the usual penalty of 50 marks, appears in the light of the final results to have been a mistake. The West Country, abounding in steep hills, sharp corners, and indifferent road surface, did not in fact prove severe enough to weed out more than 30 per cent. of the entrants, over 70 per cent. of those who completed the trial earning medals. Certain of the observed hills were not chosen on account of their steepness alone, and yet caused the failure of several whose machines were capable of climbing more severe gradients. The inclusion of such hills is most desirable, but in future competitors should be informed by means of a flag or otherwise where they officially commence and finish. The trial, in spite of the weather, was a great success, and the local enthusiasm shown in all towns and villages traversed was a most gratifying feature.

The system of running to a speed of 20 m.p.h. with ten minutes latitude early or late of exact schedule time at any point of the route (not disclosed to the competitors) worked satisfactorily. No excessive speeds on the road were observed, and the longest time available for an adjustment or repair without risk of losing marks was less than twenty minutes. This system had probably also the effect of making the trial less severe in one respect than last year's trial, when the regulations permitted the competitors to arrive just outside the known checking stations as early as they pleased. Whatever may have been the cause, the condition of the machines at the end of this trial was in general appreciably better than at the end of last year's trial.

The system adopted this year of starting the competitors at minute intervals, although tedious to the officials, successfully prevented "bunching" and traffic stops, and facilitated the arrangements at the various controls.

In the provisional results issued at Taunton, the cup offered by Colonel Boles for the best performance by a private owner driving a solo machine on the observed hills, and the cup offered by the proprietors of *The Motor Cycle* for the best performance throughout the trial by a private owner driving a solo machine, were credited to W. G. McMinnies. Mr. McMinnies has explained that at the time of the trial he was not the *bona fide* owner of the machine which he rode, and has spontaneously waived any right he may have had to any special award.

Another case to which the judges would draw attention is that of H. Mellor Jameson (Enfield sc.). Mr. Jameson earned the maximum number of marks and would have been awarded two of the special prizes had he not incurred disqualification by a breach of the rule as to assistance.

### Transmission.

The condition of the machines at the conclusion of the trial was, as stated above, excellent. The behaviour of the various types of gear during the trial is most instructive. The comparatively simple variable pulley type of gear was represented by the Gradua, which won two gold medals out of five starters, and the Rudge Multi which won two gold medals out of six starters. The judges are of opinion that this form of gear, whilst excellent for general purposes, does not provide a sufficiently low emergency ratio, the lowest ratio obtainable being in the neighbourhood of 8 to 1, and this only at the risk of unfair treatment of the belt in passing over the small engine pulley.

Epicyclic gears were fitted to many machines.

Comparing the two most popular types of hub gears, we find that the Armstrong hub runs solid on its middle gear, whilst the Sturmey-Archer runs solid on its high gear. Presuming the ratios between the three gears are the same in both hubs, it follows that with the Armstrong gear a smaller engine pulley must be employed to obtain as low a gear as is possible with the Sturmey-Archer, with greater risk of belt slip. On the other hand, the reduction when in bottom gear is performed through one epicyclic train in the case of the Armstrong hub against two trains in the Sturmey-Archer hub, with less frictional loss.

The V.S. gear, fitted to the Matchless machines, gives a direct drive on top and fifty per cent. reduction on the low gear. The necessity for an intermediate ratio must often be felt on these machines, although the gear as fitted appeared easy of manipulation and adjustment.

Counter-shaft gears were fitted to sixteen machines. Here the whole transmission is very simple, and the performance of this type of gear generally throughout the trials leaves the judges no room to doubt its ultimate success over other types. Besides the advantage of the wide range of gear ratios obtainable and the better distribution of weight, the counter-shaft gear possesses the important advantage of leaving the back wheel free from complications and the back tyre easy of access. The quickly detachable wheel is rendered a more feasible proposition. The carrying of a spare wheel by passenger machines should be encouraged in future trials.

### Engines.

With one exception no serious trouble was recorded. It is to be regretted that no representative of the 500 c.c. twin-cylinder type of engine was entered for the trial. This type of engine, with a suitable variable gear, would seem ideal for a solo machine and occasional use with a sidecar.

### Ball Bearings.

The hub bearings and steering heads of many machines were in perfect condition at the end of the trial, with no appreciable side shake. But almost as many machines left much to be desired in this respect.

### Brakes.

The fact that all the machines safely negotiated the many steep descents included in the trial shows that the brakes in general were efficient. In the opinion of the judges, however, the method of applying the brake is in general open to criticism. Foot brake pedals are not nearly stout enough or large enough. The adjustment of the foot brake is a further detail that requires improvement. Front wheel brakes as at present fitted are, in general, practically useless, the pressure applied by the hand being too feeble to produce much retardation of the machine. The fault can be remedied in two ways. Either the leverage should be increased, giving necessarily a longer range to the movement of the lever, or the method of mounting the brake shoes should be modified. As at present fitted the front wheel brake blocks approach the rim at right angles to the surface. The fitting should be so designed that the blocks approach the rim at an acute angle, say 45 degrees with the direction of the rim's motion. This gives a self-applying action to the brake, so that a light hand pressure effects a great pressure between the block and rim. When slotted guides are used they should slope upward and forward instead of being parallel to the fork. If pivoted links are used the ends secured to the forks should be much higher up than the brake shoes.

### Protection of Machine and Rider.

Once again the judges have to call attention to the fact that the mudguards, as a rule, do not give adequate protection to the machine and rider. The Scott machines, with their footboards and sloping shields, are notable exceptions. Some failures were reported due to the so-called waterproof magneto becoming water-logged. Manufacturers of motor cycles must evidently not place too much reliance on the magneto being, in itself, waterproof, but must still provide adequate protection.

### Cyclecars.

The employment of friction drive in the G.W.K. machines is worthy of note as having proved quite satisfactory under certain conditions, in spite of the doubts commonly expressed as to the practical efficiency of this means of variable transmission. The excessively long belts used on such machines as the Duocar would appear to be a likely source of trouble, owing to the tendency under certain road and driving conditions towards undue oscillation and possible twisting of the belts. Many sidecars and tricars apparently suffered from lack of sufficient weight on the driving wheel.

Judges } E. PERCY GREENHILL,  
D. F. NIGHOLL, Major R.A.  
ARCHIBALD SHARP.



## A.C.U. Six Days' Trials: Amended List of Awards.

THE meeting of the judges last week confirmed the following awards:

The private owners' team prize, offered by His Worship the Mayor of Taunton, Alderman W. F. Whittingham, for the best performance of a team of three private owners, who were nominated by and were members of an affiliated club, was awarded to the Woolwich and Plumstead team, composed of Messrs. Nott, Tassel, and Guest, all driving Matchless sidecar combinations. The original rule stipulated that at least five teams should be nominated. His Worship the Mayor, however, was pleased to award the prize notwithstanding the fact that only three teams entered.

The following competitors who, in the preliminary announcements, were down as having been awarded silver medals were awarded gold medals: A. E. Catt (3½ h.p. Triumph) and W. B. Gibb (2¾ h.p. Douglas).

The judges carefully considered the case of G. L. Fletcher, and came to the conclusion that sand was maliciously put into his engine by some evilly disposed person. He is therefore credited with all the marks he lost on the last day of the Trial, and is awarded a gold medal. The A.C.U. is offering a reward of £10 for any information which will lead to the detection of the originator of this dastardly act.

The case of H. Mellor Jameson (6 h.p. Enfield sidecar) was discussed, and it was decided that, owing to his being guilty of a technical breach of the rules (his passenger assisted him), he was ineligible for

*The Motor Cycle* Cup for the best performance throughout the Trial by a private owner driving a passenger machine. The judges, however, are fully aware of the fact that he put up a most creditable performance.

### The Private Owner Awards.

The prize offered for the best performance by a private owner driving a solo machine on the observed hills, presented by the president of the Taunton and District M.C.C., Col. D. F. Boles, J.P., M.F.H., was awarded to J. D. Corke (5 h.p. A.J.S.)

The cup offered by Mr. T. S. Penney, J.P., for the best performance of a private owner on the observed hill was awarded to R. E. Guest (8 h.p. Matchless sidecar).

The silver cup offered by the proprietors of *The Motor Cycle* for the best performance throughout the Trial for a private owner driving a passenger machine was awarded to R. E. Guest (8 h.p. Matchless).

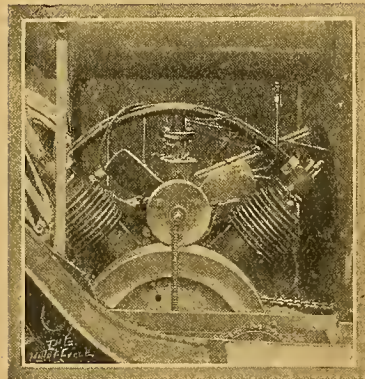
The silver cup offered by the proprietors of *The Motor Cycle* for the best performance of a private owner driving a solo machine was awarded to W. B. Little (3½ h.p. Premier).

The gold medal awarded to the rider who climbed Porlock Hill and did not qualify for any other award was granted to V. Wilberforce (2¾ h.p. Douglas).

W. G. McMinnies, whose name figures in the preliminary list of awards, did not come under the "private owner" definition, the two-speed Triumph he rode not being his own property.

## Another New Cyclecar.

WE had the opportunity the other day of inspecting at the works of Messrs. Godfrey and Nash at Hendon the latest model of the G.N. cyclecar, previous models of which have already been described in *The Motor Cycle* pages, and it will therefore suffice if we deal with the new features of the present model, and refer our readers to the previous descriptions for the general arrangement details.



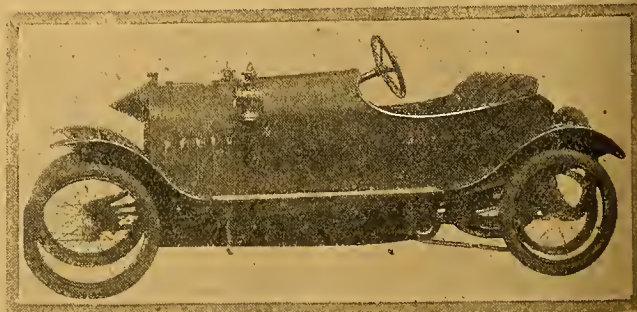
The twin-cylinder engine fitted to the G.N. cyclecar. The points to be noticed are the overhead inlet valves, cooling fan driven by flywheel, and cylinders set at 90 degrees.

In the first place the firm are employing an air-cooled V type engine of their own manufacture, 80 x 98 mm. bore and stroke. A large outside flywheel 14½ in. in diameter is employed, and to this is due the remarkable capacity of the engine to run steadily at slow speeds.

A feature of the engine is the 5½ in. white metal bearing between the crank and the flywheel.

Brown and Barlow carburetter and Eisemann high-tension magneto are fitted. From the engine a roller chain transmits the drive to the clutchshaft. The

clutch is of the gripping variety, friction being obtained by the contact of metal with two discs of Ferodo. From the clutchshaft two chains take the drive to the counter-shaft, and a simple arrangement of dogs enables either of these to be operated at will. At each end of this counter-shaft belt pulleys are fitted to accommodate rim. Lyso belts, which transmit the power to the rear wheels. The clutchshaft, it may



Broadside view of the new G.N. cyclecar.

be added, is really hollow, rotating on a steel spindle. Both hand and foot brakes act on the same shoes, which press internally on the belt rim, the rocker-shaft of which is carried on the top of the neatly designed radius rods. Ackerman steering is employed, controlled by wire cables fixed to a drum on the lower end of the steering column.



# LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

## Chain v. Belt Drive.

Sir,—Are not the makers and upholders of the belt-cum-chain drive overlooking one point, and that is belt speed. Now the faster a belt runs up to about 4,000 feet per minute, the more power it will transmit; beyond this region centrifugal force counteracts the advantage gained by speed, and the belt must be too tight to last long. A great many of these machines are being run with a sidecar, and it is interesting to take the case of a sidecar going up a hill at 15 m.p.h., "all out," on bottom gear. Here we have the machine moving at 22ft. per second, and, taking the wheel diameter as 26in. and the belt rim at 20in., we have a belt speed of  $\frac{20 \times 22}{26} = 17\text{ft. per second or } 1,020\text{ft. per minute. Compare}$

this with running a solo on the high gear (with the engine developing the same power), say, at 48 m.p.h., when the belt is running at a speed of  $\frac{48 \times 88 \times 20}{60 \times 26} = 54\text{ft. per second or } 3,240\text{ft. per minute, which is about the most efficient speed.}$

In the case of a geared hub, exactly the reverse is the case, as here we have the lower the gear, the higher the belt speed for a given rate at which the machine is travelling. I should like to hear some makers' and also users' opinions and experiences on this point. Theoretically the geared hub should cause much less wear on the belt than the counter-shaft gear, but as the motor bicycle is one of those cases in which practice upsets theory I should not be in the least surprised to hear that I am entirely wrong. C.P.A.

Sir,—I was greatly interested by "Ixion's" vigorous defence of belt drive in your issue of August 22nd. Now I have owned four motor bicycles, all belt-driven, and every belt I use gives me more trouble than its predecessor. I have just returned from a holiday in Anglesey, when I was accompanied by a friend. We both rode  $3\frac{1}{2}$  h.p. belt-driven machines. My friend's was a brand new rubber canvas belt; mine had seen some hundreds of miles usage, but should have lasted me throughout the trip without giving much trouble. We went from Bournemouth to Anglesey without trouble, then came the deluge.

First day (ninety miles).—My belt broke once; the fastener broke once; my friend's belt broke twice.

Second day (sixty-four miles).—My friend's broke once; mine stretched and had to be shortened.

Third day.—My friend broke a belt fastener; I had to shorten mine.

Fourth day (140 miles).—I put on my spare belt and we had no trouble beyond the belt coming off twice, although it was quite tight. This was due to using a badly designed fastener.

Fifth day (170 miles).—My belt broke twice, when I changed to the original belt which broke three times. My friend's belt collapsed altogether and literally fell to pieces, he being obliged to buy a new one twenty miles from home. Our belts were of well-known and much advertised makes costing over a guinea each.

Has "Ixion" ever thought of the cost of belt drive? Under the most favourable circumstances it costs me between 1s. and 1s. 6d. per hundred miles, and in the case of my friend's belt it cost him over 2s. a hundred. This is as much as it costs in petrol and oil, and, in addition, I get a free engine up hill when I am caught in a heavy storm.

Would any cyclist or car driver be content with such a transmission system? Unfortunately the choice of chain-driven machines is small, and unless something fresh appears at this year's show, I shall be obliged to purchase another belt-driven machine for next year; but I shall still regard the belt as a very poor makeshift and a blot upon the fine piece of mechanism which the modern motor bicycle undoubtedly is. E. K. WYATT.

## Tyres.

Sir,—With the modern motor cycle in ordinary usage mechanical breakdowns are practically non-existent. But, oh, the tyres! Why tyre makers cannot make a tyre they can safely guarantee holeproof for at least one season I cannot understand. In these days of good engines, none but the speed merchant, pure and simple, or road hog need worry about two or three pounds extra weight in the tyres. Strong special (?) tyres as at present made seem good enough for the front wheel, but for the driving wheel of even  $3\frac{1}{2}$  h.p. machines with sidecar they should be at least twice as thick on the treads and tapering to the beads. My experience of specially heavy tyres for sidecar work with high-powered machines as at present made is that they are only from  $\frac{1}{4}$  in. to  $\frac{3}{8}$  in. thick between the studs, and after from 600 to 1,000 miles with sidecar they are only fit for the scrap-heap. My idea is four-ply, two extra plies along tread, and a third going halfway round, making a seven-ply tread, and all well embedded in rubber; or why not line present tyres like the Le Paris Club Cuirasse pushbike tyre? Thousands I am sure, like myself, are willing to pay for the right article. You do not half grind it in enough about tyre failures in the various competitions, trials, etc. Oh for a good strong tyre!

ONE IN THE GREAT ARMY OF ROADSIDE SOLUTIONERS.



W. Simpson, of Newcastle-on-Tyne, with his  $3\frac{1}{2}$  h.p. Lincoln Elk-gondola sidecar combination. The Lincoln Elk double drive two-speed gear (belt for high gear and chain for low gear) is fitted, and the sidecar is the touring gondola. We are told that both machine and sidecar are giving every satisfaction. The gear ratios adopted are 5 and 10 to 1.



### A Novel Sidecar.

Sir,—Re your reference, on page 963 of *The Motor Cycle* of August 22nd, regarding an enormous sidecar resembling a giant vegetable marrow, it may be of interest to horticulturists, to know that this vegetable, of which I am the grower, was grown from three ply seed during this extremely wet season, and notwithstanding the adverse climatic conditions, attained the weight of 65 lbs.—not a bad record considering that the artificial manure consisted mainly of glue. Should Messrs. Sutton's Seeds, of Reading, be interested in abnormal vegetables, they may procure seeds from me which will be guaranteed to grow in like proportion at the modest cost of £12 12s. per seed. CHAS. WAKEMAN.

### A Problem that Baffled.

Sir,—In reference to the article that appeared some time ago in *The Motor Cycle* upon petrol consumption of the motor cycle compared with the motor car, I send you the following notes:

The head resistance (windage) of a motor cyclist and machine is assessable at six square feet.

You will remember Col. R. E. Crompton in *The Cyclist* measured his own and pedicycle resistance at  $5\frac{1}{2}$  square feet. But he is tall, and the average pedicyclist with machine will not measure so much, say,  $4\frac{1}{2}$  square feet. Then allow  $1\frac{1}{2}$  feet more to cover the extra head presentment of motor cycle and we get 6 square feet.

We then make the statements:

Motor cycle, 3 cwt. load, has 6 feet head resistance, and

Motor car, 30 cwt. load, has 30 feet head resistance, thus

Motor cycle for every load-unit meets two windage-units, and

Motor car for every load-unit meets one windage-unit.

So

Motor cycle, three load-units  $\times$  two windage-units = six load windage units.

Motor car, thirty load-units  $\times$  one windage-unit = thirty load-windage units.

Load windages (six to thirty) are as one to five, which equal the petrol consumption one to five gallons.

ELUCIDATOR.

### A Sociable Tricar.

Sir,—I am sending you photographs and particulars of a sporting type tricar, which I have built throughout for my own use. The engine is a twin-cylinder,  $101\frac{1}{2}$  mm. bore, 130 mm. stroke, air-cooled, set at  $80^\circ$ , magneto ignition, with accumulator and trembler coil to one cylinder for easy starting. The drive is by V belt over expanding pulley and hinged back wheel, to tighten belt, giving any gears from  $4\frac{1}{2}$  to  $2\frac{1}{2}$  to 1, the operations being independent, and either giving a smooth start. The belt is of strong proofed canvas, to which are fixed fibre blocks. The machine is fitted with electric lamps and magneto dynamo. The weight is 6 cwt.

It was driven from Stirchley, Birmingham, to Brooklands on July 20th with one cylinder removed to compete in the All-comers' Handicap. It runs just over thirty miles per gallon; distance run, quite 3,000 miles. I have just put on a new belt, but the old one is not worn out. It climbs Sunrising Hill on a  $3\frac{3}{4}$  to 1 gear.

I have been obliged to refuse orders owing to present inability to promise date of delivery. If any of your readers are interested in furthering the construction of this type of cyclecar, I shall be pleased to communicate with them.

S. CARTER.

### Decompressors.

Sir,—I have read with interest the excellent article on decompressors which appeared in the issue of August 15th, but looked in vain for mention of the Endrick decompressor. This device I have recently purchased and fitted to a  $3\frac{1}{2}$  h.p. of well-known make and find that it entirely removes the starting difficulty, and though the machine is fitted with a clutch, I have, since fitting the decompressor, taken to starting with a push; it is also invaluable in many other ways, such as starting up on the stand, etc., and, taking into consideration its low price and simplicity, it is, in my opinion, one of the accessories which supply the many long-felt wants of motor cyclists. I have no interest in the manufacture of this article, but speak as a satisfied user. GEO. F. PARSONS.

### Inglorious Devon.

Sir,—I was interested to read your correspondent's letter on this subject in your issue of August 22nd, and I do not think for a moment there are any Devonian motorists who will not agree with him in every way. Our roads are an absolute disgrace, both as to repairs and maintenance, and apparently there is little or no organised supervision, as invariably the whole width of the so-called roadway is re-metalled at the same time, and what is worse is left so at night, while the methods and materials used in such work have been abandoned as obsolete in all up-to-date practice. The local councils controlling our system of roads are composed chiefly from the bucolic interest, who, while no doubt being excellent judges of manure, have not the least idea of up-to-date road work, with the result that the bottom foundations of the road have vanished, resulting in the present pot-holes and grit which have made Devon a by-word all over England.

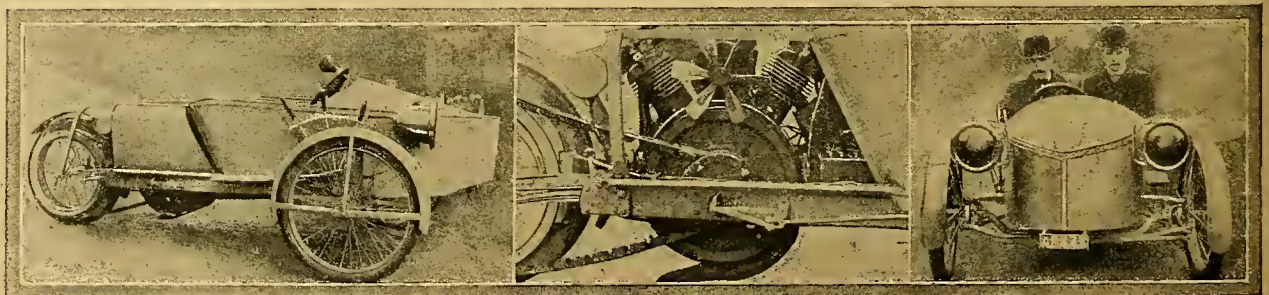
This policy adopted by the local authority has resulted in universal disgust, and the loss of a number of our best visitors, and the withholding of any support from the Road Board. Absolutely nothing will be done until concerted action has been taken by Devon motorists and no further licences renewed in the county. DISGUSTED.

Sir,—The North Devon roads have been very much in front of the footlights lately, but I think, in common fairness to the surveyors, it is decidedly unfair to class all the roads as bad, the roads in the urban areas are really all that can be asked for—the fault lays with the three huge rural areas, and these areas are as poor as they are large.

We now, however, see some prospect of improvement. The Barnstaple R.D. Council now admit that their roads are in an appalling state, and, believing that their surveyor has now more than he can deal with, at their last meeting appointed two road foremen to assist the surveyor. In the discussion it came out that the surveyor had no less than 600 miles of roads to supervise, and did it in a way without any assistance other than an office boy; it was also generally admitted that more stone was needed on the roads. This is decidedly encouraging.

The Lynmouth-Simonsbath-Dulverton Road has been in the hands of contractors for widening for a long time, and was due to be completed a year ago last April. The contractors have now thrown up their contract, and the Dulverton Council taken it up themselves. The road is now so bad that it is closed for traffic as being unsafe south of Brendon Twogates. I understand the Council intend to push on with the road improvement with all possible speed.

DEVONIAN.



The novel type sporting sociable referred to in S. Carter's letter.



# All The Refinements

## of an up-to-date motor cycle

### PROVED

by request - to be desirable  
and by test - to be reliable

are embodied in the

## New



## Model

**ENGINE.**—Jap 5-6 h.p. twin cylinder, 76 x 85 mm. bore and stroke, capacity, 770 cc. mechanically operated side valves; or Jap 7-8 h.p. twin cylinder, 85 x 85 mm. bore and stroke, capacity, 964 c.c., mechanically operated side valves.

**FRAME.**—The BAT improved (patent applied for) ball bearing spring frame. Perfect insulation of the rider, and a natural and comfortable sitting position.

**GEAR.**—The BAT two-speed gear box, gear wheels always in mesh, made from "Ubas" steel, carefully hardened and ground true after hardening; ball bearings throughout. Smooth and silent running. Operated by lever at side of tank.

**CLUTCH.**—The BAT internal expanding clutch (patent applied for), normally in action, released by foot lever on left hand side. Adjustment provided for slip, or can be locked tight up. No end thrust when driving.

**FOOT-STARTING.**—The new BAT foot-starter enables the rider to start the engine by a kick of the foot while seated in the saddle. With the low gear engaged the clutch is gently let in and the machine moves away as smoothly and easily as a thousand pound car. Whether used as a solo mount or with a sidecar the machine is always completely under control.

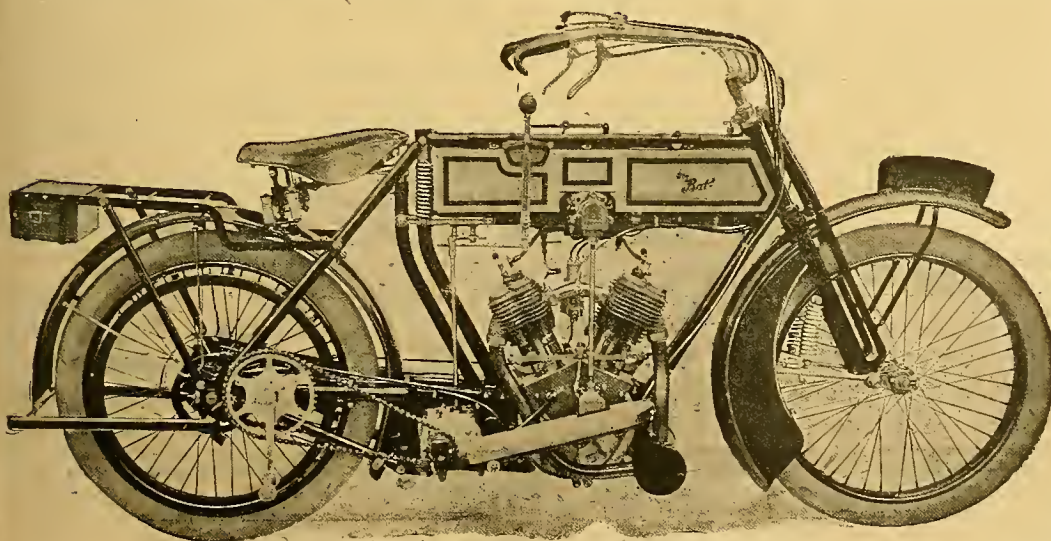
**TRANSMISSION.**—Renolds  $\frac{5}{8}$  x  $\frac{7}{8}$  in. Roller Chain.

**LUBRICATION** is effected by suction from the crank case. It is quite automatic, clean and reliable. We have used this system exclusively for the past seven years, and have every confidence in it.

**IGNITION.**—The Bosch high tension magneto. This is fitted directly over the engine, in a cradle which forms part of the frame. The tank is recessed, and the magneto is covered in entirely. It is driven by bevel gears carried on either end of a vertical live shaft. The drive is silent, smooth and positive.

**BRAKES.**—Two very powerful foot brakes, independent action, easy adjustment.

**MUDGUARDS.**—4 in. steel, specially strengthened. Side wings to front mudguard.



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of reliable, smart,  
& serviceable machines  
from which to select a  
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ARIEL, 1911, 3½ h.p. ....	£27 10
ARNO Lightweight, handy and powerful, 2½ h.p. Palmer .....	£30 0
BAT-J.A.P., 1911, with Millford sidecar .....	£45 0
BAT-J.A.P., 1910, with Millford radial coachbuilt sidecar, Cowey, F.R.S. lamp, etc., 8 h.p., Palmer and Kempshall .....	£55 0
BRADBURY, vertical engine, good tyres, suit beginner, 2½ h.p. ....	£5 0
BRADBURY, 1912, standard, footboards, 3½ h.p. Dunlop .....	£42 0
BRADBURY, 1912, good for sidecar, 3½ h.p. ....	£42 0
CLYNO, 1912, second-hand, standard machine .....	60 Gns
CLYNO, 1912, standard, 5-6 h.p. ....	£59 10
CLYNO, 1911, standard, 5-6 h.p. ....	£53 0
CLYNO, 1912, second-hand, standard machine .....	60 Gns
CLYNO, 1912, standard sidecar with luggage-carrier .....	£15 0
DOUGLAS, 1911 lady's model, 2-speed, free engine, 2½ h.p. ....	£38 10
DOUGLAS, 1911, 2-speed, just overhauled, 2½ h.p. Avon .....	£37 10
DOUGLAS, Model F, 2-speed, etc., 2½ h.p. ....	£38 10
DOUGLAS, 1911, standard .....	£31 0
ENFIELD, 1911 2-speed, free engine, pan seat, a beauty .....	£37 0
F.N., 1908, 4-cylinder, complete with sidecar, 4½ h.p., Michelin .....	£28 0
HUMBER, 1911, a handy machine, 2 h.p., Dunlop studded .....	£25 0
HUMBER, 1911, shop-soiled only, 2 h.p., Dunlop studded .....	£32 0
HUMBER, 1910, 2-speed, free engine, 3½ h.p. ....	£33 0
MOTO-REVE, 1909, magneto ignition, handle-bar control, very light and low, an ideal light- weight, 2½ h.p. ....	£20 0
MIDGET Bicar, Precision engine, Mabon clutch, hand starter, 3½ h.p. ....	£27 10
MOTOSACOCHE, 1911, good condition .....	£24 0
NEW HUDSON, 3-speed gear, a beauty, 1912, little used, 3½ h.p., Dunlop .....	£52 10
P. & M., 1911, enamel and plating in very good condition, complete with Millford radial side- car, 3½ h.p. ....	£60 0
PREMIER, 1911, very powerful engine, nice con- dition, 3½ h.p., Dunlop .....	£35 0
PEUGEOT, with Chater-Lea frame, low, with foot- boards, and Mabon clutch, 5-6 h.p., 2½ in. tyres .....	£22 10
PHILON & MOORE, 1909, 2-speed and free en- gine, useful for sidecar or solo work, 3½ h.p., Kempshall and Continental .....	£36 0
QUADRANT, Palmer .....	£6 10
REX DE LUXE, 1911, 2-speed and free engine, 5 h.p., Continental and Hutchinson .....	£40 0
REX DE LUXE, 1909, spring forks, and mageto, 5 h.p. ....	£28 10
REX DE LUXE, 6 h.p., twin, 2-speed, 1911, with Turner coachbuilt sidecar, new engines fitted, and thoroughly overhauled by the Rex Co. in April, 1912, sidecar fitted with hood, screen, and luggage carrier, Rom Combination tyre on driving wheel, all three tyres done about 500 miles only .....	£57 10

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REX Sidette, second-hand, perfect sidecar com- bination .....	£45 0
REX and sidecar, powerful and reliable .....	£43 0
REX, 1910, Speed King overhead valves, French grey, very racy and smart, 5 h.p. Continental .....	£33 0
REX, 1911, tourist, very flexible and fast, nice condition, 5 h.p., Continental .....	£35 0
REX, 1910, tourist, almost new, 5 h.p., Service and Continental .....	£33 0
REX, 1909, spring forks, drop frame, low and smart, long exhaust pipe, 3½ h.p. ....	£22 10
REX, 1910, tourist, 5 h.p., Continental .....	£33 0
ROC, very low, powerful, and reliable .....	£23 0
RUDGE, 1912, T.T., 3½ h.p., Dunlop .....	£42 10
RUDGE, 1912, standard, excellent throughout, 3½ h.p., Dunlop .....	£44 0
SCOTT, 1910, 2-speed, free engine, kick starter, 3½ h.p., Palmer .....	£32 0
SCOTT, 1911, 2-speed, free engine, and kick starter, 3½ h.p., Palmer Cord studded, 26 x 2½ .....	£47 10
SCOTT, 2 cylinders, 2-stroke, water-cooled, 1910, 3½ h.p., Michelin .....	£32 10
SCOTT, 1911, 2-speed, free engine, handy, and powerful, 2½ h.p., Palmer .....	£30 0
"SERVICE" Lightweight .....	£30 0
TRIUMPH, 1909 .....	£27 0
TRIUMPH, 1909, many 1911 improvements, 1912 magneto, 3½ h.p. ....	£32 10
TRIUMPH, 1908-9, Service belt, exhaust whistle, 3½ h.p., Clincher .....	£27 0
TRIUMPH, 1912, T.T. roadster, absolutely like new, 3½ h.p., Clincher .....	£45 0
TRIUMPH, 1910, standard, beautiful condition, 3½ h.p., Clincher and Hutchinson .....	£36 0
TRIUMPH, 1909, very reliable, 3½ h.p., Dunlop ..	£27 0
TRIUMPH, 1910, free engine, T.T. bars, 3½ h.p., Dunlop and Michelin .....	£37 0
V.S., 1910, complete with lamp, generator and nightingale whistle, 7-9 h.p., Michelin and non-skid .....	£32 0
WANDERER, magneto and spring frame. Service belt, 3 h.p., Peter Union and Shamrock .....	£25 0
WANDERER, 1911, Service belt, trial machine which put up such good performances, 3 h.p., Service studded .....	£28 10
ZENITH, 1911, very good condition, 3½ h.p., Kempshall .....	£45 0

The following are commission sales for cash only.

3½ h.p. BAT-J.A.P., complete with generator, horn, and spare belt. ....	£25 0
B.S.A., 1912, clutch model, and sidecar, 3½ h.p. ....	£60 0
1911 CLYNO and Chater-Lea sidecar, an excellent combination, 5-6 h.p. ....	£55 0
2½ h.p. ENFIELD, 1911, 2-speed .....	£35 0
2½ h.p. ENFIELD, 1911, 2-speed .....	£18 0
F.N., 4-cylinder, very flexible, 1912, 5-6 h.p. ....	£47 10
F.N. Lightweight, 2-speed, free engine, 1912, 2½ h.p. ....	£35 0
F.N., 4-cylinder, and sidecar, many improvements, 5-6 h.p. ....	£35 0
ROYAL ENFIELD, good condition, 2½ h.p. ....	£25 0

## BARGAINS IN ACCESSORIES.

**Horns  
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**Tyres  
Belting**

**Lamps  
Carburettors**

**Engines & Fittings.**

**Plugs, etc., etc.**

Shop soiled and second-hand.

Lists free on application.



### To Prevent Shorting.

Sir,—Your reader who asks for a waterproof glue will find the composition as below very effective to prevent wet from shorting the magneto at the carbon brushes.

Put two pennyworth of resin broken up into a basin (not a soldered tin) and a table spoonful of lubricating oil, place in a hot oven, and when all is melted together, stir up and test by dipping a piece of wood in and put a drop on a cold plate; if too brittle add oil, if too soft add resin, clean any grease off parts intended to be covered, and then start building up with the composition hot, and as it cools it can be built up to cover the whole.

F. W. APPLEBEE.

### The Freemasonry of the Road.

Sir,—I would remind the gentleman with a Rudge and sidecar (lady passenger) whom my friends and I (riding 1912 Douglas and a Humber and sidecar) found hung up a few miles from Southend on August Bank Holiday, to whom I lent a plug, that he has not as yet returned to me as promised. I trust he will be so good as to do his part, not for the value of the plug to me, but in appreciation of the time spent with him in tightening up his magneto near Rayleigh, also overhauling his carburetter at Romford. Maybe he has mislaid my address, which is Amstel House, East Sheen, Surrey.

F. C. PARRATT.

Sir,—On Sunday last I had the misfortune to run into a hedge at a very bad bend with my New Hudson and sidecar, buckling my front forks, but otherwise coming to no harm. I had just surveyed the damage when a motor cyclist and sidecar came along, and, stopping, helped me to get the machine to a neighbouring farm, after having satisfied himself he could not temporarily repair the forks. While thus occupied a big touring car came along, and the driver (owner) offered to take us to our destination, but as we were going in the opposite direction we did not trouble him.

Who says that freemasonry of the road is dying out? After this experience my services will always be at the service of any unfortunate motor carist or cyclist on the road.

BB 354.

### Variable Gears.

Sir,—When is the light, cheap speed gear to come along? Take a two-speed Eadie pedal cycle gear. It increases the weight of a wheel by about 1 lb., costs 14s., and as to its strength, a friend of mine, a racing cyclist, often averages 20 m.p.h. with this gear fitted, and has climbed Westerham and Cudham. Could not a stronger edition of this gear be made for motor cycles, to add about 2 lbs. to the weight of a wheel, and cost, say, 35s.? This price, I should think, would allow of a good profit being made, as there is practically the same amount of work in a gear, whether large or small. In the case of belt-driven machines, a belt rim would, of course, have to be fitted in place of a sprocket.

W. H. SIMON.

### A Strange Proceeding.

Sir,—Whilst motor cycling just outside Abergavenny I passed a carriage and pair. Thirty yards further my cap blew off, and on returning for the same the owner of the conveyance got out in a very excited way, took my number, and said it was a scandalous shame the way motorists were using the roads, at the same time saying I could either do what two other motorists did last week (pay 10s. towards the local hospital) or take the consequences. I then offered him 5s., which he took. The above gentleman is a J.P., but this occurred just on the borders of Monmouthshire; his county is Brecon. Was this a legal proceeding, and was it in his power to prosecute? I travelled carefully past the horses, but on the clear down grade I naturally increased speed later.

H. PERCIVAL.

### The French Reliability Trial.

Sir,—I have been surprised to read in *The Motor Cycle* the information that the motor cycle reliability trial organised by the Touring Motor Club de France and the Veloce Club de Tours—Paris Tours—to be held on September 29th, would not be run under the control of the Automobile Club de France.

I am pleased to inform you, and am directed to do it, that, on the contrary, this event will be run in accordance with the Automobile Club de France regulations, and that any British competitors have not to fear suspension from the Automobile Association and Auto Cycle Union.

Mr. Hugo Storr, the Touring Motor Club de France president, is to send you the race regulations, and in case any British riders would run the course, I beg to inform them, through your valuable paper, that they will find good assistance in Tours. Any information can be got from the undersigned.

G. GEO. BELLNOT,

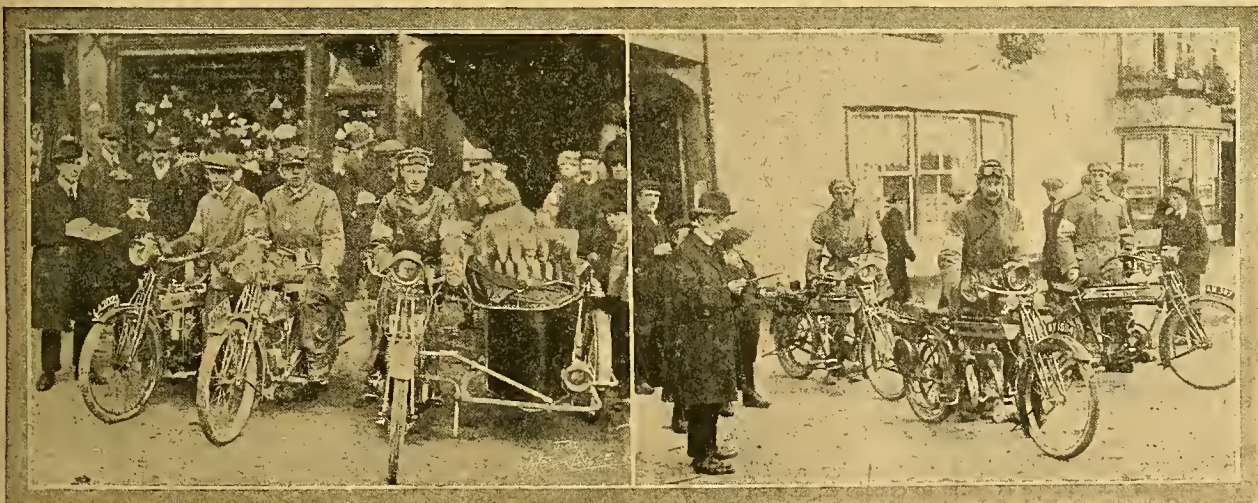
V.C.T. VICE-PRESIDENT, 14, Rue des Halles, Tours.

### Dangerous Cross Roads.

Sir,—Referring to "A.C.'s" letter of August 22nd, which appeared under the heading "Dangerous Cross Roads," I would mention a sad accident that occurred some three miles from Newmarket on the Norwich Road recently.

A young man employed in a motor cycle garage was out for a short ride. When approaching the main road to Norwich from Newmarket, he saw a motor car travelling at a high speed along the main road. The dust raised by this car obscured a second car which was following it, with the result that the motor cycle met the car broadside on. The cyclist's head met the bonnet of the car, and the car swept rider and cycle into a hedge; the car followed, knocking down a signpost. The cyclist was rendered unconscious till the time of his death some few hours afterwards. At the inquest the driver asserted that, owing to the dust raised by the first car, he could see nothing till the accident. I hope this will be a warning to anyone who is not cautious about crossing main roads.

L. E. S. VAILE.



ANNUAL 24 HOURS' RIDE, WOODFORD TO YORK AND BACK.

Competitors leaving York, the turning point in the Essex Motor Club's Woodford to York and back 24 hours' ride.



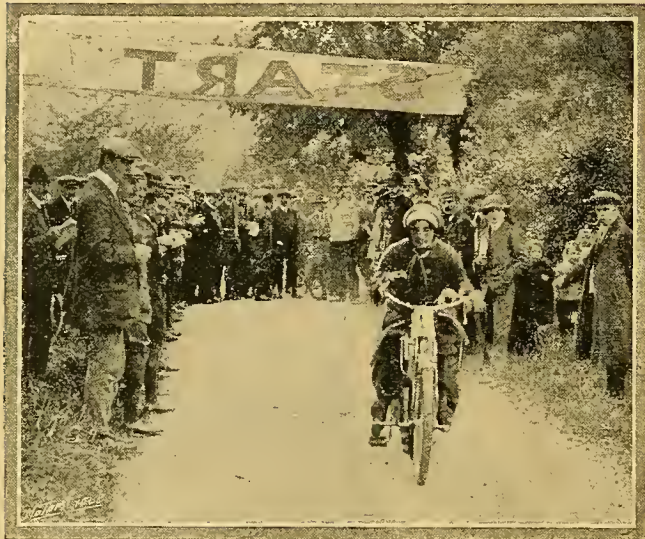


## COVENTRY CLUB'S OPEN HILL-CLIMB.

Another Record Entry Run off Promptly and Without Accident.

**A**LL ways led to Woodway Hill, Dodford, near Daventry, on Saturday, for such was the venue of the seventh annual open hill-climb of the Coventry and Warwickshire Motor Club. The early birds started at 7.30 a.m. in the shape of a detachment of the Rudge Cyclist Corps, who annually render the club invaluable assist-

quently, practising (prohibited) went on day after day. It is certain that less than twenty riders sampled Woodway before their timed ascents. The measured stretch was three furlongs, and the gradient averaged about 1 in 9. The surface was in excellent condition. There are no bends on the hill, and its only fault is its easy nature; but if ever there was a "safe" hill, certainly it is Woodway.



Miss May Walker (2½ h.p. Hobart) starting in Class I. for lightweights. She was the only lady competitor.

### At the Start.

By one o'clock there was a big crowd of spectators assembled. Chief Marshal V. Holroyd and Hon. Sec. G. Smith had ranged up the willing officials in the respective positions, the telephone announced a clear course, Mr. Alec Ross had a long line of competitors in readiness, but the timekeepers were missing! A few minutes' delay while Messrs. Ebbelwhite and Wakeford took up their positions, a start was made, and thereafter a stream of competitors at regular intervals combined to keep the spectators interested.

### Ladies First!

**CLASS I.**—Standard-pattern Touring Lightweights (with engines up to 350 c.c.). Twenty-two entries. First on formula, Dodford Cup; fastest time, gold medal.

Miss May Walker (Hobart) was first up. She, however, mistook a signal to start, and had another attempt. She made a good climb, but in finishing ran on to the grass at the roadside, probably the only narrow squeak of the day.

Three Douglas machines were particularly fast, likewise the 2½ h.p. Singer ridden by Stanley, whilst Wright's Humber impressed the onlookers. F. W. Barnes (2½ Zenith), though allowed to run, was ruled out by a decision of the committee to debar engines with two overhead valves from the touring classes. He was actually eleventh on time and third on formula.

ance by performing the weighing, erection of banners, and the 101 other jobs necessary to ensure smooth working of a big entry such as the Coventry Club are usually able to command. Fortunately, the weather was bright and fine.

Weighing commenced at 10 a.m., two pairs of scales and tripods being in position. After each machine had been weighed and the totals noted by the results calculators, Messrs. J. W. Roebuck, Wh. Ex., J. L. Milligan, B.Sc., and E. Caudwell, the scrutineers took possession of the machine for a few moments to check it over with the regulations. In Messrs. J. R. Haswell, I. B. Hart-Davies; and C. S. Burney, the club had three hard-working examiners, who carried out their important tasks excellently. All are keen riders with considerable racing experience, and consequently knew all the little fakements and dodges resorted to by the unscrupulous to obtain extra speed from "their standard touring mounts." There was considerable amusement when Haswell put a hand mirror underneath a silencer and discovered what he expected—a gaping hole! It is something to the credit of the competitors that such practices were few and far between. Passenger machines were weighed in Daventry, and after the operation all were ranged in systematic order in the orchard, specially hired for the occasion, at the hill summit. A field at the foot of the hill was used just before the contest began.

### The Selected Hill.

Woodway Hill, Dodford, is new so far as hill-climbing competitions go. There is little to choose in the way of hills in the Coventry neighbourhood, and consequently the wise-aces thought Newnham must be the secret hill. They were not discouraged in the belief by the officials, and conse-



A Corah-Jap rider half-way up the hill.





THE FINISHING POINT.

The results calculators, who worked out the results while the competition was in progress, will be noticed on the left. There were 196 entries, but every result was known by 6 p.m.

CLASS I.

Results on Time.

1.	{ F. Ball (2½ Douglas) ... .. }	38½s.
	{ G. E. Stanley (2½ Singer) ... .. }	
3.	{ W. W. Douglas (2½ Douglas) ... .. }	39s.
	{ S. L. Bailey (2½ Douglas) ... .. }	
5.	H. C. Newman (2½ Ivy) ... ..	39½s.
6.	F. S. Whitworth (2½ Douglas) ... ..	40½s.

Results on Formula.

		Fig. of merit.
1.	G. E. Stanley (2½ Singer) ... ..	158
2.	W. W. Douglas (2½ Douglas) ... ..	161
3.	R. Holloway (2½ Premier) ... ..	174
4.	H. C. Newman (2½ Ivy) ... ..	175
5.	F. G. Edmond (2 Humber) ... ..	176
6.	S. L. Bailey (2½ Douglas) ... ..	181

CLASS II.—Standard Touring Motor Cycles (variable or fixed gears, with engines from 350 c.c. to 500 c.c.). Twenty-six entries. First on formula, gold medal; fastest time, Woodway Cup.

The speeds accomplished in this event were appreciably faster than in the lightweight section, though most of the 3½ h.p.'s had single gears and were consequently slower in getting under weigh than the variably geared juniors. In this connection it should be mentioned that the standing start considerably affected the result. Often machines proved very sluggish in firing and were slow in picking up. The results below show the six fastest machines, though special mention should be made of Stanley, who sat his machine well and was obviously the speediest up the hill. The Singer man had a field day on Saturday. Vernon Taylor's ascent on a Rudge was certainly impressive, likewise C. T. Newsome's (Rover).

The "W.D." with forced lubrication was particularly silent, but there was no doubt about its speed and power. Newman—always a fancied man in hill-climbs—had to be content with second place, likewise Woodhouse, another Precision engine expert. L. A. Bees rode well on an L.M.C. and should do better after a little experience. K. H. Clark (Corah) could not get his engine to fire. Cork and Howard (Matchless) were debarred from this class on account of their overhead valved engines.

CLASS II.

Results on Time.

1.	G. E. Stanley (3½ Singer) ... ..	34½s.
2.	H. C. Newman (3½ Ivy-Precision) ... ..	36½s.
3.	C. T. Newsome (3½ Rover) ... ..	37s.
4.	J. W. Woodhouse (3½ Regal-Precision) ... ..	37½s.
5.	Vernon Taylor (3½ Rudge) ... ..	37½s.
6.	L. A. Bees (3½ L.M.C.) ... ..	37½s.

Results on Formula.

Fig. of merit.

1.	G. E. Stanley (3½ Singer) ... ..	185
2.	{ Vernon Taylor (3½ Rudge) ... .. }	191
	{ J. W. Woodhouse (3½ Regal-Precision) ... .. }	
4.	C. T. Newsome (3½ Rover) ... ..	199
5.	L. A. Bees (3½ L.M.C.) ... ..	200
6.	H. C. Newman (3½ Ivy) ... ..	211

The Stopping and Restarting Test.

CLASS III.—Standard Touring Variably-gear'd Machines (with engines up to 585 c.c.). The regulations were: "Competitors in this class must stop between the two lines in the middle of the hill, and, after bringing the road wheels to rest, restart without assistance and without leaving the saddle." First on formula, gold medal presented by the Britannia Foundry Co., Ltd.; fastest time, prize (presented by Messrs. Hobart Bird and Co., Ltd.).

Class III., for variably geared touring machines, proved a welcome change, and there was soon a crowd in the middle of the hill to witness the hurried stops and restarts. The test sounds simple enough, but as a matter of fact it is extremely difficult to stop in a few yards, declutch, keep the engine running, and restart on the low gear. Try it! F. Clarke (Rudge multi), the first up, performed as neatly as anyone, making good use of his powerful rear brake. V. Busby (Humber) overshot the second line before stopping. North (Ariel) was good, and more adept than his companion Newey; Barnes (Zenith) was as cool and sure as one would expect such an old hand would be; Woodgate (Singer) was rather slow; Walsgrove (Hazlewood) stopped his engine; Jameson (Enfield) wobbled badly and lost time; Dixon (Singer) was handicapped by a strange machine with brake and clutch pedals on the same side; Wright (Humber) stopped neatly and accelerated in wonderful fashion for so small an engine; Whitworth (Douglas) was also good. Barnes would have won on formula but for the rule referred to.

CLASS III.

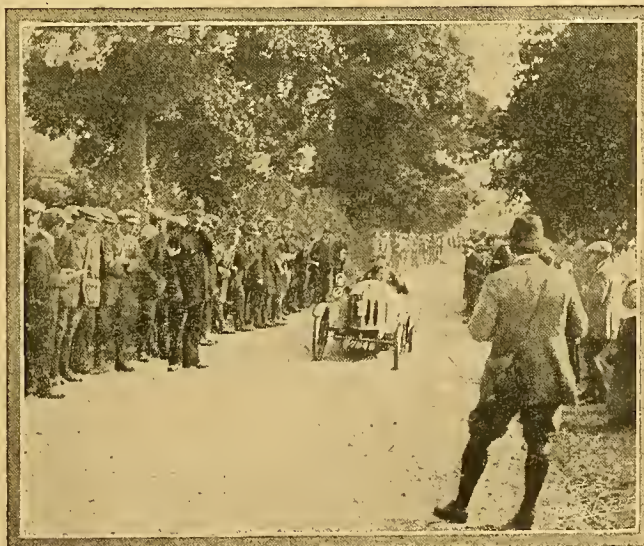
Results on Time.

1.	{ F. C. North (3½ Ariel) ... .. }	54½s.
	{ S. Wright (2½ Humber) ... .. }	
3.	F. Clarke (3½ Rudge) ... ..	56½s.
4.	F. S. Whitworth (2½ Douglas) ... ..	57½s.
5.	J. J. Woodgate (2½ Singer) ... ..	64s.

Results on Formula.

Fig. of merit.

1.	S. Wright (2½ Humber) ... ..	329
2.	F. S. Whitworth (2½ Douglas) ... ..	362
3.	F. Clarke (3½ Rudge) ... ..	399
4.	F. C. North (3½ Ariel) ... ..	404
5.	J. J. Woodgate (2½ Singer) ... ..	422



The Rollo cyclecar going well half way up the hill. This machine, the only four-wheeler, created much interest.





TWO ASPECTS OF THE WINNER OF THE VARIABLE GEAR CLASS TAKEN AT THE SAME INSTANT.

Sam Wright (2½ h.p. three-speed Humber) from above and below, in the stopping and starting test. It may be noticed that the photographers have snapped each other.

### A Twin wins the Formula Prize.

CLASS IV.—Tourist Trophy Machines (with engines up to 500 c.c.). First on formula, President's Cup; fastest time, gold medal; second on formula, prize; second fastest time, prize.

With forty-three competitors in the T.T. class some good ascents were witnessed, though it was difficult, if not impossible to distinguish the fastest of the leaders. Weatherilt made the best use of his Gradua gear in starting, and undoubtedly gained a second or two on Stanley in this way. Holloway (Premier) got off the mark smartly and flashed up the 1 in 8 section, likewise Wessendorff, a new comer, who caused some surprise. Edwards on a Triumph was the fastest private owner. It will be noticed from the formula results that at last a twin has a chance of success in this section, that is, if the performance is sufficiently meritorious, thanks to *The Motor Cycle* formula. It means quite a lot of added interest to hill-climbing contests.

#### CLASS IV.

##### Results on Time.

1. { P. Weatherilt (3½ Zenith) ...	...	...	34½s.
2. { G. E. Stanley (3½ Singer) ...	...	...	35s.
3. R. Holloway (3½ Premier) ...	...	...	36s.
4. H. J. Wessendorff (3½ Premier) ...	...	...	36½s.
5. R. H. Edwards (3½ Triumph) ...	...	...	36½s.
6. Four competitors tied ...	...	...	—

##### Results on Formula.

	Fig. of merit.
1. S. L. Bailey (2½ Douglas) ...	152
2. J. Cocker (2½ Singer) ...	161
3. F. W. Barnes (2½ Zenith) ...	166
4. R. Holloway (3½ Premier) ...	179
5. P. Weatherilt (3½ Zenith) ...	180
6. E. Kickham (2½ Douglas) ...	181

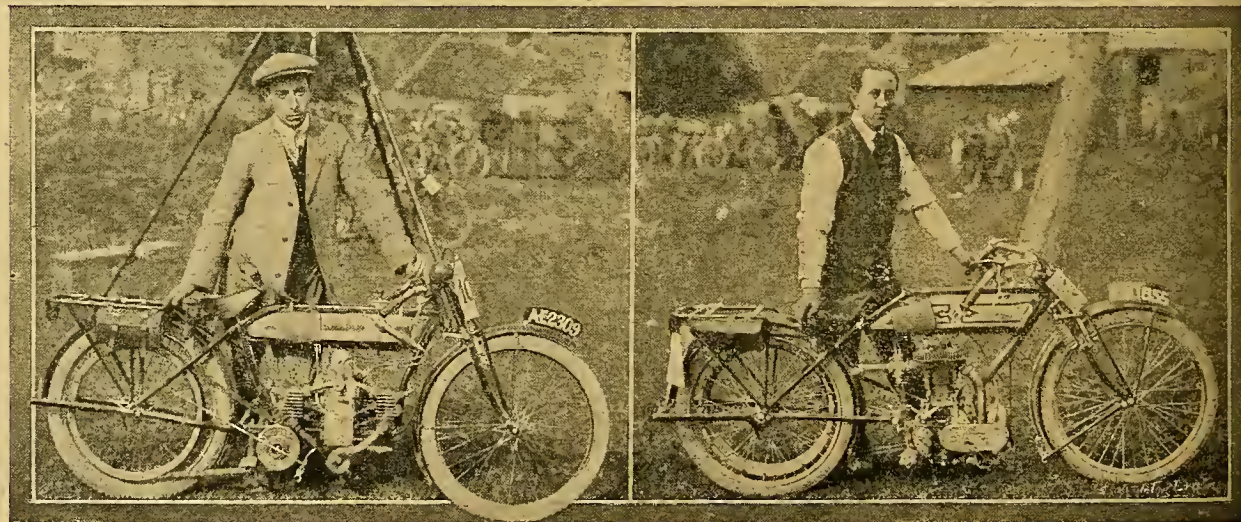
### Interest in the Passenger Machines.

CLASS V.—Touring-pattern Cyclecar and Sidecar Machines.

First on formula, Daventry Cup and souvenir for passenger; fastest time, gold medal and souvenir for passenger; second fastest time, prize and souvenir for passenger.

The passenger class with twenty-one entries was much appreciated. Most started by the clutch, some got under power by dint of laborious shoving; other ingenious competitors started their engines, and at the signal to start had arranged for their passengers to engage the low gear from the sidecar seat, the "driver" pushing his hardest. Newman and Woodhouse used single gears.

The 8 h.p. Williamsons made the best starts churning up the gravel on being given the starting order. Though Barnes made the fastest climb, at last the veteran has found his match. G. Griffiths (8 Zenith) pulled a fastener out on his first essay, but begged to be allowed to be timed.



SUCCESSFUL COMPETITORS IN THE COVENTRY &amp; WARWICKSHIRE, M.C. OPEN HILL-CLIMB.

F. Ball (2½ h.p. Douglas) fastest time in Class I.

F. C. North (3½ h.p. Ariel), fastest time in Class III.



**Coventry Club's Open Hill-climb.—**

The starter agreed, and he recorded the time of 38½s., actually 3½s. faster than Barnes. The latter used a twin Jap of 85×85.5 mm., but Griffith had a 90×77.5 mm.

**The Only Four-Wheeler.**

The Rollo, the only four-wheeler competing, took 54½s. By the way, this smart looking cyclecar with passenger and all complete weighed 896 lbs. The Crouch carette was the heaviest vehicle, totalling 1,232 lbs. all on.

In connection with the awards, it is worthy of record that the Coventry Club have introduced a new feature, that is souvenirs for passengers, the idea being that in sidecar climbs the passenger plays an important part.

**CLASS V.**

*Results on Time.*

1. F. W. Barnes (8 Zenith) ...	42½s.
2. H. M. Jameson (6 Enfield) ...	43½s.
3. H. C. Newman (3½ Ivy-Precision) ...	48½s.
4. W. W. Douglas (8 Williamson) ...	48½s.
5. { Clifford Wilson (8 Williamson) ...	50½s.
{ G. E. Stanley (3½ Singer) ...	

*Results on Formula.*

	Fig. of merit.
1. G. E. Stanley (3½ Singer) ...	208
2. H. C. Newman (3½ Ivy-Precision) ...	215
3. H. M. Jameson (6 Enfield) ...	217
4. J. W. Woodhouse (3½ Regal) ...	256
5. F. W. Barnes (8 Zenith) ...	262
6. F. C. North (3½ Ariel) ...	287

**The Open Class with Forty-seven Riders.**

**CLASS VI.**—Open (motor bicycles of all descriptions). No restrictions except as to brakes. First on formula, The Godiva Cup; second on formula, prize; fastest time, cup presented by Mr. John V. Pugh, J.P.; second fastest time, gold medal.

Class VI., the best supported event, was a mixture of all kinds of machines, some out for formula awards, others for fastest time. Chief among the latter were six machines with monstrous twin J.A.P. engines, a 7 h.p. Indian, a 7 h.p. Blumfield and two 8 h.p. Williamsons. The class was soon run off, as the rule confining a competitor to one ascent, irrespective of the number of classes entered (excepting III. and V.) weeded out a goodly number.

We noticed that several of the big machines were ten seconds or so before they could be persuaded to fire, but when once on the move they fairly flew, delighting the crowd at the top. Barnes was expected to win on the 8 h.p. Zenith, but Harry Reed, on a single geared chain-driven Dot-Jap

with overhead valves, proved more than a match, his speed being terrific. He averaged 45 m.p.h. from a standing start, which means well over 60 m.p.h. towards the summit. It was a marvellous climb. Barnes was next, hotly pressed by Cookson, a private owner of a Matchless. Griffith was slow at the start, also Cuffe (Indian). The twin Blumfield travelled very fast, also Hands on a stripped Williamson. Stanley and Holloway were the only single-cylinder riders seriously to challenge the twin-cylinder exponents for the honour of fastest time of the day. Weatherilt, on the 2½ h.p. Zenith, scored another striking success on formula, with Cocker (Singer) and Bailey (Douglas) in close attendance.

**CLASS VI.**

*Results on Time.*

1. Harry Reed (8 Dot-Jap) ...	30s.
2. F. W. Barnes (8 Zenith) ...	31½s.
3. J. J. Cookson (8 Matchless) ...	32½s.
4. G. Griffith (8 Zenith) ...	33s.
5. T. F. Blumfield (7 Blumfield) ...	33½s.
6. { G. E. Stanley (3½ Singer) ...	34½s.
{ H. W. Hands (8 Williamson) ...	

*Results on Formula.*

	Fig. of merit.
1. P. Weatherilt (2½ Zenith) ...	146
2. J. Cocker (2½ Singer) ...	154
3. S. L. Bailey (2½ Douglas) ...	156
4. F. G. Edmond (2 Humber) ...	175
5. J. W. Woodhouse (3½ Regal-Precision) ...	178
6. R. Holloway (3½ Premier) ...	186

**CLASS VII.**—Members' Class (sealed handicap). First prize, Committee Cup; second, club prize. In this event Mr. Edward Lycett's prize was offered for the best performance by a member who had never won a prize in a hill-climb.

The members' class only necessitated four ascents, the remainder of the nineteen competitors having recorded their times in the previous events.

**CLASS VII.**

	Actual time.
1. Reg. Holloway (3½ Premier) ...	35s.
2. H. Green (3½ Triumph) ...	36½s.
3. S. L. Bailey (2½ Douglas) ...	38s.
4. F. S. Whitworth (2½ Douglas) ...	40½s.
5. J. Dudley (2½ Hobart) ...	42s.
6. W. Williamson (2½ Douglas) ...	44½s.

The seven events took 2h. 25m. to run off, so there was no flagging of interest throughout, and the contest was not long enough to become boring.



**SUCCESSFUL RIDERS AT THE COVENTRY HILL-CLIMB AT DODFORD LAST SATURDAY.**

G. E. Stanley (2½ h.p. Singer). Stanley was the most successful rider.

Harry Reed (8 h.p. Dot-Jap), who made fastest time of the day averaging 45 m.p.h.



## Coventry Club's Open Hill-climb.—

The results of two classes were announced almost immediately at the Wheatsheaf Hotel, Daventry, and every class winner was posted by 6 p.m., so that competitors and spectators were mostly home before dark, having seen the biggest hill-climb ever arranged, and, what is more significant still, being in possession of the results.

Six teams competed for the special team prize, viz., Douglas, Williamson, Zenith, Rudge, Corab, and Colmore Depot teams. The result was:

1, Douglas Team, W. W. Douglas (2½ h.p. Douglas), F.

Ball (2¾ h.p. Douglas), and E. Kickham (2¾ h.p. Douglas). Aggregate figure of merit, 554.

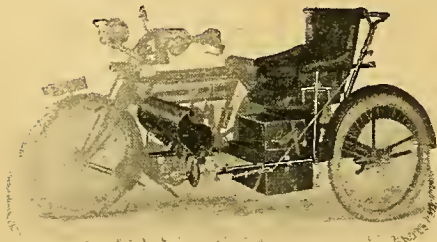
2, Zenith Team, F. W. Barnes (2½ h.p. Zenith), P. Weatherill (3½ h.p. Zenith), and E. B. Ware (3½ h.p. Zenith). Aggregate figure of merit, 543.

3, Colmore Depot Team, R. Holloway (2½ h.p. Premier), S. L. Bailey (2¾ h.p. Douglas), and H. Cork (3½ h.p. Matchless). Aggregate figure of merit, 544.

The foregoing results are official, and were confirmed by the committee of the Coventry and Warwickshire Motor Club on Monday evening last.

## HOLT'S CANTILEVER SIDECAR.

A Novel Sidecar with Adjustable Hammock Seat capable of being Folded.



(1) Adjusted to suit a short passenger.



(2) Complete sidecar folded when not in use. In this position it can be used as a carrier.



(3) Normal adjustment and child's seat

IN another part of this issue we refer to the failings of many sidecar bodies and the lack of room for odds and ends. On this page we illustrate an entirely new sidecar, the body of which is especially original. This sidecar is the result of two years' experiment on the part of Mr. H. Holt, 68a, Regent Street, Leamington. The illustrations are for the most part self-explanatory, so that a short description will suffice. The seat posts are adjustable along the chassis to give extra leg room, as well as for height. In these posts there are strong springs, in addition to which the seat is supported on other springs which can be clearly seen. The angle of the back (also, of course, adjustable for height) is varied by means of adjustable cables, which consist of steel wires tested to a breaking strain of 2,500 lbs., and covered with celluloid to preserve them from rust. These run over small pulley wheels fixed at each end. The arm rest tubes are telescoped into the seat posts to allow for adjustment, and each is provided with a small pocket which is useful for carrying small

articles, such as gloves, handkerchiefs, etc. The footboard is pivoted in front and swings through a steel plate fastened at the rear, and depends on springs recessed over the downward clip rods.

## Security for the Flexible Back.

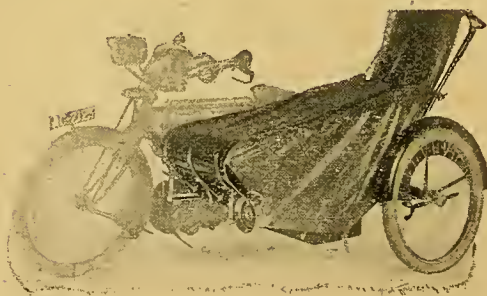
The method of fixing the flexible back rest is by means of an iron cross tube drilled with a hole at each end to receive a solid rod, which is first passed through a hem of the material and has right-angled bends at each end; these ends are passed through the holes just mentioned in the cross bar, and the material passed once or twice round holds the whole firmly together. This, of course, is wound up as the height of the back is reduced.

The chassis is constructed throughout with right-angled lugs and 14 gauge tubing, except in the case of the cranked axle, which is designed to bring the wheel of the sidecar and bicycle into proper alignment and the bent front attachment, both of these being 13 gauge to give extra strength. The attachments,

light, strong, and neat, are of the taper type, the sidecar members being each held firmly in place by one nut and spring washer.

A tool box, large enough to contain a spare cover, tube, belt, and tools, or a two-gallon tin of petrol, is in the base of the chassis, held by means of a steel band fastened with two clips at the sides, and a clip behind in the centre of the frame. On the lid of the box a child's seat, set on springs, can be carried, or a spare can of petrol may be strapped.

The mudguard has large wings on the side next the body, which effectually screen the passenger from dirt; a stand and lamp bracket are provided; the end of the front attachment is provided with a security bolt which prevents the sidecar from slipping off if the connections should become loose by any chance. This sidecar is said to be exceptionally light; as we have not had an opportunity of riding in it, however, we are unable to give any account of its running, but it seems to possess, with its universal adjustments, great possibilities of comfort.



(4) Sloping backrest. Apron to cover passenger



(5) Sidecar from the rear. Note the spring head



(6) A family party



# MERSEY M.C. OPEN TRIAL.

**T**HIS open reliability trial was lucky in being run off on Saturday, one of the few really nice days we had in August. At eight o'clock the first of the sixty competitors were started, in pairs, at minute intervals, from Birkenhead, the first pair being the hon. sec., S. W. Carty, and V. E. Horsman, who, like the pairs that followed, had to observe each other and report any stops, any stoppage except for traffic being penalised. About forty solo machines started and sixteen sidecars, one runabout, and a car.

## A Sidecar Frame Breaks.

All went well except for a few punctures till Tarporley, where a sidecar attached to a Clyno was seen with both the rear attachment tubes snapped. Luckily, they were on a good road, and neither were hurt. G. W. Windsor (the driver) was heard to enquire if he could hire a sidecar in Tarporley. He seems to have succeeded, as he came along on Castleton Hill with another attached. There was a stop at

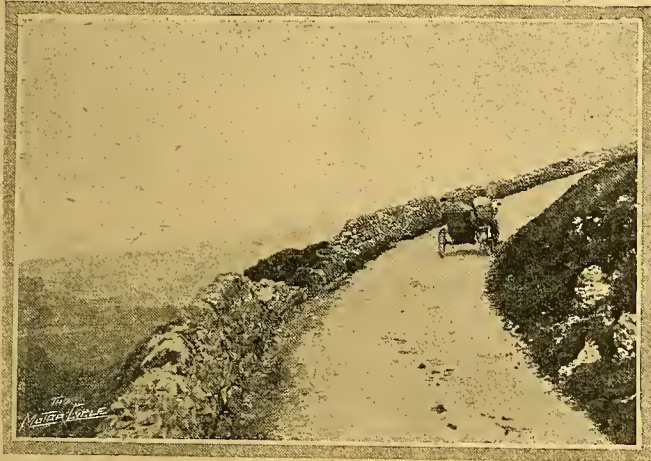
Stone for petrol, then on through Cheadle, and up the noted Oakamoor Hill. This caused a few failures, and further on at five cross roads nearly half the competitors took the wrong road to Ashbourne. Only one direction arrow was to be seen throughout the course. The A.A. scouts and R.A.C. guides rendered good assistance, but chiefly in towns, etc. After the fifty minutes' lunch stop at Ashbourne the riders made for Matlock Bridge, and tackled the noted bank where the cable cars go. Crowds were here to see the fun and cheer the successful ones. About half the number got up. It was a grand competition between variable gears with small engines and large engines with single gears, and the victory was very decidedly with the gears. The Rudge Multi and Zenith-Gradua shone conspicuously. It is strange that nearly eight years ago the first man to get up the bank (J. Edge on a Bat) used a twin pulley and two belts. This time a Matchless 8 h.p. twin had the same on but failed, owing to the sidecar tyre puncturing. The Morgan roared up at a great pace, and turned the bend at the top so fast that the back wheel bent over to about sixty degrees, which must have put a fearful strain on the frame. Later on, after Castleton Hill, in taking a corner too fast it ran up the bank and overturned.

## A Real Hill.

After leaving Matlock the route lay through Bakewell and Hope to Castleton. Here the competitors had to face the worst hill on the run. It proved to be a real terror. Long, loose, and winding, with grooves across every few yards where the rivulets had made tracks, into which the wheels dropped, making it difficult to remain in the saddle. Some riders tried time after time, others got up in two or three instalments. J. M. G. Lamb had to let his wife walk up and come up solo, others ran part of the way. A couple of hundred yards of new loose stones at the top, thinly laid all over the road, was, to some, the last straw.

The run down to Chapel-en-le-Frith was fair till we reached Bollington, where the main road is in a disgraceful state. At Knutsford there was a twenty minutes' stop for tea at the Angel Hotel. Another twenty-six miles through Warrington brought us to the finishing point at Broad Green after 186 miles on all varieties and conditions of roads and hills.

[The results of the trial appear on page 1018.—Ed.]



G. W. Windsor (5-6 h.p. Clyno sidecar) on the top bend of Castleton Hill, Derbyshire.

# NEW CROUCH ENGINE.

**T**HE C.M.C. carettes are now being fitted with a new and improved engine of the company's own manufacture, the bore and stroke of which have been increased to 80 mm. by 90 mm. The cylinders are set at an angle of 60°, and have cast with them valve boxes which are covered by a quickly detachable aluminium plate, thus enclosing the valve mechanism entirely.

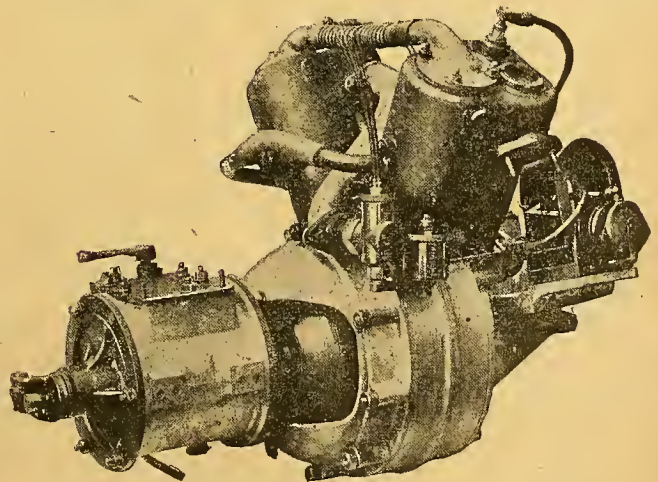
As before, an extension piece bolts on to the side of the engine, and serves to enclose the clutch and support the gear box. On the timing gear side of the engine lies a small bevel box containing a pair of gears which drive a shaft at right angles to the crankshaft. This shaft serves to drive the magneto and water pump, which are carried on a special bracket fixed to the crank case. The engine and gear box unit weigh 163 lbs.

The engine made its first public appearance at the Coventry and Warwickshire hill-climb, where it unfortunately failed to do itself justice owing to gross over-lubrication due to the oil tap having been left on. Shortly after the climb, however, having cleared itself of oil, we

were invited by Mr. W. Crouch to try its paces. The engine is possessed of great energy and is extremely flexible. It is almost possible to walk beside the vehicle with the engine firing regularly on top gear, and by sweeping open the throttle the machine will gather speed at a rapid rate to over 40 m.p.h. On hills the legal speed may be maintained.

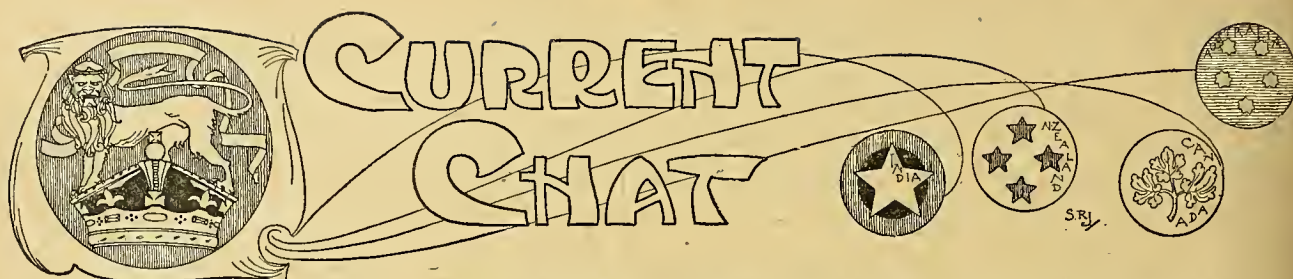


A cylinder of the new Crouch engine showing the enclosed valves.



The new Crouch engine and gear box unit which scales 163 lbs.



**TIME TO LIGHT LAMPS.**

Sept. 5th	...	7.37 p.m.
" 7th	...	7.33 "
" 9th	...	7.28 "
" 11th	...	7.24 "

**Successes Celebrated.**

A dinner was arranged at Mablethorpe last Saturday in honour of the Nottingham and District M.C.C. winners, Mr. G. Brough (London-Edinburgh Cup), and the team which won *The Motor Cycle Cup* in the M.C.C. Team Trial. Dr. Fredale presided, with Mr. F. W. Dance in the vice-chair, fifty-five being present.

**A 2½ h.p. Sidecar Machine.**

The smallest machine in the passenger class of the Coventry and Warwickshire M.C. hill-climb was the 2½ h.p. three-speed Hazlewood driven by Alec Walsgrove, who was obviously after the formula prize. His total weight was 504 lbs., and the fact that he succeeded in climbing Woodway Hill is a striking instance of what a good engine in combination with a three-speed gear can perform.

**Mersey M.C.C. Open Trial.**

The list of awards in the above trial, described on page 1017, is as follows:

**GOLD MEDAL WINNERS.**

- V. E. Horsman (3½ Singer). Special prize.  
S. W. Carty (3½ Ariel)  
A. J. Mason (3½ Rudge)  
W. Davies (2½ Victoria-Jap)  
T. Heaton (3½ Bradbury)  
E. F. Jenkins (3½ Macbeth)  
G. Hunt (3½ Campion)  
C. L. Scott (3½ Rudge)

The above made non-stop runs.

Marks lost.

- H. G. Dixon (3½ New Hudson) ... 5  
Special prize in sidecar class.  
F. C. Jones (3½ Zenith) ... 5  
A. J. Brewin (8 Zenith) ... 40  
J. Cooke (3½ Triumph) ... 44  
W. H. Longton (3½ Ivy-Precision) ... 50  
J. McG. Lamb (6 Clyno sc.) ... 50  
P. Webster (3½ Rudge) ... 50

**SILVER MEDAL WINNERS.**

- P. Proud (3½ Rudge) ... Non-stop.  
Marks lost.  
H. C. Marston (8 Dot) ... 20  
E. W. Davis (3½ Singer) ... 50  
G. Bennion (3½ Bradbury) ... 50

The above were late at the finish.

- C. P. Jarvis (8 Zenith sc.) ... 53  
H. W. Coopland (7 Williamson sc.) ... 65  
L. Mogridge (3½ Mead-Precision) ... 70  
N. H. Brown (7 Indian sc.) ... 70  
J. D. Nixon (3½ Rudge) ... 70  
A. J. Jenkins (2½ Douglas) ... 70  
A. Cadwallader (2½ Enfield) ... 80  
F. H. Whiteley (2½ Douglas) ... 100

The special lightweight prize-winner is not yet settled.

**Attempt on the End-to-end Sidecar Record.**

We referred last week to a projected attempt on the End-to-end sidecar record by Mr. Elison Hawks, of Leeds. His mount was a Rudge multi fitted with Bates tyres. Weather and insufficient knowledge of the route combined to delay him, and the attempt was given up as hopeless at Preston. The sidecar was fitted with a special racing body.

**Le Grand Prix de France et la Coupe Internationale de Motocyclettes.**

The entries for the above event, to be held next week-end, are more representative than usual, and there should be a fine struggle between the leading French makes and the English machines which are entered. England is represented by Triumph, Rudge, Douglas, Williamson, and New Hudson, and probably Indian and Matchless machines, while against them are ranged such machines as the Griffon, Peugeot, Terrot, Alcyon, Wanderer, and Bedelia, and probably René Gillet. The trial is being conducted by the A.C. de la Sarthe et de l'Onest. On Sunday a course of eighteen kilometres *via* Le Mans-Mulsanne-Ruaudin-Le Mans will have to be covered twenty-two times, making a total of 396 kilometres, and on Monday a different circuit will be followed, bringing the total to 648.

**SPECIAL FEATURES.**

**NEW PASSENGER MACHINES.  
WEEK-END COMPETITIONS.  
OLYMPIA SHOW PLAN.**

**Open Hill-climb at Amulree.**

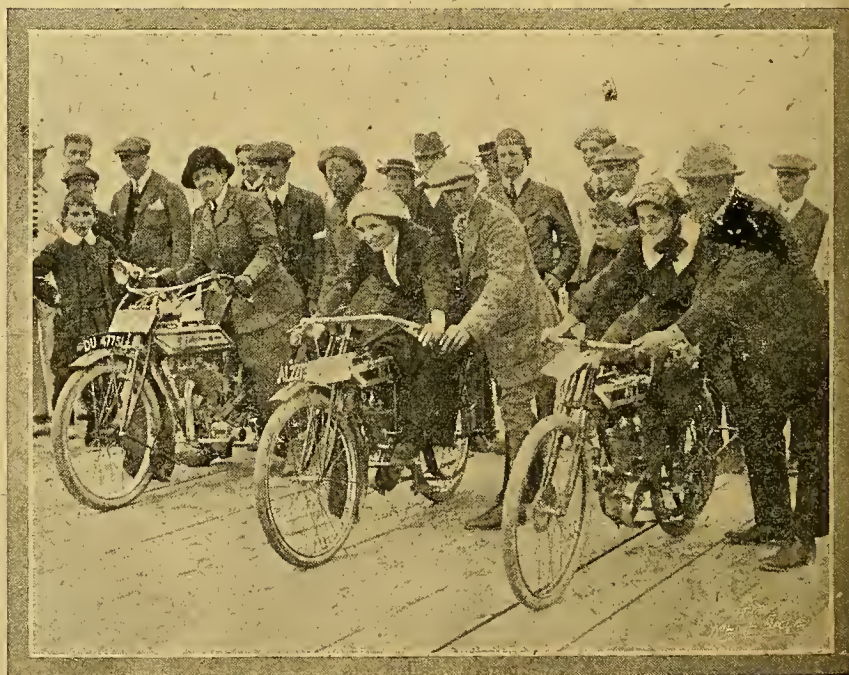
The Edinburgh and District M.C. will hold an open hill-climb on Amulree Hill, Glenquach, on Monday, the 16th inst., at 1 p.m. There will be eight classes.

**An Unfortunate Collision.**

We are happy to be able to record that G. L. Fletcher, whose accident was reported in our account of the Essex M.C. York and back run, is doing satisfactorily and hopes to be able to return to town this week.

**What a Big Entry Means.**

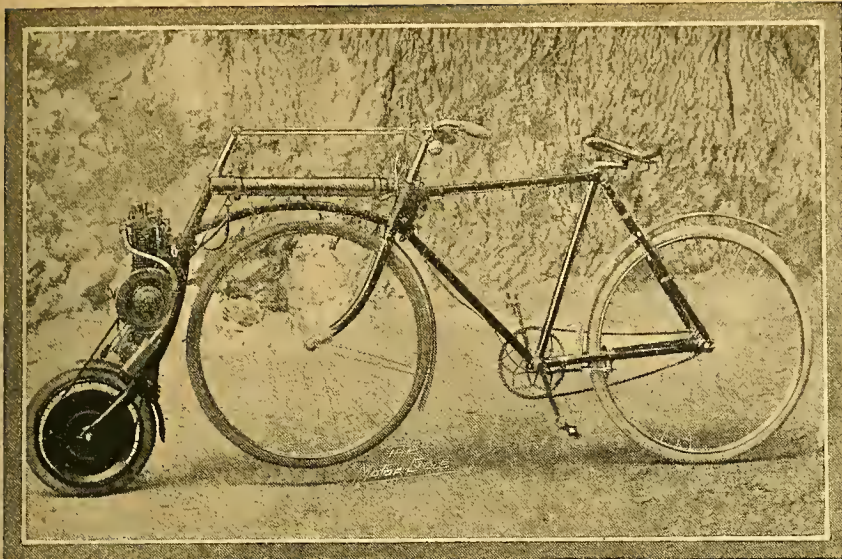
A certain amount of grumbling was heard at the Coventry and Warwickshire M.C. hill-climb on Saturday last, because competitors were allowed only one ascent of the hill on each machine entered, the time counting throughout. It must, however, be remembered that if all had been allowed to ride in each class the event would have taken at least six hours to run off, and would have continued until dark.



**NOTTINGHAM AND DISTRICT M.C.C. SPEED TRIALS ON MABLETHORPE SANDS.**

The start of the ladies' race. Left to right the riders are Mrs. K. Simpson (Rudge)—the winner—Miss Kettle (Premier), and Miss Shipside (Premier) who is but 16 years of age.





A FRENCH AUTOWHEEL, THE TRACTEUR AMOVIBLE.

A French device for attachment to a push bicycle. It has a Clement 1½ h.p. engine, automatic carburettor, Bosch Magneto, and belt, two small tanks for oil and petrol, steel-studded Michelin non-skid tyre on a wheel 14 in. in diameter. The inventor claims a speed of 20 m.p.h.

#### English-Dutch Trial.

The five Dutch private owners who tied for the P. and M. Cup in the above trial will compete again for the trophy on the 22nd inst.

#### Brooklands T.T. Race.

The postponed 150 miles race of the B.M.C.R.C. will be held on Saturday, September 14th, and will be the only event on the programme for that date. A further limited number of entries can be received up till Saturday next, the 7th inst.

#### Ten Pounds Reward.

£10 reward will be paid by the Auto Cycle Union for information which will lead to the apprehension and conviction of the person or persons who maliciously put sand in the oil tank of Mr. G. L. Fletcher's 2½ h.p. Douglas motor cycle whilst he was competing in the Six Days' Trial.

#### Stolen Machine.

On August 31st, at about 11.30 p.m., a 6 h.p. Zenith and sidecar, 1911 late model, W2337 frame, No. 1086 Mills-Fulford Herald chassis, cane unbleached body, with two new Hutchinson tyres 26in. x 2½in. heavy passenger type on machine, Continental tyre on sidecar, was stolen from Messrs. Tarr and Fox, 7-11, Cemetery Road, Sheffield.

#### Sidecar Track Record again Lowered.

On the 30th ult., Stanhope Spencer attempted a four hours' record with a 3½ h.p. Rudge fitted with a Bramble sidecar on Brooklands track. At the end of the third hour, however, he abandoned his intentions, owing to valve troubles. His failure with regard to the above test did not, however, prevent him, in the meantime, putting up a fresh record for speed during his three consecutive hours' run, the distances covered being as follows: First hour,

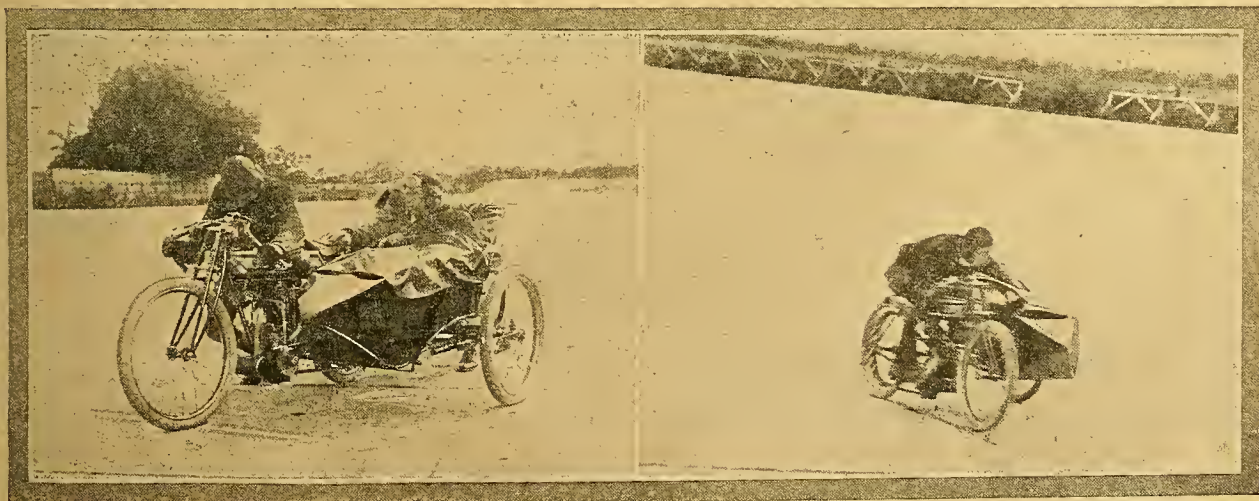
46 miles 587 yards; second hour, 86 miles 115 yards; third hour, 126 miles 900 yards, 100 miles being covered in 2h. 16m. 10½s. The previous record for two hours' consecutive running was also put up by this rider in July last, when 80 miles 1,250 yards were covered, 43 miles 35 yards in the first hour and 37 miles 1,215 yards during the second. Previous to Stanhope Spencer's performance last week, there had been no three hours' record.

#### A French Reliability Trial.

The attention of English motor cyclists who are anxious to take part in a competition in France is drawn to the motor cycle reliability trial organised by the T.M.C.F. It will take place on September 29th. The distance is 245 kilometres (about 152½ miles). The course is particularly easy, from Paris to Dourdan (the scene of the International Cup Race in 1905), then to Orleans, and along the valley of the Loire to Tours. The machines will be classified in the usual manner, and on arriving at Tours the competitors will have to cover two laps of the track at the Vélodrome de Tours. Entries should be addressed to Mr. M. R. Desitter, treasurer, 48, Rue du Moscon, Paris. Entries close on Wednesday, September 25th, at 8 p.m.

#### Through the Floods on the Great North Road.

W. Pratt set out on his P. and M. from London to Cleckheaton on Tuesday, the 27th ultimo, but, although he started at 10 a.m., he did not reach Doncaster till 8 p.m., having traversed upwards of 200 miles, the direct distance being 164 miles. He was first warned by an A.A. scout that the road at Alconbury was impassable, the water being up to the windows of the houses. He rode through several watersplashes and shallow floods, but on more than one occasion had to get his machine taken across in a cart; once he had to return on his track as there was no cart to be had. All through he experienced no misfiring, which speaks well for the modern motor cycle and the P. and M., with its well-placed magneto and chain drive, in particular.



MORE RUDGE SIDECAR TRACK RECORDS.

The start of Stanhope Spencer's record ride on a 3½ Rudge sidecar.

Finishing the first hour, in which time he covered 46 miles 587 yards.



# Snaresbrook to York and Back 24 Hours' Ride.

## THE ESSEX MOTOR CLUB'S ANNUAL EVENT.

**S**EVENTEEN riders of motor bicycles, fifteen drivers of sidecar combinations, and two drivers of cyclecars started from the Eagle Hotel, Snaresbrook, on Friday last, at 7 p.m. In the motor cycle class there were only two non-starters. The competition was a closed one, the total distance being 403 miles.

The principal award is the challenge cup presented by the

The words on the route card, "Petrol, coffee, etc., here," denoted a welcome fifteen minutes' stop for replenishments to man and machine. Between Fenstanton and Norman Cross the men entered a section where a secret check might be encountered. At Huntingdon was a known check in charge of Dr. Moss-Blundell. The secret check came soon after, situated at the top of Alconbury Hill. The competitors now entered the flood district, and the remains of the recent inundations were only too clearly evident, especially at Wansford. During the night section the lamps as a whole burnt well, and few cases of lamp trouble were seen. A good supper well served was enjoyed at Grantham, in which town part of the road was up, and a short detour had to be made. During the hour's stop for breakfast at the Windmill Hotel, York, Brassington's (Rex sidette) sidecar tyre blew off the rim with a loud report, much to the amusement of everyone save the owner. The homeward journey was made in excellent weather.

### An Unexpected Meeting.

At Ferrybridge we met Sawyer, Haslam, Dover, and other members of the Sheffield Club, who were taking part in a 160 mile trial, which included Sutton Bank. In Doncaster da Silveria (Indian) fell on the tramlines, and at the finish was numbered among the missing. He had had an accident to his machine before the start, and the fall in Doncaster did further damage, and threw his wheels badly out of track. In Retford especial care had to be exercised in the ten-mile limit, as the police were extremely active. Two retirements have to be reported near Grantham. At Sowerby poor Fletcher, whose little machine had been pulling its unfair load so well that it went three-parts of the way up Wentbridge hill on top speed, collided with a cart which had pulled right across the road in front of him. He was rendered unconscious, and was taken to the Grantham Hospital. Pearson, his passenger, was slightly injured. Howard (Jap) stripped his magneto pinion and was forced to withdraw. In Stamford, Kerr (N.S.U.) ran into a boy and bent his front forks so badly that the tyre was rubbing against the sides, so he applied oil to minimise the friction, and reached home safely. Some consternation was caused near Huntingdon by Dr. Moss-Blundell having moved the check outside the town; at its previous situation, though satisfactory at night, it was impossible by day owing to the congested condition of the streets. The Oryx succeeded in reaching Cambridge, and here E. J. Bass was in charge of the check.

The organisation throughout was excellent. Arrows were placed at all doubtful turnings, A.A. and M.U. scouts lent their aid by night and boy scouts by day. The journey from



A group of competitors outside the control at Grantham.

Triumph Cycle Company for the driver of a motor bicycle or passenger machine who adhered closest to schedule time on the double journey. Gold medals are awarded to those finishing within twenty-four hours with a total error of 10m. or less, silver medals to those finishing in the same period but with a total error not exceeding 25m., and bronze medals to those finishing within 25h.

Having due regard to the recent weather conditions the competitors turned up at Snaresbrook on Friday night prepared for the worst, but evidently Mr. Fuller, who managed the run so well, successfully squared the clerk who is said to control the elements, as the night, though cool, was fine, the moon dispelled the darkness, and a glorious day followed the dawn for the rest of the journey.

### 2½ h.p. Sidecar Outfits.

In the sidecar class the two machines which attracted the greatest attention were Fletcher's 2½ Douglas and Holroyd's 2½ Motosacoche, to which their drivers had had the audacity to attach sidecars. Holroyd had bad luck before the start with a seized big end, but he set matters right, and though he could not compete he rode to Grantham and returned with the rest of the party. Fletcher's Douglas behaved extremely well, and more will be written of his doings later on in this report. R. Lord had Miss Hind as his passenger in his Rex sidette. Once past Woodford the road surface was splendid, and there was no dust; however, greasy patches were met here and there, and near Sanbrieworth some unrolled stones, not marked by any warning light, caused several to dismount. The first check was at Hockerill, and here, as usual, several men had to wait before signing on as they were ahead of time. At this point excessive tyre trouble dogged Mr. Goodchild's Oryx car carrying Mr. E. J. Bass, who was in charge of some of the secret checks. This disaster put a further burden on the shoulders of the indefatigable secretary, Mr. Fuller, and resulted in several of the checks being cut out, as the car could not complete the whole of the run. Near Cambridge some more unrolled stones were encountered, causing Lilley (3½ Singer) to fall. In the University Town a goodly crowd welcomed the arrival of the competitors, who checked in at the Castle Hotel.



The ubiquitous A.A. scout saluting E. Frasseti (7 Indian sidecar) at Barnby Moor Corner



**The Essex Motor Club's Annual Event.—**

Cambridge was devoid of incident. Weather and roads were alike perfect, and the men rode wonderfully close to time, errors of only three minutes being reported in several cases. Those who finished the journey in time were the following: Motor Cycle Class.—A. E. Uffelman (6 Rex-Jap), H. J. Beal (3 N.S.U.), J. H. Kerr (3½ N.S.U.), A. H. Gold (3½ Ariel), P. D. Walker (3½ Rudge), A. V. Deacock (6 N.L.G.), L. G. Brown (3½ Triumph), F. Roberts (3½ Rudge), H. Karslake (3½ Rover), A. A. Lilley (3½ Singer), G. T. Gray (3½ Rudge), N. C. Dear (2½ Douglas), W. E. Rootes (3½ Singer), J. A. Campbell (3½ Rudge), and W. Cooper (3½ Bradbury). Sidecars.—W. C. Hemy (3½ Service), C. F. Michell (6 Bat-Jap), W. H. Wells, E. Frasetti, and B. A. Hill (7 Indians). The latter started a cleaning competition on the way back, and arrived looking the perfection of neatness. G. E. Revill (6 Zenith), A. J. Sproston (3½ Rover), A. E. Brassington (6 Rex sidette), A. T. Stanton (3½ Bradbury), V. Garland (5-6 Clyno), W. K. Smith (7 Indian), R. Lord (6 Rex-sidette), D. S. Kapadia (8 Rex-Jap), and A. R. Abbott (3½ Bradbury). Cyclecars.—C. H. Corfield (6 C. and H.), D. A. Parsons (8 G.W.K.) Of the absentees, Mundy (4½ Quadrant sc.) was last heard of at a point near Grantham; Byott (6 Salway sc.) arrived one hour late at York, the cause of his delay being lamp trouble. Bonflier (Bradbury sc.) was missing.



Start for the open scratch race for engines up to 350 c.c. at the Mablethorpe speed trials. F. P. Johnson (2½ h.p. Humber) proved victor.

**SPEED TRIALS AT MABLETHORPE.**

A largely attended and successful series of speed trials were held by the Nottingham Motor Cycle Club on the sands at Mablethorpe on Saturday, and as the day was fine and warm most of the visitors at the popular seaside resort turned out to see the competitions. Special interest was shown in the ladies' race, in which one competitor (Miss Shipside) was only 16 years of age. Two of the lady competitors rode men's machines. Some difficulty was experienced with sidecars in soft parts of the sand.

An unfortunate accident, in which a little girl was injured, occurred during a practice run. The girl, who was playing behind some boats on the beach, was badly cut on the head and thigh. The results were as follows:

Club Handicap (distance, one mile).—1, F. B. Halford

(2½ Martin-Jap); 2, J. R. Sylvester (2½ New Hudson). Ladies' Race.—1, Mrs. Simpson (3½ Rudge); 2, Miss Shipside (2½ Premier).

Open Scratch (under 350 c.c.)—1, F. P. Johnson (2½ Humber); 2, J. Sylvester (2½ New Hudson). 100 yards between first and second.

Open Scratch (under 500 c.c.)—G. S. Hall (3½ Scale-Jap). Open Handicap (all comers).—1, G. S. Hall (3½ Scale-Jap); 2, J. D. Mitchell (3½ Rover). 150 yards between first and second.

Open Scratch (unlimited).—1, R. W. Fornington (7 Indian); 2, W. Grocock (6 Zenith). 75 yards between first and second.

Cyclecar and Sidecar.—G. Brough (7 Brough sidecar).



Start of the sidecar race, which was won by G. Brough (on left) on a 6 h.p. Brough sidecar. The cyclecar is a Baby X.

**COMPETITIONS IN IRELAND.**

An open sidecar trial was held by the Dublin and District Motor Cycle Club on the 31st ult. The start was from Terenure. The conditions were of the customary character, and there were two open controls at Woodenbridge and the finish, and five secret controls en route.

The course lay down the western side of the counties Dublin and Wicklow, across the border by Tinahely and Aughrim to Woodenbridge and home by Rathdrum and Newtownmountkenedy, a total distance of 107 miles. The afternoon was very fine but the roads rough.

Four of the riders, Roche (3½ Rover), Greene (3½ Rudge), Weir (7 Indian), and Armstrong (3½ Rudge), secured full marks at the open controls, while Allen (3½ Rover) and Letchford (3½ Humber) each lost one and Walker seven. These were the only riders to complete the full distance, and the Indian trophy, offered in the competition, should go to Roche, Armstrong, or Greene. Of the others, Jenkins (5 Clyno) was in trouble early, and Rollins (5 Clyno) retired on the first half of the journey, after having three punctures and four bursts in his back wheel.





### Western District M.C. (London).

The postponed reliability trial for the Williams Shield to Tetworth and back from Uxbridge is fixed for the 7th inst. A petrol consumption trial will be held on the 21st inst.

### South Birmingham M.C.C.

The postponed novices' hill-climb will be held on the 7th inst. The hill chosen will be quite straight, and safe for the knock-out principle. The classes are: Lightweight, Touring, T.T., and Passenger.

### Surrey M.C.C.

The Surrey v. Hants hill-climb, held on Wednesday last, resulted in a win for this club, the members securing first and second places in Classes I., II., III., and V., and scoring 1,717 points (average 143) against the 1,475 (average 123) scored by the Hants M.C. Union. Results:

#### CLASS I.

Name.	County.	Machine.	Time.	Fig. of m. s. merit.
1. F. A. McNab,	Surrey	(2½ Douglas)	...	1 44.2
2. F. W. Barnes,	Surrey	(2½ Zenith)	...	1 47.4
3. T. Thompson, jun.,	Hants	(2½ Douglas)	...	1 52.8
4. T. Thompson, sen.,	Hants	(2½ Douglas)	...	2 19.2

#### CLASS II.

1. F. W. Barnes,	Surrey	(3½ Zenith)	...	1 33.8
2. S. Holbrook Crow,	Surrey	(3½ Zenith)	...	1 40.4
3. H. W. Watkins,	Hants	(3½ Triumph)	...	1 34.8
4. G. A. Watkins,	Hants	(3½ Humber)	...	1 43.2

#### CLASS III.

1. F. W. Barnes,	Surrey	(2½ Zenith)	...	1 45.4
2. F. A. McNab,	Surrey	(2½ Douglas)	...	1 43.8
3. H. W. Watkins,	Hants	(3½ Triumph)	...	1 31.2
5. R. Barclay,	Hants	(3½ Rudge)	...	1 33.4

#### CLASS IV.

1. J. G. Kimber,	Hants	(6 Matchless)	...	1 26.8
2. G. W. L. Meredith,	Hants	(3½ Triumph)	...	1 27.6
4. F. W. Barnes,	Surrey	(6 Zenith)	...	1 33.2
5. T. G. Meeten,	Surrey	(3½ Rudge)	...	1 35.4

#### CLASS V.

1. F. W. Barnes,	Surrey	(6 Zenith)	...	1 57.6
2. R. C. Pearson,	Hants	(3½ Premier)	...	2 30.0
3. T. G. Meeten,	Surrey	(3½ Rudge)	...	2 31.2
4. — Humphries,	Hants	(3½ Premier)	...	2 41.8

### Scarborough and District M.C.

On the 25th ult. the annual autumn reliability trial was held over last year's course. Seven hills were officially observed, and competitors penalised for rendering assistance to machines. One hill, Limber Bank, is so severe that every competing motor cycle failed. Needless to say, the sidecar combinations failed as well; even a 20 h.p. car failed at two attempts. The worst portion, 1 in 3½, is preceded by an acute bend.

An interesting feature of the trial was the effort to find out which is the superior machine over—the motor cycle, motor cycle and sidecar, or the ordinary car—and for this purpose a £5 cup was offered for the best performance made by one of the three types. The same system of marking was used for all three, excepting that machines up to 560 c.c. with sidecars were scheduled to run at only 15 m.p.h. Strange to say, the little 10 h.p. two-seater Stoewer made the best performance by losing only 6 marks. The next best performance was made by a 6 h.p. Enfield and sidecar, with a loss of 35 marks. The best performance on a solo machine was poor compared with the two previous performances, as the rider lost 64 marks. There were twenty-two starters. Eight had to retire in the trial for various causes. Results:

Class I.—1, J. E. Truefitt, Scarborough (3½ F.E. Triumph), lost 64 marks; 2, W. Jackson, Scarborough

(3½ Premier, three-speed), lost 126 marks; 3, D. Gill, Doncaster (3½ Calthorpe), lost 184 marks.

Class II.—1, C. P. Finn, Pontefract (6 Enfield sc.), lost 35 marks. The other three passenger combinations retired.

The Klawitter £5 cup for the best performance of the day, for motor cycle, motor cycle and sidecar, or touring car, was won by the hon. secretary, J. W. F. Tranmer, on a 10 h.p. Stoewer car.

### Manchester Hundred M.C.

On the 31st ult. the club held their first annual motor gymkhana at Hoo Green. The weather kept fine, and a large number were present. The events were run off on the large field behind the hotel, and were thoroughly enjoyed by both competitors and spectators. Much amusement was caused in the tug of war by the breaking of the rope, presumably the result of a practical joke.

### Foleshill and North Warwickshire M.C.

The club hill-climb held at Newnham Hill on the 24th ult. resulted as follows:

For machines up to 500 c.c.: 1, C. Orr (3½ Ariel); 2, W. Brandish (3½ Triumph).

For machines of any description: 1, W. Brandish (3½ Triumph); 2, G. H. Broad (3½ Triumph).

Flexibility climb (same gear): 1, W. H. Broad (3½ Ariel); 2, G. H. Broad (3½ Triumph).

C. Orr made fastest time of the day in the latter event on an Ariel.



MERSEY M.C. OPEN RELIABILITY TRIAL LAST SATURDAY. Competitors climbing Matlock Bank, a gradient of 1 in 5. Many came to grief here.





A group of members of the newly formed Gooles and District M.C.C. This club has already a membership of 26.

### Wishaw and District M.C.C.

About fifteen members journeyed to village of Coulter for a hill-climb competition with the following result: 1, Jas. L. Muir ( $3\frac{1}{2}$  Rudge), 39s.; 2, L. McLean ( $3\frac{1}{2}$  Triumph), 43s. The prize on formula went to W. Marshall (3 Clarendon).

### Cheltenham M.C.C.

A club has been formed in Cheltenham with the above title; the headquarters are the Belle Vue Hotel. The club will shortly be affiliated with the Auto Cycle Union. Chairman, Mr. W. J. Bache; and hon. secretary, Mr. A. W. Goleworthby, 413, High Street, Cheltenham.

### Newcastle and District M.C.

The Gordon-Roberts Reliability Trial, which received an entry of twenty-seven motor cars and motor cycles, was successfully carried through on August 24th and 25th. In both the motor car and motor cycle sections the first and second prizes were presented by Messrs. J. S. Gordon and G. E. Roberts respectively.

The competitors travelled by way of Gateshead-upon-Tyne, Marley Hill, Annfield Plain, Lanchester, Wolsingham, Stanhope, St. John's Chapel, Killhope, Alston, Melmerby, Penrith, and Greystoke, to Keswick, a distance of eighty-seven miles; and, staying there over-night, returned by way of Windermere, Kirkstone Pass, Eamont Bridge, Shap, Kendal, Kirkby Lonsdale, Sedbergh, Kirkby Stephen, Brough, Bowes, Barnard Castle, Winston, Piercebridge, Darlington, and Neville's Cross, to Newcastle-upon-Tyne, a distance of 180 miles, bringing the total distance of the trial up to 267 miles.

The weather conditions throughout the trial were of the most wretched description, rain falling practically the whole of the time, and as a result the roads in some parts were almost unrideable; particularly was this the case upon Killhope. In other places the roads were so greasy that many of the competitors had great difficulty in retaining their seats.

Result of the motor cycle competition:

1. G. W. Raper ( $2\frac{1}{2}$  l.p. A.J.S.), who lost no marks; error, 9s.

2. Lawrence Austin (5 h.p. A. J.S. and sidecar), who lost no marks; error, 21s.

Club enamelled silver medals.—F. A. Rudd (6 h.p. Rex-Jap), L. W. Hall (Triumph), R. J. Spencer ( $3\frac{1}{2}$  h.p. Norton), and W. Baxter (5 h.p. A.J.S.), who lost under 30 marks.

Club bronze medals.—Jacob Garson ( $3\frac{1}{2}$  h.p. Ariel) and W. S. Dodds ( $3\frac{1}{2}$  h.p. Singer), who lost more than 30 marks, but who completed the course within 36 hours.

### Streatham and District M.C.C.

The Streatham open hill-climb is being held on Saturday next, the 7th inst. Weighing in at the Clayton Arms, Godstone, up till 1 p.m. The venue of the hill will be posted up at the scales.

### Belfast and North of Ireland M.C.C.

An excellent field turned out for the 100 miles reliability trial on Saturday last for the cup presented by Messrs. John A. Prestwich and Co. Result:

1. James Millar ( $6\frac{1}{2}$  h.p. Campion-Jap).
2. Thomas McCluney ( $3\frac{1}{2}$  h.p. Chater-Lea-Peugeot).
3. John Robb ( $3\frac{1}{2}$  h.p. Swallow-Jap).

### Westmorland M.C.C.

A reliability run was held on the 18th ult. for the Triumph Challenge Cup, medals, and the Graphic prize, presented by the Graphic Garage, Penrith. The course, which was a very severe one of 100 miles, and included Kirkstone Pass, Red Bank, Gummars' Howe, and Underbarrow Scar, had to be non-stop between checks. Result: 1, W. Hutchinson (6 Zenith); 2, H. B. Harrison ( $3\frac{1}{2}$  Rudge), 5s. error; 3, Geo. Braithwaite ( $3\frac{1}{2}$  Rudge), 30s. error.

Hill-climb held last week up Underbarrow Scar. Results: Lightweights.—1, H. Jackson ( $2\frac{3}{4}$  Douglas); 2, R. N. Chaplow ( $2\frac{3}{4}$  Humber).

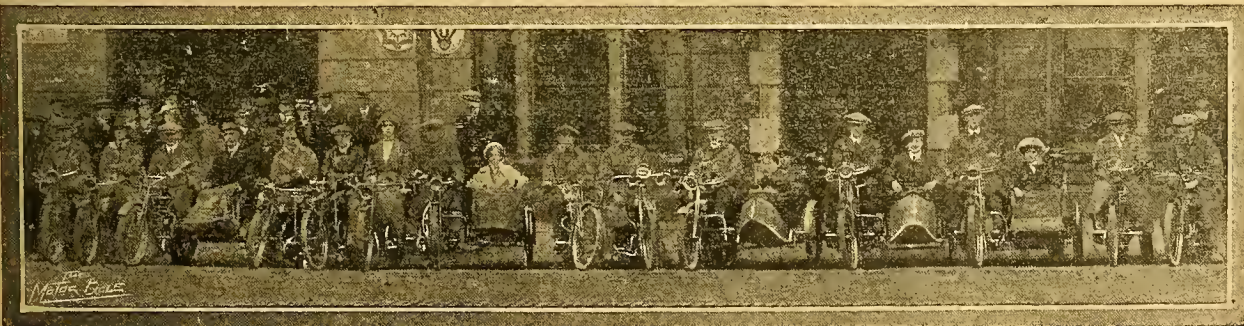
Single-cylinder.—1, G. H. Braithwaite ( $3\frac{1}{2}$  Zenith); 2, L. Pierce ( $3\frac{1}{2}$  Corah).

Twin-cylinder.—1, J. H. Nelson (Scott); 2, L. S. Parker (Scott).

Fastest time.—R. Bownass ( $3\frac{1}{2}$  Matchless).

### Mid Bucks M.C.C.

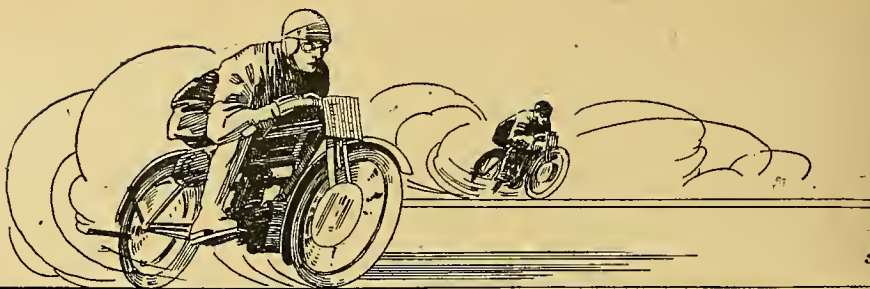
The last of a series of four reliability trials was held on the 26th ult., when, in spite of very adverse climatic conditions, a most successful run took place. The route, which was one of forty-two miles, was by way of Aylesbury, Thame, back to Aylesbury, and thence to Leighton and home, the competitors being required to maintain a speed of seventeen miles per hour. The use of watches and speedometers was barred. The entrants were despatched from the club's headquarters, the King's Head Hotel, at 8 p.m., by Mr. J. H. Smith, who acted as timekeeper, and some very close times were witnessed. The results were as follow: T. Hopcraft 99 points, E. G. Eborn 99, C. G. Strugnell 93, S. T. Cook 92, F. L. Strugnell 91, and E. W. Russell 90. On the four trophy runs points were awarded as follow: Hopcraft (Rover) 344, Cook (Premier) 306, Eborn (Rudge) 285, Ball (Triumph) 281, C. G. Strugnell (F.N.) 253, F. L. Strugnell (Triumph) 166, Edgington 165, Mott 86, and Smith (Ariel) 84. T. Hopcraft will hold the trophy for twelve months.



Group of members of the Leicester County M.C.C. taken on the occasion of their inaugural run.



# QUESTIONS & REPLIES



SRJ

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Perfect Mixture.

I have been reading with great interest the letters in *The Motor Cycle* on carburetters. Could you please answer the following:

(1.) What is the perfect mixture? Is it that at which the engine goes fastest? (2.) What are the causes of burnt valve seatings? (3.) My machine has a peculiar symptom. When on long journeys, after ten or fifteen miles, I suddenly find the engine begin to knock and clank most painfully. This is at once stopped by almost or entirely closing the air lever when the bicycle at once gains way. The air lever can then be opened slowly. My normal jet is 32. I have tried 33 and 34 (B. and B. carburetter), but the results are no better.—C.R.

(1.) A perfect mixture is that on which the engine travels best at a given throttle opening. As to the degree of opening you can give to your air lever this depends very much upon the combination of jet and choke tube in the carburetter. The exact position of the lever is absolutely no guide. (2.) Driving on a strong mixture, or on an excessively weak mixture would cause it. Also the valve timing can have an effect on the burning of the valve seatings. (3.) The symptoms you indicate point to overheating, but are really quite normal for an air-cooled engine. It probably means that you have been driving too hard. The engine should recover after a long run down hill.

## Police Prosecutions.

Would you kindly inform me of the law relating to riding a motor cycle through a town? I am to be prosecuted for riding at the rate estimated by a policeman (not timed) of eight to ten miles an hour. Do you think that by joining the A.C.U. now they would take the case up for me?—N.H.

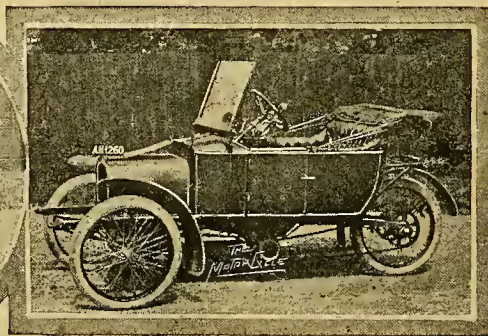
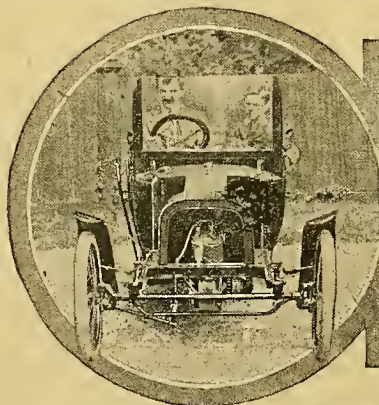
The police cannot prosecute you for exceeding the speed limit and driving to the danger of the public on the same summons. They will either summon you for driving to the danger of the public, when the rate need not be timed, or if you were driving through a speed limit area in excess of the speed prescribed by law, you could then be summoned for exceeding that limit. You do not say whether you were in a speed limit area or whether you are being prosecuted for driving to the danger of the public. In any case, it depends entirely on the circumstances of the case whether the A.C.U. would take the case up for you. What you had better do is to join and then acquaint the secretary with the circumstances. Application for membership should be addressed to the Secretary, A.C.U., 89, Pall Mall, S.W.

## Mysterious Misfiring.

I should be much obliged if you or any of your readers who have experienced a similar trouble could give me any opinion as to the cause of occasional misfiring.

About six months ago my engine began misfiring with loud explosions in the silencer. I sent the magneto to the makers, who rebushed it and remagnetised it, besides generally overhauling it. I fitted the magneto on, and for a month the machine ran excellently, then the same trouble began again. I sent the magneto back to the makers who returned it to me in no way improved. I therefore took it down myself and thoroughly cleaned it, but found nothing wrong with it; when I put it back, however, the machine ran excellently, and has done so for two or three months. Recently, however, misfiring began again and I repeated the treatment, slightly increasing also the space of the safety gap with the same excellent results. The misfiring does not seem to me to be entirely due to the oil in the magneto, as the firing was improved by advancing the spark until the engine knocked, and again the misfiring almost or entirely ceased when the engine had got quite hot and remained all right as long as it was kept very hot, though the spark was again retarded to a normal position. That the misfiring was not caused by the automatic inlet sticking seems clear from the fact that when the misfiring occurred, the charge went through to the silencer and was then exploded by the heat. I have run the machine in the dark and can see no sign of shorting. The sprocket also had not slipped round on the spindle, as both were marked and were in correct relative position. My only possible solution is that the safety gap in the magneto is slightly too short, and this I have enlarged to a very small extent. The makers, however, did not seem to think it too small. The magneto gives a strong spark when the armature is turned sharply with the fingers.—J.G.S.

We have carefully considered your letter, and must say that the case is a very puzzling one. The only way really to settle the matter is to ask the makers of the magneto if they would be willing to exchange the magneto for another one or lend you a magneto of the same type for trial, so that you could see whether there was any improvement. It is possible for misfiring to occur through sticking of the exhaust valve, and if yours is at all a tight fit, we should advise you to take it out and reduce same slightly with emery cloth.



ANOTHER NEW SOCIABLE.

Geo. E. Lambert, the designer of the Lambert cyclecar, at the wheel of the latest model of that make.

Side view of the Lambert cyclecar, showing chain transmission. This neat three-wheeler is fitted with an 8 h.p. J.A.P. engine, and three-speed gear.



# ALWAYS WINNING!

## MOTOR CYCLE GRAND PRIX

THE TWO INDIANS  
WHICH CAME IN

# 1<sup>ST</sup> & 3<sup>RD</sup>

USED

# WAKEFIELD "CASTROL" (Regd.)

Call to mind "Castrol" successes in the Grand Prix (Coupe de la Auto) for motor cars, and the T.T. and 6 days' Trials recently held for motor cycles.

**C. C. Wakefield & Co.,**  
27, Cannon St., E.C.

### YET ANOTHER RECORD BROKEN.

Mr. Harry Martin, at Canning Town, broke the  $2\frac{3}{4}$  h.p. Record (1 to 6 hrs.) using WAKEFIELD "CASTROL."

C.D.C.

# DUNLOPS DO IT AGAIN!

## ANOTHER NEW RECORD.

Mr. Harry Martin established new record—1 to 6 hours—for  $2\frac{3}{4}$  h.p. motor cycle,  
USING DUNLOP BELT.

## THE DUNLOP COUP IN THE SIX DAYS' TRIALS:

3 Special Prizes, 14 Gold Medals, 3 Silver Medals, and 3 Bronze Medals  
**WON ON DUNLOP BELT.**

10 Gold Medals, 4 Silver Medals, and 2 Bronze Medals  
**WON ON DUNLOP TYRES.**

NORTH STAFFORDSHIRE M.C. CLUB, 18/8/12.


ASTON CUP, for BEST PERFORMANCE in 3 RELIABILITY TRIALS,  
**WON ON DUNLOP TYRES AND BELT**

by Mr. J. S. Prendergast, Hordley House, Hanley, on  $3\frac{1}{2}$  h.p. Ivy Precision.

Mr. Prendergast also made FASTEST TIME of the day in the Inter-Club Hill Climb, 27/7/12,  
**ON DUNLOP TYRES AND BELT.**

THE DUNLOP PNEUMATIC TYRE CO., LTD., Aston Cross, BIRMINGHAM; Alma Street, COVENTRY.  
BRANCHES—London, Nottingham, Manchester, Newcastle, Bristol, Leeds, Liverpool, Glasgow, Dublin, Belfast.





Please bear in mind that  
we make four grades of


## PALMER TYRES

<b>Cord Tyre</b> (strongest and best) .....	Cover 26 x 2 1/2 <b>47/5.</b>
<b>Heavy Fabric Tyre</b> (second only to the Palmer Cord) .....	<b>41/6.</b>
<b>Ordinary Fabric Tyre</b> (for Light Machines) ....	<b>29/9.</b>
<b>Privateer</b> (A good cheap tyre) .....	<b>26/8.</b>

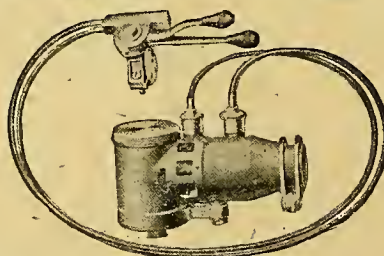
The 3in. Cord Tyre is supplied from stock.  
WRITE FOR PRICE LIST.

### The PALMER TYRE, Ltd.,

119, 121, 123, Shaftesbury Ave., LONDON, W.C.



## World's Records



## at Brooklands

"The only  
Carburetter which  
PERFECTLY ATOMISES  
the Petrol."

# WITH A SENSPRAY

*perfect Touring  
and Racing Carburetter.*

### Carburetter.

On Friday, August 30th, at Brooklands, Mr. Stanhope Spencer, riding a 3 1/2 h.p. Rudge, **FITTED WITH SENSPRAY CARBURETTER**, put up the following **WORLD'S RECORDS**:

1 Hour - 46 miles, 587 yards	3 Hours - 126 miles, 900 yards.
2 Hours - 86 miles, 115 yards	100 miles - 2 Hours, 16m., 10 2/5 s.

Send for illustrated booklet to the patentees and makers—

## CHARLES H. PUGH, Ltd.,

Whitworth Works, **BIRMINGHAM.**



# Licences.

?

Having been a reader of your paper for over seven years, I should like you to settle a dispute I have with a friend, by giving me information as to the following questions. Is it legal for a man to sell a solo mount to his wife (she not to ride same after having bought it) and buy a sidecar combination, using his old revenue licence for the new machine? Would it be legal for the wife to keep machine bought from husband without taking out revenue licence.—E.I.R.

If the transaction be a *bona-fide* one, it is quite legal for a husband to sell a motor cycle to his wife and she would not have to pay a local taxation licence for it provided she did not ride it at any time during the year. The husband, when parting with the machine, would be compelled either to transfer the old registration to his wife, the new owner, or she could apply for the registration to be transferred to her on payment of the fee of 1s., or the registration could be cancelled. When buying the new machine, the husband would, of course, have to take out a fresh registration, but could use his old local taxation licence, as the latter entitled the holder to keep one motor cycle for a year, dating from January 1st.

## Oil Plug in Rear Cylinder.

?

I ride a 6 h.p. twin 1910 a.o.i.v. The back plug is always getting clogged up with oil, and not firing. I have tried reducing the oil supply, but it is still no better. The oil burns across the points and shorts. If I take the plug out and thoroughly clean it it is all right again for five or six miles, and then the trouble starts again.—W.E.I.

If the plugs are fitted in the centre of the cylinder right over the pistons and not at the side, the trouble complained of is due to over-lubrication. If the plugs are fitted at the side the oil is flowing off the edge of the piston right on to the plug, and the best remedy is to change the position of the plugs to the centre of combustion head or cylinder. A single point plug will keep as clean as most others, but you might overcome your difficulty if you were to try a pair of the special plugs made for the Ford car. These are obtainable from the Lincolnshire Autocar Co., Carlton House, Regent Street, W. The Bosch Magneto Co., 40, Newman Street, Oxford Street, W., also make a special plug for oily engines. This plug has points with knife edges, and the heat of the spark, it is claimed, will burn off the oil.

## Newcastle to Bournemouth and Back.

?

My chum and I intend riding from Newcastle to Bournemouth next month. We wish to go by Harrogate and Birmingham, as we have friends to see at these places. Can you tell us the best route to take and the distance? We propose coming back by London, Grantham, and Doncaster.—J.B.

Your best route would be as follows: Harrogate, Wetherby, Aberford, Ferry bridge Doncaster, Tickhill, Workson, Mansfield, Derby, Lichfield, Sutton Colfield, Birmingham, then through Henley in Arden, Stratford-on-Avon, Shipston

on-Stour, Woodstock, Oxford, Abingdon, East Ilsley, Newbury, Whitechurch, Winchester, Romsey, Cadnam, Lyndhurst, Christchurch, and Bournemouth. To return *via* London, take the following route: Bournemouth, Lyndhurst, Cadnam, Winchester, Alton, Farnham, *via* the Hog's Back to Guildford, and on through Ripley, Esher, and Kingston. Your exit from London should be *via* Marlborough Road, Swiss Cottage, Finchley, and Barnet, and then straight up the Great North Road.



A MOTOR CYCLING MARRIED COUPLE AT THE FORTH BRIDGE.

R. M. Chaplow (2½ h.p. Humber) and Mrs. Chaplow (2 h.p. lady's Humber), who recently completed a 500 miles tour in Scotland. We are told that both machines ran splendidly throughout. Mr. and Mrs. Chaplow are members of the Westmorland M.C.C.

## Improving an Old Machine.

?

I have just bought a second-hand 5 h.p. twin Antoine coil and accumulator, and I want to fit a magneto. Could you tell me—

(1.) What angle the cylinders are? (2.) Would it make any difference in power? (3.) When the speed gear is in the free position, that is half-way along the quadrant, the engine runs free for a few revolutions and then suddenly pulls the machine forward for a few yards as if locked and then releases again—could you give me a remedy for this and tell me the cause? (4.) It is fitted with an old type of B. and B. carburetter—would a newer one be an improvement? (5.) Should both plugs be alike?—D.B.

(1.) To the best of our recollection, the engine in question has the cylinders set at an angle of 60°. The makers of the magneto will, when you order it, tell you this when you give them the name and date of the engine. (2.) It would make a slight difference in power. (3.) We should say that the gear is worn, and that the lever does not remain fixed in the quadrant, and allows the low gear to engage slightly. We cannot explain this in detail, as you do not mention the type of gear fitted.

Adjusting the gear correctly will probably cure the trouble. (4.) Yes, a modern carburetter would be an improvement. (5.) It is desirable, but not necessary.

## Sidecar Machine for a Novice.

?

(1.) I shall be grateful if you will give me a few hints as to the best kind of motor cycle to purchase for solo and also sidecar work at a reasonable figure.

I am quite a novice as regards motors, and am very perplexed as to a suitable make. (2.) Which is best sidecar, a castor wheel or a fixed wheel? (3.) Some cycles, I am told, have the change gears controlled by the feet, others by the hand. Which is safest? (4.) Is it necessary to have three-speed gear or two-speed for sidecar work?—G.E.W.

(1.) It is always very difficult to give advice regarding the purchase of a sidecar machine. The 3½ h.p. with change-speed gear behaves very well in fairly level country, but when stiff hills have to be encountered the more powerful twin-cylinder is the type which is required, but it is hardly such a good machine for a novice to learn on as a 3½ h.p. (2.) The fixed wheel sidecar is the most popular. (3.) Most two-speed gears are controlled by the foot, and are very conveniently operated, while the three-speed gears are hand-controlled. There is no difference as regards safety. (4.) Most certainly.

## Lights on Sidecars.

?

It may be of interest to fellow readers to know that, if riding through Llandaff, near Cardiff, they may be fined 15s. 7d., as I have been, for not having two lamps in front on sidecar combination. Whether it is legal or not, I was summoned and had to pay as above, although I pointed out that I had one good light at the time. I should be glad of your opinion.—W.B.

Our legal representative replies: "There is no doubt that byelaws may be made making stricter provisions with regard to lights on sidecars than those which are in force according to the ordinary law of the land. I do not know when the byelaw referred to was passed, but I would point out that the Lights on Vehicles Act, 1907, provided that all byelaws then in force relating to lights on vehicles should from the date of the passing of that Act cease to have effect so far as respects vehicles to which the Act applies. As the Act does not apply to a motor cycle, any byelaw passed before that time would still be applicable, and if it has been passed since that time, no question arises."

## EXPERIENCES WANTED.

"S.K.R." (Wells).—Best way of running 3½ h.p. Scott by one who has only been used to a four-stroke.

"C.F." (Doncaster).—Triumph fitted with Bowden two-speed gear.

"W.H." (Southport).—2½ h.p. E model Douglas, with sidecar.

"T.B." (Mysore).—(1.) Four-cylinder two-speed F.N. with sidecar. (2.) T.M.C. with sidecar. (3.) G.W.K. cyclecar.

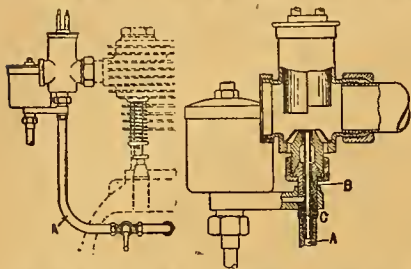
"D.M.I." (Derry).—4½ h.p. Excelsior fitted with Binks carburetter.

"A.J.K." (Dovercourt).— "Levis" two-stroke. Reliability and consumption.



**A Forced Feed Carburetter.**

On the suction stroke of the engine the down stroke of the piston is utilised to force air from the crank case along



the pipe A to the carburetter. The petrol passage B is of large bore, and through it passes a tube C along which the air from the carburetter passes, providing a full charge and inducing an adequate supply of fuel from the jet outlet.—H. C. Newman, No. 14,642, 1911.

**A Belt Fastener.**

The portions A embrace the ends of the belt B, as usual, and are formed with circular eyes, into which are secured



studs C, by acetylene welding or otherwise. The parts A are held together by plates D which are slotted to pass over projections E on the ends of the studs

**A Success in France.**

Continental tyres were used by O. C. Godfrey when he won the French Motor Cycle Grand Prix.

**A New Address.**

The "AK" Manufacturing Company have moved into larger premises at 348a, Idle Road, Bradford. They are the makers of the well-known "AK" knee grip, tyre gaiters, and pouch belts, etc.

**Lubricant in the Six Days' Trials.**

In the A.C.U. Six Days' Trial Sternal was particularly successful in gaining twenty-one honours out of thirty-five competitors who used it. It was also noticed that the failure of the other fourteen competitors was on no account due to lubrication or engine trouble.

**A Tyre Gaiter.**

Messrs. A. Nuttall and Co., leather factors, Goodmayes, Essex, have lately brought out a chrome leather sleeve for laying round the inner tube and protecting it against bursts in the outer cover. The sleeve, which is unaffected by heat, is a useful accessory, and has called forth several valuable testimonials from riders who have found it of the greatest service in actual practice.

**Records.**

We are in receipt of a booklet published by the Hendee Mfg. Co., entirely devoted to records and performances obtained by Indian motor bicycles, both in the United States and Great Britain. The book makes most interesting reading, as it forms a complete history of this most successful make of motor bicycle. The remaining three pages are devoted to a useful speed table.

**PATENTS.**

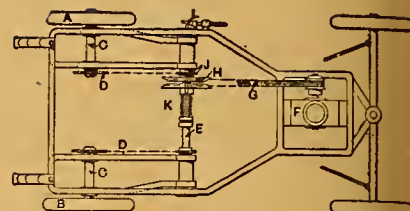
C when the parts are in a position which they do not assume when in use. The parts, therefore, cannot become detached accidentally.—R. W. Young and H. J. Walford, No. 14,004, 1911.

**A Gradually Variable Gear.**

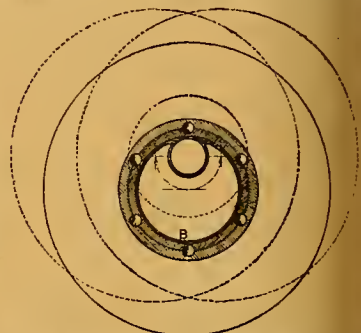
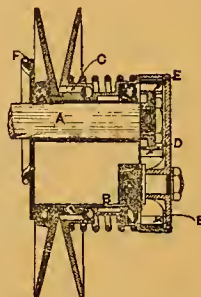
Mounted upon the engine crankshaft A is an eccentric carrier B. Around the carrier B rotates, upon ball bearings, a variable pulley device C of the movable flange type. This pulley mechanism is driven from the engine-shaft by a spur gear D meshing with an internal ring E, the gears forming a reducing gear and enabling a large pulley to be employed. In operation, the eccentric carrier B is rotated upon the crankshaft by a Bowden wire F, or other device, setting up a variable tension on the belt, which is compensated by automatic movement of the movable pulley flange, thus providing a gradual variation of the gear ratio.—No. 23,084, 1911.

**A Cyclecar Differential Drive.**

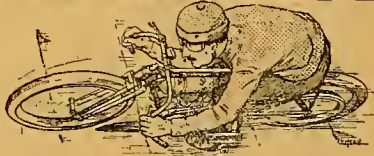
The driving wheels, A, B are mounted upon short axles C and are driven by chains D from a counter-shaft E. The drive from the engine F to the counter-



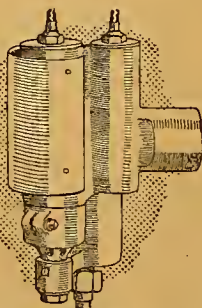
shaft is by means of a V belt G engaging a pulley H, each flange of which is mounted upon its own sleeve J driving



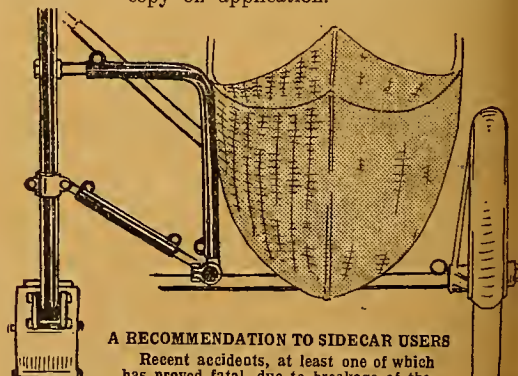
one of the chains D. One flange of the pulley H is slidable against a spring K by means of a wedge device L, so that when this is operated belt slip is permitted and the rear wheels allowed to rotate at different speeds, thus providing the effect of a differential gear.—C. N. Legge, No. 6,570, 1912.

**SPARKLETS****Silencers a Speciality.**

We are in receipt of the latest catalogue of Messrs. J. C. Lyell and Co., Ltd., 113, Great Portland Street, W. The accessory sold by this firm which is best known is the Clair silencer, which has several times been referred to in these pages. These silencers are made in all sizes from 14 h.p. to 7.9 h.p., and are suitable for twin-cylinder machines.



Shield to catch petrol spray fitted to the latest Triumph machines. It is said greatly to economise petrol.

**A RECOMMENDATION TO SIDECAR USERS**

Recent accidents, at least one of which has proved fatal, due to breakage of the front sidecar connection, draw attention to the need for an additional supporting tube. We recommend every sidecar to have a supplementary tube fitted, as shown.

**Catalogues Received.**

The latest catalogue of the Forward Cycle and Motor Co., 6-7, Edmund Street, Birmingham, contains, in addition to illustrations and particulars of the 2½ h.p. twin-cylinder machines, several interesting photographs of the 1911 Six Days' Trials.

The Leatheries, Ltd., Birmingham, send us their catalogue of saddles, tool cases, carriers, etc. The Empire de Luxe motor cycle saddle has been specially designed to give the rider an extremely low position.

The pocket edition of Brown Bros.' catalogue is one of the handiest books of reference for the motorist that we know of. It contains illustrations, prices, and descriptions of practically every article in the accessories and fittings, trade with a useful index. Readers may procure a copy on application.



# RONI

## The Famous Bray "Roni"

Acetylene Burner

FOR

Motor Cycle Headlights

Gives, from a single gas-way only, an atmospheric flat flame which cannot become distorted and crack mirror or lens.

The burner is of the air-injecting type—it will not carbonise.

It is now fitted with a pressure check which obviates flaring.

Send for descriptive booklet of the "Roni" Burner to

**GEO. BRAY  
& Co., Ltd.**

Dept. M.,  
LEEDS.

# Reduced Prices

at end of Season.

## MATCHLESS. HAZLEWOOD.

## A.S.L.

## CALTHORPE.

ACCESSORIES.

REPAIRS.

THE  
MOTOR  
MAINTENANCE  
COMPANY

Established

1907.

184, Great Portland Street, W.

Tele { phone : 4839 Mayfair.  
grams : "Motenace, London."

THE

NON-SKID.

## "BURNETT" PATENT SUCTION - CUP TYRE.

Six Days' Sidecar Record beaten by Mr. Norman Taylor on "Burnett Tyres," riding 1,553 miles.—See "Motor Cycling," p. 367.

### TESTIMONIAL.

30, Upper Sandhurst Road,  
Brislington,  
BRISTOL.

March 27th, 1912.

Messrs. The Burnett Motor Tyre Co.,  
Melksham, Wilts.

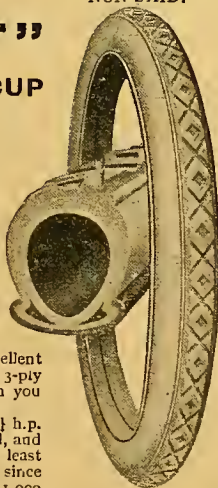
Dear Sirs,—It is with much pleasure that I express to you my satisfaction of excellent results I have had from one of your Special 3-ply Motor Cycle Tyres, which I purchased from you in 1910.

I fitted tyre to the rear wheel of my 4½ h.p. single-cylinder motor cycle, sidecar attached, and ran about 3,000 miles without having the least bit of trouble, not even a puncture. I have since removed tyre to wheel of sidecar, and after 1,000 miles is still in excellent condition.

It is also interesting to note that during the time tyre was running on rear wheel of motor cycle, I used no less than three tyres of well-known makes on front wheel, which caused me no little inconvenience.

I may also add that I found tyre excellent as a non-skid during bad weather and far superior to any other make of tyre which I have ever tried.

Yours truly, W. H. WHITE.



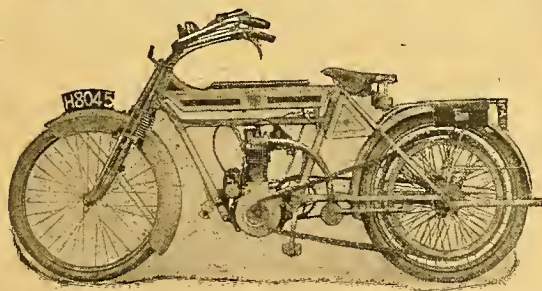
	3-Ply.	Tubes.
26 x 2 .. ..	33/-	8/6
26 x 2½ .. ..	34/6	9/6
26 x 2½ .. ..	36/-	10/6

Carriage Paid. Less 10% Cash with Order.

**THE BURNETT MOTOR TYRE CO.,  
MELKSHAM, WILTS.**

Tel.: 33, Melksham. Tel. Address: "VACUUM, MELKSHAM."

# MOTO-REVE



2½ h.p., as illustrated .. .. 37 Guineas.

2 h.p., single .. .. 27 Guineas.

3 h.p., twin .. .. 42 Guineas.

AND

4 h.p., twin .. .. 48 Guineas.

**WE CAN NOW GIVE DELIVERY  
OF THIS MODEL.**

Write for List.

The MOTO-REVE Co., Ltd. Acton Vale, London, W.



## DO NOT MISS THIS CHANCE TO SAVE MONEY.

Previous to Stock-taking and the introduction of 1913 Models we offer a few

## TRUMP-JAPS

At £5 to £8 under List prices.

3½ h.p. List £48 6 offered at  
£43 10

3½ h.p. Free Engine. List £53 11  
offered at £48 10

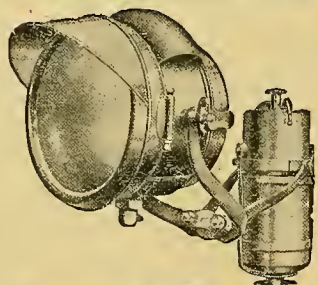
Sturmey Archer 3-speed. List £58 16  
offered at £50 10

ONLY A FEW LEFT.

SEND YOUR ORDER AT ONCE OR  
YOU WILL BE TOO LATE.

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36, John Bright Street, BIRMINGHAM.

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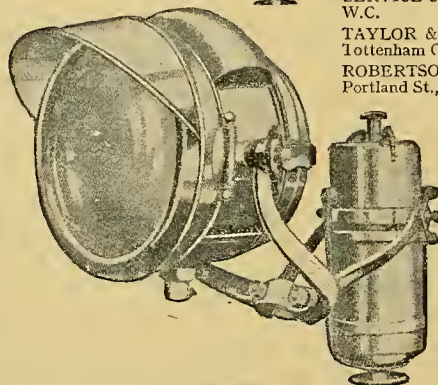


1,200 feet Beam,  
78/6

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## MARTIN-J.A.P. Motor Cycles. THE WORLD'S RECORD HOLDERS. BROOKLANDS EXISTING RECORDS.

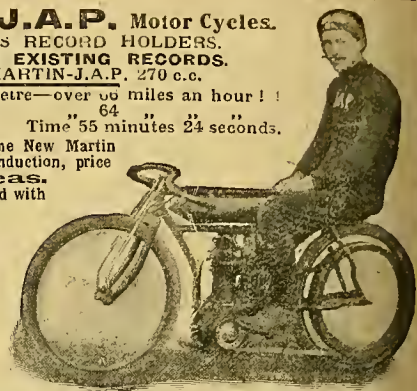
CLASS A. 1½ h.p. MARTIN-J.A.P. 270 c.c.  
World's kilometre—over 60 miles an hour!  
Mile 64  
" 50 Miles Time 55 minutes 24 seconds.

Send for particulars of the New Martin  
Lightweight with forced induction, price

40 Guineas.  
3½ h.p. efficiency and speed with  
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MARTIN Motor Cycles  
have for three years won  
the A.C.U. Championship  
at Brooklands against all  
other makes, and still hold  
the 50 Guineas' Trophy  
for the same.

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## STERNOLINE MOTOR GREASES

In the new flat tin  
with the handy scoop.



"STERNOLINE" Motor Greases  
should be used by all Motorists who  
consider economy.  
They abolish all friction, thus reducing  
wear and tear on the car. See that  
the seal is intact.

Full particulars and prices on request.

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## See that Security Sleeve?



It overcomes the one disadvantage  
of the Butt-ended Tube—bursting at  
the ends. It is the feature of the  
"Challiner" Patent Butt-ended Tube.  
With it you have the security of the endless tube  
and the handiness of the butt-ended one.

The Security Sleeve is fixed to the rim by the winged nut  
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The centre of the Security Sleeve is a bulkhead of insulated  
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**'Challiner' Patent Butt-ended Tubes  
are burst-proof at the ends.**

If a tyre fitted with this tube were inflated to bursting point, the  
burst could not occur at the ends.

The bulkhead keeps the Tube ends firmly in position; and being  
fixed to the rim directly opposite the valve, it prevents all 'creeping'.  
'Creeping' of the Butt-end Joint is what causes other tubes  
to burst.

Fit "Challiner's" to your mount now!

PRICES (complete with Sleeve)			
26" x 2"	26" x 2½"	(650 x 65 mm)	700 x 75 mm
15/-	16/6	17/-	20/-

Sent post free on receipt of price.  
**Shrewsbury & Challiner Tyre Co. Ltd.,**  
MANCHESTER, LONDON.  
BIRMINGHAM.



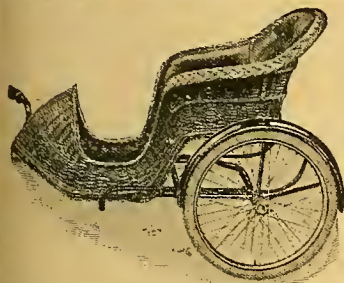


# CORONET SIDE CARS

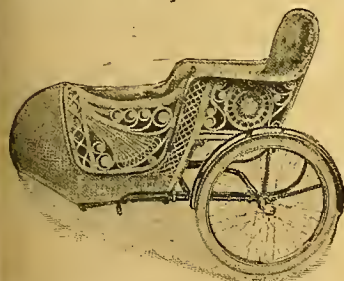
## NO HUT REQUIRED

store a "Coronet." Our quick detachable joints enable sidecar to be detached in one minute, and can be passed through a 30in. doorway.

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Model 1. High-class Canoe-front Body, Cranked Axle, and other improvements, £6 6 0.



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Get rid of your under-powered engine. We will take it in exchange for a powerful "Precision" and make a liberal allowance.

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can deliver by return. We can supply either with or without magnetos, carburettors. All models Precision engines supplied.

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Get rid of your out-of-date magneto, coil, or accumulator, and let us take them in exchange for the latest water-tight magneto.

**INSPRAYS.** Your old carburettor taken in exchange. Liberal allowance. Ask for quotation.  
**NKS.** and B's.

**BOOTH'S MOTORIES,**  
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## MOTOR BICYCLES FOR SALE.

**HEBBDEN'S Great Sale.**—These are all there are left. Be quick to secure the bargains.

1912 Rudge Multi, shop-soiled; £54.

1912 Free Engine Triumph, shop-soiled; £50.

1912 Humber, 2-speed, and canoelet sidecar; usual price £65/2, now £59/10.

1912 James, 2-speed, and kick starter, chain drive, and canoelet sidecar; £73/3, now £65.

1912 New Hudson, 3½ h.p. J.A.P. engine, 3-speed and free engine; £59/17, sale £53.

1912 2½ h.p. Premier, 3-speed and free engine; £46/10, sale £37/10.

1912 Free Engine Triumph, unpacked.

1912 T.T. Roadster Triumph, unpacked.

1912 Multi Rudge, unpacked.

## SECOND-HAND—

1912 Free Engine Rudge, as new; £45.

1912 Lady's Douglas, 2-speed, and kick starter, as new; £44.

1911 T.T. Triumph, as new; £39/10.

1911 T.T. Rudge, as new; £33.

1911 Lincoln Elk, 2½ h.p., as new; £17/10.

1910 Moto-Reve Twin, 2½ h.p., new tyres, Whittle belt, just overhauled; a gift, £19/10.

1909 Standard Triumph; £28.

1909 Rex, 3½ h.p., new tyres and Whittle belt; a gift, £19.

1909 N.S.U., 3½ h.p., 2-speed; £20.

VINDEC Special and Sidecar, 5-6 h.p., free engine; £20.

ALL the above machines are in first-class order, and all machines fitted with mag., and up-to-date fittings; no rubbish, but every one an absolute bargain and can only be had from Hebbden's Motor Mart, Burnley. Tel.: 488. [5001]

3½ h.p. Humber, low, new tyre, carrier, fine condition; £28.—24, Church Rd., Urmston. [4799]

SINGER, 2h.p., 1911, splendid order, handy for town; £25.—Prelie, 67, Dale St., Liverpool. [X2684]

5 h.p. Rex, free engine, mag., B. and B., spring forks, fine order; £17/10.—Stocks, Cross, Holmfirth. [4813]

3½ h.p. Humber, new Dunlop tyres and tubes; £8/10.—Foster, Beech View, Sowerby Bridge, Yorks. [X2868]

RUDGE, 1912, free engine, 300 miles, guaranteed perfect; £38.—Walmesley, 12, School St., Accrington. [4771]

HUMBER Lightweight, 1911, new parts, spares, good condition; £25.—Ernest Holdsworth, Chevet, Wakefield. [X2195]

1912 Bradbury (June), little used, perfect, uns scratched, makers' guarantee; £38, bargain.—95, Wallgate, Wigan. [X2197]

1910 Phelon-Moore, 3½ h.p., 2-speed, free engine, good condition; £39, or near offer.—Taylor, Crosshill, Driffield. [X2871]

1912 Bradbury, N.S.U. 2-speed gear, never ridden; accept £44.—F. Anders, 38, Platt Lane, Hindley, Lancs. [X2696]

TRIUMPH, 3½ h.p., mag., B. and B., new tyre and belt, guaranteed perfect; £16.—17, Peel St., Accrington. [X2865]

3½ h.p. Chater-Lea-Brown, mag., in fine condition; £215, or nearest offer.—144, Penthill Rd., Kirkdale, Liverpool. [4841]

SCOTT, 1911, overhauled, perfect order, spare tube, lamp, horn, tools, complete; £46.—26, Blenheim Rd., Bradford. [4936]

1909 Tourist Trophy Triumph, only done 2,500 miles, mudshields, whistle; £25.—Moss Kay, Dalton-in-Furness. [4937]

MUST Sell Immediately.—Rex, 1909, 2½ h.p. lightweight, mag., Whittle, h.b.c.; £10.—15, Bradford St. West, Bolton. [X2877]

1911 Royal Enfield, 2½ h.p., new Whittle, spare Lyso, fine order; £26, no offers.—1,258, The Motor Cycle Offices, Coventry. [X2822]

NEW Hudson, 1912, 3½ h.p., perfect condition; £48, r with sidecar £52; offers.—Walker, The Nork, Mirfield, Yorkshire. [X2817]

CLEMENT-CHATER-LEA, 1½ h.p., low, B. and B. carburettor, splendid condition; £10.—7, Cheltenham Rd., Blackpool. [X2623]

TRIUMPH, free engine, new Feb., 1912 (1911 model), little used, lamp, horn, spares; £40.—Plester, Lyndhurst, Tadcaster. [X2870]

## MAKE MONEY NOW.

The best time to buy a motor cycle is now. A little cash will go a long way. We are prepared to consider offers for any machine on our list.

**List Price £47 10s.**

**Our Price £36 10s.**

**Saved - £11 0s.**

We offer a High-grade Machine, namely, a **BRAND NEW**

**1911½ 3½ h.p. PREMIER**

at a **REDUCTION of £11.**

Fitted with all improvements. Fully guaranteed. Delivery from stock.

**FOR £10 EXTRA**

we can supply above machine fitted with **Armstrong or Sturmey-Archer 3-speed gear.** Just the thing for Sidecar work.

CLYNO 1912, only run 200 miles	£57 10
HUMBER, 1911, 3½ h.p., 2 speeds, handle starting, and Milford sidecar	£40 0
PREMIER, 3½ h.p., 1911 model	£30 0
N.S.U., 6 h.p., 1910, 2-speed, and new sidecar	£38 10
N.S.U., 3½ h.p., 1908, magneto, 26in. wheels	£13 10
REX, 3½ h.p., 1908, spring forks, magneto	£16 10
Twin DOT, 7-9 h.p., 2-speed, handle starting, with sidecar	£36 10
CLYNO, New, 1912 model. In stock	£63 5
VINDEC, 5 h.p., 1910, 2-speed	£35 0
REX, twin, 1910, Speed King	£20 0
REX DE LUXE, 5 h.p., twin, 1911, M.O.V., with £12 12s. Rex sidecar	£47 10
REX, 3½ h.p., vertical engine magneto	£8 10
BRADBURY, 1910, 3½ h.p.	£20 0
HUMBER, 1910, 2-speed gear	£29 10
SAROLEA 5 h.p. Tricar, P. and M. gear	£10 10
ENFIELD Lightweight, 1910	£18 10
QUADRANT, 3½ h.p., magneto, spring forks	£16 10
DAVIS DOUBLE, 1911, 6 h.p. J.A.P. 2-speed gear; cost £94	£24 10
DARRACQ 9 h.p. 2-seater Car, 3 speeds and reverse	£15 10
3 h.p. CLYDE, M.O.V. magneto	£8 10
WOLF Lightweight, 1910	£10 0
QUADRANT, 3 h.p., vertical engine	£5 10
HUMBER Tricar, open frame, wheel steering, water-cooled	£15 0
REX DE LUXE, 7 h.p., 1911, 2-speed	£40 0
REX DE LUXE, 5 h.p., 2 speeds, magneto	£22 10

PUSH CYCLES TAKEN IN EXCHANGE.

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7 a.p. Twin REX, 1911, M.O.V.	£9 10
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6 h.p. Twin ANTOINE	£6 0
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2½ h.p. MINERVA £2 10	1½ h.p. MINERVA £1 10

Exchanges entertained.

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WANTED.—All Spring Forks.	
New 1912 B. and B. Carburettor	23/6
7½, 6in. 4in. Whistle belt	10/-
Mabon Clutch, fit twin Peugeot	35/-
Nearly new 1912 Senspray	23/6
Bradbury Pattern Handle-bars	6/6
Lowen Sidecar; cost £14	£5
Mabon Clutch, fit 1911 twin Rex	35/-
Long Handle-bars, dropped ends	5/6 and 6/6
Coronet Silencers, up to 5 h.p.	3/3 and 4/6
Sidecar lamp brackets	1/6
Wide Mudguards, 4in.	pair 2/11
B. and B. Amac, h.b. control	13/6
New Amac Carburettor, h.b. control	18/6
Montgomery Costor Spring Wheel Sidecar	£6 10
Mills-Fulford Sidecar	£3 15
Tubular Carriers, with drop ends	4/6
Cyclecar Chassis, wheel, tyres, P. and M. 2-sp.	£12 10
Sidecar Lamps, show red behind	6/9

**Booth's Motories,**

Keighley Mills, Bedford Street North, Halifax.

Telephone 1062.



**DO IT NOW.**

£660  
£770  
£880  
£990

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£10100  
£11110  
£12120  
£13130

GUARANTEED FULLY TWELVE MONTHS.

EARLY DELIVERIES.

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We are now booking orders for 1913  
**SCOTT'S & DOUGLAS'S.**  
Guaranteed delivery dates. Exchanges.  
Dates reserved by £5 Deposit.

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Special offers in 1912 models. Immediate delivery ex-stock of

**REXES  
DOUGLAS'S  
SCOTT'S  
ZENITHS  
ARIELS  
RUDGES**

Call and inspect or write.

No extra for deferred payments.

**REXES**

We still have for disposal a few brand new and guaranteed 1911½ Rexes, 1912 footboards, magnetos, carburettors, gears, tyres, belts, etc., etc.

Maker's price .. . 60 Gns.  
Our price .. . 51 Gns.

Cash or Exchange.

Deferred payment terms £14 with order and 12 monthly payments of 66/8

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**MOTOR BICYCLES FOR SALE.**

1912 Bradbury, clutch model, used once, 27 sidcar, accessories; accept nearest £50, cost £82-80. Bispham Rd., Southampton. [X2734]

**TRIUMPH**, 5½ h.p., 1911, free engine, 1912 spring forks, in good condition; £36.—Broadbent and Ellis, Didsbury, Manchester. [X2836]

**DOUGLAS**, 1912, model K, latest improvements; immediate delivery, no waiting; £50; cash or deferred terms arranged.—Hitcher's, Ltd., Morecambe. [4708]

1912 P. and M., colonial models; immediate delivery, no waiting; £65; cash or deferred terms arranged.—Hitcher's, Ltd., Morecambe. [4709]

1912 Scotts, latest pattern, brand new, just in from works; immediate delivery, no waiting; with X-Pull saddle; £65/10; cash or deferred terms arranged.—Hitcher's, Ltd., Morecambe. [4710]

1912 Matchless, 6 h.p., 2-speed, just in from works, one of the finest sidcar machines on market; listed £69/6, offers wanted; cash or deferred terms arranged.—Hitcher's, Ltd., Morecambe. [4711]

6 h.p. Zenith, 1912, F.E. device, latest pattern; no waiting, immediate delivery; listed £70/7; cash or deferred terms arranged.—Hitcher's, Ltd., Morecambe. [4712]

1912 7 h.p. 2-speed Indian, latest improvements, just come in; £75; cash or deferred payments arranged; immediate delivery.—Hitcher's, Ltd., Morecambe. [4714]

1912 Bradbury, with N.S.U. 2-speed or Sturmer-Archer 3-speed; write for prices, must be cleared.—Hitcher's, Ltd., Morecambe. [4715]

1912 Rudge, ordinary model, brand new; listed at £48/15, to clear will accept £41/10.—Hitcher's, Ltd., Morecambe. [4716]

1912 Rudge, F.E., brand new; listed £55, to clear £47/10.—Hitcher's, Ltd., Morecambe. [4717]

1912 Multi-speed Rudge, brand new, listed £60, will accept £51 to clear.—Hitcher's, Ltd., Morecambe. [4718]

1912 8 h.p. Rex-Jap, brand new; listed £73/10, accept £65 to clear.—Hitcher's, Ltd., Morecambe. [4719]

1912 Clyno, brand new and unpacked; listed at £55us, will accept £50 to clear.—Hitcher's, Ltd., Morecambe. [4707]

3 h.p. Bradbury, new October, 1910, Lucas generator, spare tube, tools, and all accessories; £28.—129, North Rd., Clayton, Manchester. [4922]

1911½ 5 h.p. Rex de Luxe, Whittle, insured, £35; Montgomery cane sidcar, lamp, toolbox, £6.—Beesley, Charlestown Rd., Blackley. [X2838]

**RUDGE** Multi in stock for immediate delivery, just delivered; exchanges entertained; £60.—West Yorkshire Motor and Garage Co., Ltd., Settle. [X2692]

**INDIAN**, 4 h.p., late 1910, in first-class condition, all spares; £50, or near offer, or exchange for 5 h.p. twin.—Gordon, Empire, Goldthorpe, Yorks. [X2866]

1910 2 h.p. Twin Moto-Reve, tyres, engine like new, in thorough sound condition, had little use, reliable; £20.—36, Meersbrook Rd., Sheffield. [X2826]

3 h.p. 1912 Bradbury, free engine, like new, lamp, horn, tools, not done 900 miles, Palmer cord on back.—Parkinson, 29, Devonshire Rd., Pendleton. [X2866]

1910 Triumph, free engine model, perfect running, first-class condition, Whittle and Dunlop belts, spare cover, etc.; £50.—141, High St., Marske-by-Sea. [X2654]

**TRIUMPH**, free engine, 1912, latest model, as new, never used; must sell, accept first cheque £48; seen by appointment.—Grifton, 52, Barnesley St., Wisan. [X2682]

1912 Mead-Precision, 3½ h.p., brand new, in crate, as received from makers; list price £48; cash offers wanted.—1,259, The Motor Cycle Offices, Coventry. [X2823]

2 h.p. Handy Hobart, Armstrong 3-speed and free engine, mag., Druid spring forks, like new; £32.—Allen Bros., 75, Wellington Rd. South, Stockport. [X2820]

**WANDERER** Lightweight, Bosch mag., spring forks, geared pulley, just overhauled, enamelled and plated; £18.—Allen Bros., 75, Wellington Rd. South, Stockport. [X2889]

**NEW** Rudge Multi, with sidcar, £63; free engine B.S.A., only done 20 miles, £48; Rudge, free engine, soap-solled, with sidcar, £53. — Carr's Garage, Bury. [X2658]

**BRADBURY**, 20/6/12, F.E., Miller lamp and generator, watch, horn, tools, spare valves, good tyres, in absolute perfect condition; £44.—98, Church St., Eccles. [4880]

1912 T.T. Premier, magnificent condition, P. and H. lamp, spare valve, horn, very fast, not done 900 miles; £38.—Richard Winder, Bollings Corn Mill, Bradshawgate, Bolton. [4856]

1912 5 h.p. Clyno, Palmer tyres, Lucas lamp, horn, watch, Binks carburettor, condition and appearance absolutely as new; approval, deposit; £50.—Potter, Leicester Grove, Leeds. [X2869]

**DOUGLAS**, 1910, 2-speed, conversion, lamp, horn, spares, £53 5p. speedometer, large saddle, kit bag, 24 Palmer cord back wheel; £27/10.—Apply, Box 1261, The Motor Cycle Offices, Coventry. [X2888]

1909½ Triumph, fitted with all 1910 improvements, including new tank, engine just been re-bushed, many spares and accessories; bargain, £25.—Hodgkinson, Moorland View, Ben Rhydding. [4691]

**WE ARE**

Exchange Specialists. We shall be pleased in any case to allow you maximum market value on your present mount in part payment for either

**NEW OR SECOND-HAND MODELS.**

We also consider cash offers on new and second-hand machines.

Whatever your offer, do not be afraid to make it. We are "case-hardened," and can bear a lot of rough treatment in the way of cash offers.

**WE MAKE NO EXTRA CHARGE**

for deferred payments for most 1912 models, and can deliver from stock the undermentioned 1912 brand new machines:

3½ h.p. **SCOTT**.  
6 h.p. **REX SIDETTE**.  
6 h.p. **REX DE LUXE**.  
3½ h.p. **REX SIDETTE**.  
3½ h.p. **REX TOURIST**.  
3½ h.p. **ARIEL**, 3-speed.  
2¾ h.p. **DOUGLAS**, Mod. K.  
3½ h.p. **RUDGE**, Multi.  
3½ h.p. **RUDGE**, Free engine.  
3½ h.p. **ZENITH** (Gradua Gear).  
6 h.p. **ZENITH** Gradua Gear).

Send your offers.

All others, delivery within 10 days;

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**SECOND-HANDS** (a selection from our lists).

**MINERVA**, 2½ h.p., good order, £14  
**REX SIDETTE**, 1912 model, as new..... £60  
**PREMIER**, 3½ h.p., 1912, 3-speed.... £48  
**PREMIER**, 3½ h.p., 1910 model .... £32  
**RUDGE**, 3½ h.p., 1911 T.T. model .... £34  
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**T.A.C.**, 7-8 h.p., 1910 model ..... £36  
**P. & M.**, 3½ h.p., 1911 model ..... £50  
**SCOTT**, 3½ h.p., 1910 model, and sidcar £36  
**F.N.**, 4½ h.p., 4-cylinder ..... £23  
**A.J.S.**, 3 h.p., twin, just overhauled .... £27

**SPECIAL OFFER.** Almost new, 1912, A.C. Sociable de Luxe model, with hood, screen, and lamps. Guaranteed perfect. Cost £110, Accept £88

**F.N.**, 2½ h.p., 1910, tricycle, 2-speeds .... £30  
**REX**, 5 h.p., tourist model..... £22  
**MINERVA**, 4½ h.p., spring forks .... £19  
**ANTOINE**, 5-6 h.p., twin, low built .. £19  
**PHENIX**, 8 h.p., car, 2-seater ..... £26  
**ANGLIAN**, 2 h.p., lightweight ..... £8  
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**SPECIAL LINE.**

**Shamrock-Gloria Clearance Belts** at half maker's list prices. Send for a length on approval. Money returned if not satisfactory.  
1 in., 8d.; 1¼ in., 10d.; 1½ in., 1/1-; 1¾ in., 1/2 per foot.

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Victoria Motor House, Powell St., Halifax.

ALL MACHINES SEVERELY TESTED BEFORE LEAVING THE WORKS.

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

## CLEARANCE SALE!

One Multi Rudge in stock. First cheque secures. PRICE £60.

DOUGLAS 2-speed and free-engine and adjustable pulley engine starts with the back wheel on the ground ..... £55 10

DOUGLAS free-engine model ..... £55 0

DOUGLAS standard ..... £48 15

DOUGLAS T.T. ..... £43 15

LYAL ENFIELD, 1912, any model. .... £55 0

WITH-GRADUA, cw, 3 1/2 h.p. .... £44 0

W HUDSON, 3 1/2 h.p., 1912, 3 speeds ..... £41 0

MBER, 1912, 2-speed, handle starting & M., as good as new, complete with sidecar, 3 speeds ..... £45 0

W HUDSON Lightweight, 2 1/2 h.p. lap, like new, 3-speed gear, a bargain ..... £35 0

DOUGLAS, 1912, like new 3 1/2 h.p. .... £33 0

DOUGLAS, Standard 1912, 3 1/2 h.p. .... £38 0

EMIER, 3 1/2 h.p., 1912, complete with sidecar, 3 speeds ..... £55 0

W HUDSON, 3 1/2 h.p., 1912, not done 300 miles, 3 speeds ..... £46 10

MBER, 3 1/2 h.p., 2-speed and free engine, take a sidecar ..... £39 0

UMPH, 3 1/2 h.p., late 1908, a beauty ..... £25 0

IX DE LUXE, 3 1/2 h.p., 1911, with 12 improvements, 2 speeds ..... £36 0

COLLIN ELK, 3 1/2 h.p., 2-speed and kick starter ..... £36 0

EMIER, 3 speeds, 1912, complete with sidecar and numerous spares ..... £54 0

IX, 1908, 3 1/2 h.p., h.b.c. .... £10 0

IX M., complete with 9 guinea sidecar ..... £32 0

IX, 1910, 5-6 h.p., 2-speed, and free engine complete with sidecar ..... £36 0

IX, Lightweight, 1911-12, shaft drive, shop-soiled, complete with £10 worth of spares ..... £38 0

IX, 5-6 h.p., fitted with 2-speed gear and free engine at a cost of over £60, a bargain ..... £38 0

TO-REVE, 1911, 3-speed Armstrong, gem, shop-soiled ..... £29 0

MINERVA, 3 1/2 h.p., h.b.c., magneto ignition, spring forks ..... £15 0

UMPH, 1907, 3 1/2 h.p. .... £20 0

50/- down and 5/- per week secures the following:

ADRANT, 3 1/2 h.p., h.b.c. .... £10 10

IX, 2-cylinder ..... £16 0

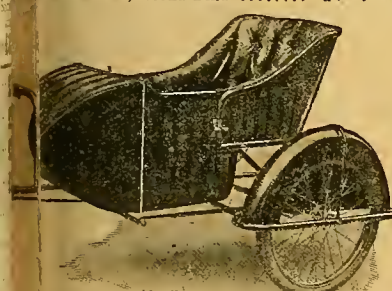
IX, 3 1/2 h.p. .... £16 0

ADRANT, 2 1/2 h.p., spring forks ..... £3 0

IX and Forecar, complete, with free engine, h.b.c. .... £14 0

Motor Cycles, Kerry and Lloyd's, want slight repairs ..... £5 0

Quinca Sidecar, second-hand ..... £4 4



as Illustrated, 10 GUINEAS.

Write for Sidecar Catalogues.

claim to have the finest and strongest Sidecar on the market. No fear of wheel dropping off.

WATFORD SPEEDOMETERS

All models Liberal allowances made on old ones.

Postage, post paid ..... 2/10

SCOTT, Victoria Motor House,  
Powell Street, HALIFAX.  
Telephone—433 National.  
Telegram—SCOTT, Powell Street, Halifax."

## MOTOR BICYCLES FOR SALE.

DOUGLAS, 1912, Model K, condition as new, not ridden much; £42.—Hudson, surveyor, Skegness, 14801

F.N., 5-6h.p., 4 cyls., central intake, footboards, splendid condition; offers, exchange.—White, 16, Main Ridge, Boston. [X2755]

2 h.p. 1911 Hauber, new condition, tyres very good, new belt; £26.—Apply, D. H. Drakes, Tathwell Grange, Louth. [X2687]

1911 Triumph, clutch model, overhauled recently, lamp, horn, spares; £40.—Robertson, Oadby, Leicestershire. [X2875]

3 1/2 h.p. 1910 Triumph, fixed engine, splendid condition; a bargain, only £28.—Alf. Spurgeon, 96, Far Gosford St., Coventry. [4751]

1911 T.T. Triumph Motor Bike, very fast, like new; only £35.—Alf. Spurgeon, 96, Far Gosford St., Coventry. [4752]

3 1/2 h.p. Condor Motor Bike, mag.; very cheap, only £21.—Alf. Spurgeon, 96, Far Gosford St., Coventry. [4753]

PREMIER 3 1/2 h.p., 1909-10, very powerful, take sidecar, carefully used, new Palmer cord, Dunlop front, perfect; £21.—Kellam, Runcue. [X2756]

BRADBURY, 3 1/2 h.p., 1912, new May, 2-speed gear, free engine, belt drive, as new; £40; perfect.—Steward, Conservative Club, Rugby. [X2763]

RUDGE, 1912, new, free engine; list price £55, will sell at reduced price, a bargain preferred.—Box LE555, The Motor Cycle Offices, 20, Tudor St., E.C. [4690]

SPECIAL Clearance Sale of new and second-hand previous to stocktaking; now is your chance for genuine bargains; must be cleared: no reasonable offer refused.

NEW 1912 2 1/2 h.p. Ariel Lightweight, free engine, 3-speed; list £52/10, accept £45.

NEW 1912 3 h.p. Twin N.S.U., free engine, 2-speed; list £49, to clear £37/10

ARIEL, 1911, 3 1/2 h.p., free engine, var. gear, 1912 de-compressor, with lamp, horn, tools, practically new, £35, great bargain; another same model, with sidecar, £38/10.

B.S.A., 1911, 2-speed model, £40: New Hudson, late 1911, 2 1/2 h.p., 3-speed, £38/10: Moto-Reve twin lightweight, £18/10.—Falcon Motor Depot, Lezells, Birmingham. [X2024]

ONE Late Pattern Rudge Motor Cycle, fixed engine, quite new, never been ridden, minus tyres; what offers.—Box 1,250, The Motor Cycle Offices, Coventry. [X2649]

DOUGLAS, late 1910, lamp, horn, mirror, and accessories. Palmer cord on back, engine and parts in perfect order; £26, or offers.—2, Olten Terrace, Warwick. [X2921]

BRADBURY, 1912, 2-speed, chain drive model, £30; also standard, £38.—P. J. Evans, Sparkhill, Birmingham. [4987]

JAMES, 1913 model, with 3-speed gear and chain drive, special Six Days' gold medal machine, overhauled, as new; £50.—P. J. Evans, Sparkhill, Birmingham. [4985]

8 h.p. Matchless, clutch model, new June, 1912, Lucas horn, F.R.S. 1,200ft. eet. all tools, spare valves, hutt-end tubes; any expert examination.—Cock, Millfield, Grimsby. [X2617]

SCOTT Motor Cycle, 2-speed, 2-cyl., 2-stroke, water-cooled, delivered from makers September, 1911, in perfect condition; £45, or near offer.—Quorn Garage, Belgrave Gate, Leicester. [X2549]

5-6h.p. Roc, Peugeot, clutch, Whittle, Druids, Continentals, B. and B., 1911 Bosch, splendid condition; £22; appointment.—Kridge, 28, Anderson Rd., Sparkbr. oct, Birmingham. [X2786]

1912 Rex de Luxe Sidette, 4h.p., m.o.v., free engine, 2 speeds, mag., with art cane sidecar, handsome turnout, nearly new, cost £74, accept £54.—Brown's, 12, Bull Ring, Birmingham. [X2800]

MOTOR Cycle, 1912 model, 2 1/2 h.p. Precision engine, Druid forks, mag., Michelin tyres, practically new; bargain, £26/10.—Brown's, 12, Bull Ring, Birmingham. [X2801]

JAMES, 1911, T.T. model, very fast, 3 1/2 h.p. Bosch mag., Druid forks; bargain, £28.—Brown's, 12, Bull Ring, Birmingham. [X2802]

TWIN Rex de Luxe, 5-6h.p., mag., Roc free engine, 2-speeds, drip feed, spring forks, tyres practically new; sell bargain, £29.—Brown's, 12, Bull Ring, Birmingham. [X2803]

BRADBURY, 1910 model, 3 1/2 h.p., Dunlop tyres, £25/10; also 1910 Bradbury, free engine model, £29.—Brown's, 12, Bull Ring, Birmingham. [X2804]

J.A.P. Motor Cycle, 4h.p., mag., variable gear, Whittle belt, spring forks; bargain, £24/10.—Brown's, 12, Bull Ring, Birmingham. [X2805]

N.S.U., 3 1/2 h.p., mag. ignition, Michelin tyres, recently overhauled, h.b.c.; bargain; £16/10.—Brown's, 12, Bull Ring, Birmingham. [X2806]

3 1/2 h.p. Mitchell, B. and B., h.b.c., low, long handle, 32 bars, Triumph pulley, belt, tools, accumulator, coil, 26in. wheels, tyres, running order; £7/7; exchange.—80, Bridget St., Rugby. [X2653]

TRIUMPH, 1910, splendid condition, practically new Cinciner Dreadnought back tyre, new inner tube, Lucas lamp, horn, new Brooks back rest, spare tyre and belt, tools; £32/10.—Smith, 430, Coventry Rd., Birmingham. [X2834]

## Collier's Motories,

Westgate, Halifax, England.

## 1912 BRADBURY'S.

THE IDEAL SIDECAR MACHINES

The greatest power in single-cylinder machines, giving maximum efficiency and freedom from attention.

3 1/2 h.p., tourist ..... £38 3 1/2 h.p., 2-sp., chain ..... £58 10  
3 1/2 h.p., 2-speed, belt ..... £55 3 1/2 h.p., 3-speed ..... £58 10

VERY SPECIAL EXCHANGE QUOTATIONS.

CASH, EXCHANGE, OR EASY PAYMENTS.

CLYNO, 1912, Twin, 2-speed, new .... Offers.

REX, 1912, 4 h.p. Tourist, 8 1/2 x 95, new ..... £46 0

REX DE LUXE, 1912, 4 h.p., 2-speed, new ..... £56 0

N.S.U., 5 1/2 Twin, 2-speed ..... £26 10

HUMBER, 1912, new 3 1/2 h.p., 2-speed ..... £47 10

INDIAN, 1911, 5 h.p., Clutch, splendid condition ..... £39 10

REX, 7 h.p. Twin, spring forks, very hot ..... £35 10

ANTOINE, 6 h.p. Twin, magneto, spring forks ..... £23 10

REX DE LUXE, 1911 1/2, Twin, 2-speed, new ..... £53 10

REX, 1911, 3 1/2 h.p., Tourist, new and unused, 1912 waterproof magneto ..... £34 gns.

REX DE LUXE, new 1911, 3 1/2 h.p., 2-speed, and new Sidecar, very smart lot, with makers' guarantee ..... 49 gns.

KERRY, 2 1/2 h.p., runs well ..... £8 10

BRADBURY, 2 1/2 h.p., magneto ..... £18 10

REX, 1911, 3 1/2 h.p., Tourist, very reliable ..... £29 10

BAT, 2 1/2 h.p., spring frame ..... £10 10

REX DE LUXE, 5 h.p., 2-speed, Twin, and Sidecar ..... £35 0

MINERVA, 2 1/2 h.p., 2-speed ..... £16 10

REX, 1910, Twin, special finish ..... £29 10

QUADRANT, 3 h.p., with accessories ..... £7 15

REX, 1909, 3 1/2 Tourist, specially good .... £23 10

REX, 5 1/2 h.p., Twin, spring forks ..... £16 10

MINERVA, 4 1/2 h.p., Twin, spring forks ..... £16 10

N.S.U., 5 1/2 h.p., 2-speed, Magneto Twin .. £26 10

MINERVA, 2 h.p., light weight .... £6 10

DE DION, 2 1/2 h.p., spray carburetter ..... £6 10

JESMOND, 2 1/2 h.p., Watawata belt .. £8 10

OLYMPIC, 3 h.p. .... £10 10

MOTO REVE, 2 h.p., single-cylinder, very fine condition ..... £19 10

REX 5 1/2 Twin, free engine, good order .. £18 10

Every offer duly considered.

## TRICARS AND CARS.

3 1/2 h.p. 2-speed HUMBER Tricar, Phelon & Moore gear, seats two ..... £2 10

PHOENIX Forecar, less tyres ..... 17/6

4-cylinder 2-seater WOLSELEY Car, recently overhauled, great bargain ..... £29 10

5 h.p. W.C. 1-speed MUROCAR, open frame ..... £25 0

## COLLIER'S 1912 SIDECARS

"Popular," Clippe, or Continental tyre ..... £5 5 0

"Superbe" type with best tyre, apron, etc. .. £6 6 0

Side-entrance body, as illustrated ..... £7 10 0

Ditto with best coach-built body ..... £7 12 6

Improved Quick-Start body, Cranked Extra Strong Back Axle and Spindle to all Models. Iron front delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

D'scount to trade. Exchanges entertained.

## SPECIAL OFFER.

1912 2-speed 2 1/2 h.p. REX Junior de Luxe. Only had road tests, accept £32 10. Particulars on application



## ROBERTSONS

up to the present have not broken out into lengthy words of self-praise in their advertisements. They have found it quite unnecessary to do so: besides, a couple of columns in "THE MOTOR CYCLE" costs a lot of money (Advertising Manager please note). Their only excuse for doing so now is because their Manager has just had a day's holiday, and he has caught the holiday feeling. He spent part of his holiday in reading the advertisement columns of this journal, and he thought what splendid material was to be found in those columns for an article on **FIRMS**. He was interested to notice that there were "Square" **FIRMS**, "Round" **FIRMS**, "Nice" **FIRMS**, "Straight" **FIRMS** (he knows some crooked ones), "Exclusive" **FIRMS**, "Liberal" **FIRMS**, "Reliable" **FIRMS**, "Superior" **FIRMS**, "The" **FIRMS**, **FIRMS** who "can" supply everything, and a lot that cannot, **FIRMS** who give something for nothing, and quite a number who give nothing for something, **FIRMS** that "satisfy" (sounds like a well-known "breakfast food advertisement"). He noticed that some **FIRMS** had fires (Robertsons have only gas stoves), and others Stock Taking Sales at which splendid motor cycles are offered at ridiculously low prices (that's **ROBERTSONS**), and after his bewildered brain had become normal, he momentarily wondered if it would not pay **ROBERTSONS** to adopt a self-added laudatory adjective prefixed to their name, but these all seem to be booked, so they still intend to be known simply as

## ROBERTSONS

While in this mood, the Manager would like to point out to those artless enquirers who want us to take in part exchange for motor cycles, parrots, pianos, white mice, gramophones, mangles, etc., that they only deal in motor cycles, as they do not like to have to refuse these offers, some of which are really quite generous. Besides, these kind enquiries cost them quite a lot in postage, and, anyway, **ROBERTSONS** like their typists to leave off work at 6-30 p.m. This is rather a rotten advertisement, and it is doubtful if **ROBERTSONS** will repeat it, but any enquiries that do come of it will receive prompt attention, as **ROBERTSONS** have no office canary, or other insect to distract their attention from their legitimate business, and **ROBERTSONS** promise not to break out like this again for a long time, if ever. **NOW** forget all the foregoing, but remember this: **ROBERTSONS** require a workshop of 25,000 superficial feet, and the services of 14 mechanics **SOLELY** for the purpose of overhauling their second-hand machines before they are sold. But in spite of this, **ROBERTSONS** do not charge more than any of the adjectival firms for your motor cycle. You cannot possibly do better than buy from

## ROBERTSONS

157b, GT. PORTLAND STREET, W.

### MOTOR BICYCLES FOR SALE.

£13.—2½h.p. nice looking machine, very low position, long bars, spring forks, just been stove enamelled, new tank, engine re-bushed, B. and B., long exhaust pipe; seen and tried any time.—Particulars and photograph, Hopkinson, Moorland, Retford. [X2722]

**TRIUMPH, T.T.**, 1911, very fast, won hill-climbs recently, splendid condition, rebushed throughout, Dunlops good order, Lucas lamp and generator, mirror, Serpentine, spare Dunlop tyre and belt, belt case and sundries; trial; barziza, £36.—S. Whittle, Great Glen, Leicester. [X1797]

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

**TRIUMPH**, standard, 1910, good order, must be sold; £21.—Binks, Sedgeford, King's Lynn. [4846]

**BRADBURY**, 1912, free engine, fine order; £42, close cash offers considered.—Bailey, jeweller, Soham. [4952]

**TRIUMPH**, 1910, free engine, as new, done small mileage; £35.—Bailey, jeweller, Soham. [4953]

1911 Clutch **Triumph**, lamp, whistle, long exhaust pipe, new tyre; £38.—Young, woodhill, Downes Rd., Luton. [X2766]

**SINGER** Moto-Velo, splendid hill-climber, tyres like new, all accessories; £18.—Humberstone, 7, Bolton Lane, Ipswich.

**DELIVERY** from Stock, 3½h.p. Scott, F.E. **Triumph**, and P. and M. motor cycles.—King and Harper, Bridge St., Cambridge. [X1832]

1912 F.E. **Triumph**, new in crate; owner unable to take delivery; £48, absolute bargain.—Parker and Son, St. Ives, Hants. [4947]

**TRIUMPH, P.E.**, and 2½h.p. Premier, new, trade or retail; 3½h.p. Lincoln Elk, Druids, bargain, £20.—Adams, Motors, Woodbridge. [4975]

**TRIUMPH**, 1911, P.E., Cowey, speed indicator, lamp, horn, and spares, good condition; £38.—Crawley, St. Mary's Motor Cycle Depot, Bedford. [X2619]

**TRIUMPH**, free engine, 1911, ridden 2,000 miles only, Lucas lamp, Jones speedometer, horn, etc., splendid condition—£42.—Robinson's, Green St., Cambridge. [0145]

**MOTO-REVE**, engine and magneto recently overhauled and rebushed: exceptional value, £16.—Robinson's, Green St., Cambridge. [0146]

**ZENITH**, 3½h.p., 1912 Gradua gear, ridden under 1,000 miles, horn, mirror, spare belt, etc.; £44.—Robinson's, Green St., Cambridge. [0147]

**TRIUMPH**, 1907, mag., h.b.c., tyres in good condition; £16.—Robinson's, Green St., Cambridge. [0148]

**DOUGLAS** Agents for Cambridge and Newmarket, Season 1912-13: Robinson's, Green St., Cambridge. [0149]

**DOUGLAS**, model G, in stock, immediate delivery, £41; Douglas, model K, in stock, immediate delivery, £50.—Dan Albone, Biggleswade. Tel.: No. 12. [4798]

1911 Clutch **Triumph**, perfect, £40; 1910 standard **Triumph**, £30; 2½h.p. lady's **Matchless**, £22; 1912 T.T. **Rudge**, £35.—Leavis and Co., Downham. Exchanges. 'Phone: 33 Downham. [4868]

**GET** Your New Motor Bike through Leavis and Co., Downham. Swaps; easy terms.—'Phone: 33 Downham. [4871]

2½h.p. **Triumph**, excellent condition, all accessories, £22; 2½h.p. Hobart, equal to new, very little used, £20; Moto-Reve twin, mag., everything in perfect condition, just overhauled by makers, £18.—Poppell's Motor Cycle Depot, Ipswich. [X2747]

2½h.p. Genuine Chater-Lea-Antoine, Amac carburettor, 22 Bosch mag., spring forks, Clincher tyres 26x24, plating and enamelling like new, separate oil and petrol tanks, in splendid order; bargain, £25; can be seen by appointment.—Varrow, 102, Ballingdon, Sudbury, Suffolk. [4825]

### SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

F.N., 2½h.p., 2-speed, free engine, mag.; £18.—Write, Barratt, 53, Northfield Rd., King's Norton. [4971]

**BARGAIN**—2½h.p. Hobart, good condition, £7/10; 2½ h.p. Werner, £3/5, complete.—Glover, wheelwright, Canton, Cardiff. [X2217]

**DOUGLAS**, 2-speed, June, 1912, very fast, perfect condition, accessories, spares; best offer over £40.—57, Newport Rd., Cardiff. [4928]

1912 4½h.p. Precision Motor Cycle, £33; also art case sidecar, £5; together or separate; trial given.—Rackham, Gilwern, Abergavenny. [X2767]

**WHAT** Offers?—3½h.p. Iry, new September, 1911, all 1912 improvements, like new, had little running.—Wright, Blackwell St., Kidderminster. [X2783]

2½h.p. **Triumph**, batt. ignition, h.b.c., B. and B. carburettor, new belt, in perfect running order; £16, or nearest offer.—Barnes, 38, Monnow St., Monmouth. [X2735]

2½h.p. Late 1910 L.M.C., just had £10 overhaul, new 32 Pedley, all spares, including C.A.V. head light, and L.M.C. free engine attachment; £50.—Glanvason, Pen-y-Cae, Brecon. [4925]

## ROBERTSONS NEW MACHINES

For Immediate Delivery

ALL MODELS OF TRIUMPH, B. DOUGLAS, CLYNO, HUMBER, NORTON, RUDGE, ROVER, P. & NEW HUDSON, ZENITH, ENFIELD, MATCHLESS, SCOTT, SINGER, E.

## SECOND-HAND EVERY MACHINE

OVERHAULED AND GUARANTEED

1912.

1227 **BRADBURY**, 3½ H.P., 2-SPEED, Belt drive, lamp, horn, and tools, like new.

1203 **IVY PRECISION**, 3½ H.P. T.T. MODEL. Ridden about 100 miles.

1181 **HUMBER**, 2½ H.P., 3-SPEED. Footboards. Like new. Lamp, horn, and tools.

188 **NEW HUDSON**, 3½ H.P., 3-SPEED GEAR, SHOP-SOILED ONLY.

96 **NORTON**, 3½ H.P. STANDARD MODEL, SHOP-SOILED ONLY.

1229 **TRIUMPH**, 3½ H.P. Clutch model, in specially fine condition. Lamp, horn, and tools.

1175 **ZENITH**, 3½ H.P. In perfect order, Lamp, horn, and tools.

1147 **ZENITH**, 3½ H.P. Hardly used. Lamp, horn, and tools.

1143 **ZENITH**, 3½ H.P. Senspray carburettor. Like new. Lamp, horn, and tools.

1188 **ZENITH**, 6 H.P. Beautiful order. Lamp, horn, and tools.

1911.

1226 **TRIUMPH**, 3½ H.P. Mabon clutch. Lamp, horn, and tools.

1218 **TRIUMPH**, 3½ H.P. T.T. ROADSTER. Lamp, Cowey horn, belt and tube case, and spares.

1173 **BAT**, 6 H.P. New condition. Lamp, horn, and tools.

1142 **BRADBURY**, 3½ H.P. Fine order. Lamp, horn, and tools.

1202 **BRADBURY F.E.**, 3½ h.p. All accessories.

1154 **F.N.**, 4-CYLINDER, 5-6 H.P., 2-SPEED. Lamp, horn, and tools.

1217 **HUMBER**, 2½ H.P., 3-SPEED. Splendid order, lamp, horn, and tools.

1208 **SCOTT**, 2-SPEED, 2-STROKE, 2-CYL. water-cooled. Suitable for a lady.

1192 **PREMIER, F.E.**, 3½ H.P. Fine order. Lamp, horn, and tools.

1200 **ZENITH**, 6 H.P. Splendid for sidecar. Lamp, horn, and tools.

1149 **ZENITH**, 3½ H.P. Good appearance. Lamp, horn, and tools.

1182 **ZENITH**, 3½ H.P. Exceptionally good order. Lamp, horn, and tools.

1225 **1910 REX**, 5 H.P. Splendid condition. Lamp, horn, and tools.

## MISCELLANEOUS

1091 **1910 SCOTT**, 3½ H.P., 2-SPEED, 2-STROKE. Lamp, horn, and tools.

1211 **4 H.P. STEVENS**, Magneto, H.B. control, spring forks, lamp, horn and tools.

1211 **1910 PREMIER**, 3½ H.P. 2-CYL. Lamp, horn, tools. Most excellent condition.

1220 **SWIFT**, 3½ H.P. WHITE & POPPE ENGINE. Lamp, horn, and tools.

1219 **1908 F.N.**, 4-CYL. 1912 carburettor and clutch. Lamp, horn, and tools. Perfect condition.

1154 **1909 F.N.**, 4-CYL. In perfect order. Lamp, horn, and tools.

## ROBERTSONS

TELEPHONE: MAYFAIR 5767

157b, GREAT PORTLAND STREET, W.



## MOTOR BICYCLES FOR SALE.

2 K Model Douglas, 21 Dunlop studs, Michelin belt, Rom on back, Chaufferer whistle, two power-  
owner; cost £56/10, accept £45.—Protheroe, 5,  
Maven St., Tonypandy, Glam. [4757]

40 1 1/2 h.p. Wolf, just overhauled by makers, 1912  
Annac, h.b.c. mag., re-plated and enamelled; £15  
motor put exchange, 1912 2 1/2 h.p. Enfield or A.J.S.—  
Westgrove, West Hagley, near Stourbridge. [X2832]

## SECTION VII.

cester, Oxford, Buckingham, Berks,  
Mts. and Hants, and Channel Islands.

0 Douglas, perfect condition; £25, or offer.—W.,  
36, Hythe Bridge St., Oxford. [X2204]

UMPH, late 1911, free engine, in first-class condi-  
tion; £42.—Pye, Moreton-in-Marsh, Glos. [4853]

UMPH, 1910, Mabon countershaft var. gear, fine  
running order; £36.—G. Lochhead, Forest, Melk-  
sham. [X2209]

UMPHS, 2 in stock, free engine models, just de-  
livered; no waiting.—Wire: Ginger, Motors, Ban-  
bury. [X2813]

ERVA, 4 1/2 h.p. twin, good tyres and belt, painted  
grey guaranteed; £12/10.—Ralph, Radclyffe, Hyde,  
man. [4684]

FIELD (1912), 2 1/2 h.p., 2-speed, accessories, just  
overhauled by makers; bargain, £35.—Sperry, High  
Wentham. [X2693]

0 Douglas, recently overhauled, new Lyso belt  
and spares, lamp, good condition; £22.—Chappell,  
St. Swindon. [4843]

UMPH, T.T. roadster, 1912, perfect condition;  
£34; would ride 50 miles.—J.E.W., The Cabin,  
Wing Island, Hants. [X2218]

IVERIES from stock Bradbury, chain-driven, 2-  
speed, £55/10; Douglas, model K, £50.—Gough's,  
St. Gloucestershire. [X1789]

UMPH, 1910, clutch model, 3 1/2 h.p., tyres brand  
new, and sidecar, new P. and H. lamp; 40s.—  
Kirk, Blackmoor, Hants. [4748]

UMPH, 3 1/2 h.p., 1909, excellent condition, lamp,  
tools, accessories; £30.—W. F. Hunt, Headbourne  
House, Winchester. [4774]

10 Triumph, recently overhauled and enamelled,  
2 Jones speedometer, whistle, horn, lamp; £32.—  
Adelaide Rd., Andover. [4917]

Triumph, free engine, ready for delivery in 2  
weeks; first cheque for £55, secure same.—  
High St., Fairford, Glos. [4999]

UMPH 1910, free engine model, in beautiful  
order, been nursed, not ridden; honestly with  
£0/35.—Layton's, Bicester, Oxon. [X2768]

UMPH, 1910, standard, first-class order through-  
out; £30.—Layton's, Bicester, Oxon. [X2789]

UMPH, 1911, free engine model, 3 1/2 h.p., excellent  
condition; £35.—Layton's, Bicester, Oxon. [X2790]

N 5-h.p., 1910, 4-cyl., excellent condition, lamp,  
tools, spares, etc., tyres as new; £25.—Layton's,  
Bicester, Oxon. [X2794]

GLAS, 1911, 2 1/2 h.p., 2-speed and free engine;  
£1.—Layton's, Bicester, Oxon. [X2837]

ATAP, 3 1/4 h.p., 1911, not done 3,000 miles,  
speedometer, lamp, horn, tools, spares; 28s.—  
Adelphi Regiment, Bordon, Hants. [4698]

Send T.T. Premier, extra large tank and fillers,  
Druid forks, special engine, carefully used, with  
accessories; £43.—V. Clow, Chesham. [4816]

N 7 h.p., 2-speed, 1912, just bought, only done  
40 miles, as new, guaranteed; what offers?—No.  
55, The Motor Cycle Office, Coventry. [X2677]

0 Sale, 3 1/2 h.p. Rex, in good running order, 1910  
time; will ride 20 miles to purchaser; £12.—  
Enfield, 8, St. Leonard's Rd., Windsor. [4935]

Calthorpe, 3 1/2 h.p. W. and P. engine, h.b.c., as  
new, guaranteed, £30; wanted, 5-h.p. twin,  
£119.—Hayland Rd., Bournemouth. [4916]

UMPH, 3 1/2 h.p. B. and B., 1912 cylinder and  
piston, 2 new belts, several spares; must sell, £25.  
The Beeches, Ash Vale, Aldershot. [4847]

Triumph, recently overhauled, 1912 piston, good  
tyres, accessories, new Dutch c.l.g. £11/11, side-  
car; 8/10.—Lawrence, Bourton-on-the-Water. [X2699]

Premier, 2 1/2 h.p., free engine, done 500 miles.  
In perfect condition; cost £43, sacrifice, £37.—  
1588, The Motor Cycle Office, 20, Tudor St., E.C.4. [4998]

h.p. Kelecom Engine, good tyres, new belt, acces-  
sories, reliable, £13/10, nearest; trailer, 25/-; Pal-  
mer, 26x21, 20/-.—Lawrence, Bourton-on-the-  
Water. [X2698]

0 K Model Douglas, 2 1/2 Dunlop studs, Michelin  
tubes, pan seat, Cowey, Lucas lamp, spares, cost  
£50, perfect and only ridden few miles; no time  
lost; £50; no offers.—Mr. Clegg, Marborough, Wilts. [X2659]

S, 3 1/2 h.p., new May 1911, not done 2,000 miles,  
had with 1912 N.S.U. 2-speed gear, new Kem-  
pallie, engine just overhauled by makers, good run-  
ning order; £28/10.—King, 66, New Rd., Chippingham,  
Glos. [4933]

# Special Bargains

... IN ...

## SECOND - HAND MOTOR CYCLES

### Singles:—

TRIUMPH, 1911, free engine .....	£40
TRIUMPH, 1911, T.T. roadster .....	£32
MATCHLESS, 1911, 3 1/2 h.p., free engine ..	£33
MATCHLESS, 1909, 3 1/2 h.p., 2-speed .....	£26
REX, 1911, 3 1/2 h.p., free engine .....	£28
LINCOLN ELK, 1911, 3 1/2 h.p. ....	£17
F.N., 1 1/2 h.p., magneto .....	£14
DE DION, 2 1/2 h.p., magneto .....	£12
REX, 3 1/2 h.p. 1906, (accumulator) .....	£6

### Twins:—

MATCHLESS, 8 h.p., 1911, 2-speed, double belt drive (special sidecar model) .....	£50
REX, 1909, 5 h.p., de luxe, 2 speeds .....	£28
BAT-J.A.P., 1908, 7-9 h.p. ....	£28

### Sidecar Combinations.

REX, 1911, 5 h.p., free engine, and P.M.C. sidecar, lamp, and horn .....	£38
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TRIUMPH, 1910 late, 3 h.p., free engine, absolute  
new condition, 2 studded Dunlops, ridden 50 miles,  
new P. and H. lamp, accessories, new exhaust valve  
spare.—Kirkby, Blackmoor, Hants. [4747]

DOUGLAS Model K Motor Cycles in stock, ready for  
immediate delivery; £50.—The Motor Cycle Depot,  
43, Palmerston Rd., Bournemouth. Tel.: 1248 Bourn-  
mouth. Telegrams: Aisford, Bournemouth. [2119]

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old, condition as new, ridden 500 miles, new  
Lucas lamp and horn; owner buying heavier machine;  
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Aldershot. [4739]

FOR Sale, 3 h.p. Advance motor cycle, n.t. mag., h.b.c.,  
spring forks, good tyres, and running order, £12;  
also 3 1/2 h.p. Rex tri-car, n.t. mag. and running order,  
£12, or offer.—Wm. Wesley Stoke Goldington, New-  
port Pagnell, Bucks. [X2201]

FOR Sale, Humber 1912 2-speed motor bicycle, new 6  
weeks ago, not done 400 miles, and fitted with  
lamp and horn, also C-vey speedometer; good reason  
for selling; price, £42/10.—Apply, J. E. Walker, Old  
bury Works, Tewkesbury. [4781]

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ARNO, 3 1/2 h.p., T.T. model, in stock; £45.

ARNO, 3 1/2 h.p., Tourist model, in stock; £45.

ARNO, 2 1/2 h.p., T.T. model, in stock; £39.

ARNO Depot.—3 1/2 h.p. Humber, 2-speed, and sidecar,  
lamp, generator, and speedometer, etc.; £40.

ARNO Depot.—4 1/2 h.p. twin Minerva, accumulator;  
£15/10.

ARNO Depot.—5 h.p. twin Kerry, accumulator; £13/10.

ARNO Depot.—Repairs, garage, accessories.—2, The  
Parade, High Rd., Kilburn.—4807 P.O. Hampstead. [4993]

3 1/2 h.p. Rex, in perfect condition, tyres like new, lamp,  
tools, etc.; £12.

2 1/2 h.p. Griffin-Zedel, in good running order and con-  
dition, low frame, h.b.c.; £10.

1 1/2 h.p. Minerva, mag., low frame, horn, lamp, and  
tools; bargain, £9.

2 1/2 h.p. Westlake in good condition, low seat, tyres  
good, horn, and lamp; bargain, £6/10.

4 h.p. L.M.C., very fast and low built machine, new  
tyres, h.b.c., horn, tools, etc., perfect condition;  
£20.—The Westhorne Motor Co., Ltd., 230, Westbourne  
Grove. Tel.: 1606 Paddington. [4890]



## MOTOR BICYCLES FOR SALE.

SCOTT, late 1911, perfect, lamp, horn, speedometer, etc.; £10.

PREMIER, 1912, T.T., 3-speed, special machine, gold medal winner; £48, or near offer.

ENFIELD, 1912, 2½ h.p., 2-speed, chain drive, automatic drip feed; £40, or near offer.

BRAIDURY, 1912, shop-soiled only, unriden; £43.

REGAL-PRECISION, 1912, 4½ h.p., 3-speed, 2½ tyres, demonstration machine, fully guaranteed; £50.

SINGER, 1911, free engine, and sidecar, perfect; £45.

RUDGE, 1912, free engine, shop-soiled only, unriden; £49.

FOR Anything Motorist write, 'phone, or call on

H. C. MILLS and Co., 15, Woodhouse Parade, N Finchley 'Phone: 377. [467]

J.A.P. Twin, 6½ h.p., mag., Chater-Lea fittings, complete with sidecar; £26, rare bargain.

TRIUMPH, standard, 1911, condition as new; £33, any trial.—Anglo-Saxon Motor Co., 100, Bolsover St. [422]

ROC, 4½ h.p., 2 speeds, mag.; accept £19/10 to clear.—Anglo-Saxon Motor Co., 100, Bolsover St., W. [422]

INDIAN, late 1911, 5½ h.p., free engine, condition as new, complete with Chater-Lea sidecar; £48; any trial.—Anglo-Saxon Motor Co., 100, Bolsover St., W. [422]

TRIUMPH, just unpacked, free engine; £55.—Geo Baker and Son, Ealing Green. [489]

2½ h.p. Singer, only soiled; £39, accept £34. — Geo Baker and Son, Ealing Green. [489]

TRIUMPH, 1912, Armstrong 3-speed and free engine, almost as new; £51.

PREMIER, 1912, 2½ h.p., Armstrong 3-speed and free engine, had 5 weeks' wear only, grand lightweight; £37/10.

RUDGE, 1911, standard, in good order, guaranteed, offers. [497]

RUDGE, 1912, multi, and Montgomery sidecar, all in new condition, splendid outfit; £60.—H. V. Moseley and Son, St. Ann's Rd., Harrow. [490]

V.S., 3½ h.p., as new, lamp, spares, etc.; £20.—Roberts 27, Crescent Grove, Clapham Common. [X2765]

LATE 1912 2½ h.p. Twin Hammer, as new, little used; £36.—Deeble, 8, Angelsea Rd., St. Mary Cray. [482]

3½ h.p. Rex, 1911, nearly new, accessories; bargain. £28.—10, Hilda Rd., Mostyn Rd., Brixton. [485]

KERRY, 2½ h.p.; adjustable pulley, spare valves, new tyre, low; £10/10.—53, Brixton Rd., S.W. [482]

KERRY, 3½ h.p., Amac, h.b.c., in good order; cheap; £8/10.—R., 72a, Mare St., Hackney, N.E. [485]

REX, 3½ h.p., Amac, h.b.c., good running order; £9/10.—49, Palatine Rd., Stoke Newington. [486]

TRIUMPH, 1909, new adjustable pulley, Whittle belt, spares; £30, bargain.—53, Highgate Hill, N. [497]

SINGER 1911 Lightweight, perfect condition; to be sold very cheap.—Ketto Motories, Smarden, Kent. [493]

1911 Premier, 3½ h.p., like new; £35, or near offer.—136, Lavenham Rd., Southfields, Wandsworth. [486]

NEW Hudson, 2½ h.p. De Dion; £5/10; good order.—Particulars, P. Stalker, 15, Creden Rd., Plaistead. [474]

1910 Douglas, splendid condition; owner got sidecar combination.—46, Walfrid Rd., Stoke Newington. [X2745]

WANDSWORTH.—V.S., 1910, genuine 7-9 h.p. twin mag., 2 speeds, cream finish, perfect; £38/10.—Below.

WANDSWORTH.—F.N. 1909 Lightweight, mag. h.b.c., spring forks, runs well; sacrifice £12/15.—Below.

WANDSWORTH.—Fairly, late type, 2½ h.p. twin Bosch mag., Druids, first-class order; £14/10.—Below.

WANDSWORTH.—F.N., late model, 4½ h.p., 4-cyls. mag., spring forks, splendid order; cheap; £19/15.—Below.

WANDSWORTH.—Singer, 3½ h.p., Bosch mag., B.P. h.b.c., good order; great bargain. £15/10.—Below.

WANDSWORTH.—Roc, 4½ h.p., m.o.v., mag., 2 speeds, handle starting, fine order; £23/10.—Below.

WANDSWORTH.—N.S.U., 3½ h.p., m.o.v., mag., 2 speeds, free engine, runs well; sacrifice £19/15.—Below.

WANDSWORTH.—F.N., 1911, 6½ h.p., 4 cyls., exchanges.—Wandsworth Motor Exchange, Ebene St., Wandsworth Station. [X284]

2½ h.p. J.A.P. Lightweight, mag., Whittle, guaranteed nearly new, do 40; £22.—76, Herongate, Mano Park. [X281]

DOUGLAS, K, 1912, little used, 2-speed, kick starter lamp, horn; £40.—R., 38, Gleneagle Rd., Street ham. [483]

N.S.U., 3½ h.p., mag., new Dunlops, good condition trial run; 12 gas.—Smith, 8, James St., Walthamstow. [482]

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If you prefer to start with a moderate priced machine, try a little lightweight, a Douglas, or an Enfield, or a Motosacoche. We have some of these ranging from £14 or £15 up to £35 (the last being for a first-class machine of recent date, with two-speed gear etc.) If you want to start with one of the best, then we call your attention to some

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These machines come out cheaper than second-hands when one takes quality into consideration. We have machines that have come to us from various sources, exchanges for other makes, etc. One or two have been used a little, one or two may have been used perhaps a week or two. We have a free-engine Rudge, a three-speed Premier, a 3½ h.p. Zenith, a 6 h.p. N.S.U. (very powerful sidecar machine), a 6 h.p. Zenith, etc., etc.

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## EXCHANGES ARRANGED.

In addition, we are always open to do a deal of one machine for another, you may wish to change a lightweight, for a heavy-weight or vice-versa, or to change a 1910 machine for a 1912, and so on. If so, simply give us particulars of your old machine and either an exact or general idea of what you want to change to and we will give you a quotation.

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35, Colmore Row, Birmingham.

18, Renshaw Street, Liverpool.

261, Deansgate, Manchester.

62, High Street, Leicester.

45, John-Bright St., Birmingham.

## MOTOR BICYCLES FOR SALE

3½ h.p. Minerva, h.b.c., low, fast, reliable, splendid condition, lamp, spares; £9.—Bannister, Burgess Sussex.

2½ h.p. Modern Lightweight, Bosch mag., Dunlop, belt, perfect; £18.—A. Fryett, Ipswich Rd., bridge.

3½ h.p. 1911 Triumph; nearest offer £33, must be bought P.E. model—91, Melbourne Rd.,bourne.

5-6 h.p. Pengeot, Amac, h.b.c., Truffault forks, W belt; £17.—34, Marlborough Rd., Colliers Merton.

6 h.p. Twin French Motor Cycle, spring frame, fast, good tyres, lin. belt; £15.—13, North Barking.

3½ h.p. Clarendon, B. and B., Bosch, Palmer 32 Druid spring forks; £12.—F., 86, Bertram London.

1910 Triumph; £26/10; fine condition, all e lamp; must sell.—Weston, 62, College Harrow.

MOTO-REVE Twin, mag., spring forks, good ation; £12, or offer.—Florsutah, Nightingale Hampton.

MOTOSACOCHE, 1911, 2½ h.p., m.o.v., condition rate; no reasonable offer refused.—Halley, 30, set St., W.

SINGER, 3½ h.p., 1912, free engine model, S used; list £55, sacrifice 33 gas.—12, Street Place, S.W.

TRIUMPH, 1910, roadster, new condition, new l shall, all accessories; £31.—22, Gayton Rd., row-on-Hill.

PREMIER, 3½ h.p., free engine model, 1911, new; bargain, £37.—155, Goldhawk Rd., herd's Bush.

ZENITHS, all models; immediate delivery guaranteed.—South Wimbledon Motor Co., 1, York Wimbledon.

3 h.p. Chater-Lea-Scout, good, strong, reliable machine in splendid condition; £12/10.—L., 33, Earl's Gardens, S.W.

AUTO-CHATER, 3½ h.p., B. and B., h.b.c., running order; £12.—Plumstead, 14, Chis St., Lambeth.

TRIUMPH, late 1909, first rate order through powerful; £26, bargain.—George Hall, Hoathby, Sussex.

TRIUMPH, F.E., 1911, spare tyre, tube, belt, 2 tools, sidecar, new 1912; £42.—49, Albion Stoke Newington.

SCOTT, Sept., 1911, with 1912 lubrication, powerful; bargain, £42.—16, Southdean Ga Southfields, S.W.

1910½ Triumph, immediate sale, splendid running order; trial; what offers?—Butcher, Hog Hawkhurst, Kent.

1912 F.E. Triumph, 6 months' use, 2,500 miles back tyre, lamp, spares, etc.; £45.—Mill 1 Whitfield, Dover.

1910 3½ h.p. Fafnir, Mahon, B. and B., mag., D new tyres, lamp, horn, perfect order; £22; fair, East Molesey.

1911½ Motosacoche, 2½ h.p., free engine, excellent condition, lamp, horn, etc., little used; ch Westhays, Walton.

2½ h.p. Chater-Lea-M.M.C., 26x2½ tyres, perfect running order; £6/15, or offer.—Speckles Church Rd., Acton.

P. and M., 1911, splendid condition, numerous £45; appointment.—Ponzo's, "Cuenchies" Rd., Wanstead Park.

MOTOSACOCHE, 1910, 2½ h.p., new Whittle belt back tyre, excellent condition; £16.—N Robertsbridge, Sussex.

NEW Hudson, 1912, 2½ h.p., 3-speed, new April, new lamp, spares; £40, or near offer.—Cook, James Lane, Leyton.

3½ h.p. Minerva, 1908, £15; 3½ h.p. Triumph, £22; both in excellent condition.—Clifford Braiswick, Colchester.

2½ h.p. Royal Enfield, chain drive, 2-speed gear in June; cost 50 gu., accept £39.—Pearson Elm Grove, Southsea.

F.N., 1912, 5-6 h.p., 4-cyl. model, splendid condition trial by appointment.—T.R.P., "Montrose", lon Lane, Finchley, N.

DOUGLAS D., 1911, standard, splendid condition accessories, only wants seeing; £27.—Pries Newlands Rd., Norbury.

F.N., 2½ h.p., 2 speeds, shaft drive, perfect condition all tools and spares; any trial; £26.—151, 1 Mill, Upper Norwood.

1912 Phelon-Moore, delivered Whitsun, ridden miles, practically new condition; £50.—Mat pawnbroker, W. Craydon.

2½ h.p. Minerva, low, new Dunlop tyres, belt 24 saddle, fast, in new condition; £8.—76, H gate Rd., South Hackney.

KERRY Motor Cycle, with forecarriage attached 2 speeds and free; £12; any trial.—Young Kelsey, Jeweller, Potters Bar.



# THE MOTOR CYCLE

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September 12th, 1912.

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

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### Road Surfaces.

THERE is no doubt that if motor 'bus and char-à-banc traffic continues to increase at same rate as at present something will have to be done to our road surfaces to render them more even, or motor cycling must inevitably suffer. Drivers of light cars are beginning to complain also of the execrable road surfaces that exist wherever these motor juggernauts ply for hire. Our experience of road touring per motor cycle is fairly extensive, as may be imagined, and for two or three years past we have found that wherever a motor 'bus service is running or chars-à-bancs ply for hire roads are in a parlous state. It is absurd to argue that light motor cars and cycles are responsible for this sad state of the roads where 'buses run, for touring cars go everywhere and all roads are not so bad. Take, for instance, the main roads round Bath, where G.W.R. and other 'buses run several times daily over the same route, also the North-west coast, Welsh towns, and the coast roads from, say, Colwyn to Carnarvon; the surface, which was like a billiard table in old pedal cycle days, is now a collection of pot-holes with roughly mended sections; huge boulders being laid to combat, so we are told, the heavy toll laid on surfaces never intended to carry such weights. We refer to vehicles weighing several tons carrying thirty to forty passengers; these cars are also a menace to other forms of traffic. Almost without exception they are driven round sharp corners on narrow roads at too great speed in an endeavour to keep on top gear. Motor cycling in popular parts of North Wales and many such beautiful districts is rendered more dangerous by the overall width of these cars, which have a strong liking for

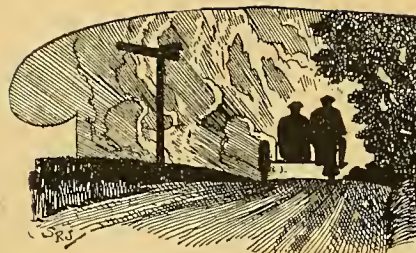
the crown of the road. At present they pay a tax of fifteen shillings per annum. Why no more?

### Rotary Engines.

AS far back as March 7th, 1910, we drew our readers' attention to rotary engines as motive power for motor cycles. This was penned at the time of the introduction of the Gnome engine for aeroplanes. Criticism of our view was naturally forthcoming and was welcomed. We are now pleased to lay before our readers technical particulars of a rotary engine, which is not only extremely light for the power developed, but provides at the same time a gyroscopic action, thus reducing the possibility of side-slip. Without trial of a machine fitted with this engine, it is impossible to say what it feels like to steer it, but we are inclined to think that it should be practically impossible to upset it. It may even be difficult to divert it from a straight line. However, the proof of the pudding is in the eating thereof, and we hope to try one very soon. The gyroscopic effect on the machine under review is obtained by the revolutions of the outside flywheel in one direction and of the cylinders in another, the engine being placed transversely in the frame.

The possibilities in the direction of rotary motor cycle engines are enormous, and the difficulties in manufacture and running are not insuperable. Lubrication appears to give the greatest trouble, but if oil be fed to the cylinders with the fuel, it should not prevent the engine from giving good results. We may be on the verge of an immense development in motor cycle efficiency if the known advantages of the rotary engine are found to carry no unforeseen drawbacks.





## On an Enfield Sidecar in the Six Days' Trial.

**W**E gladly accepted the invitation to occupy the passenger's seat of H. Colver's Enfield sidecar in the A.C.U. Six Days' Trials, as we desired to have some personal experience of this machine. On Wednesday, the third day, we repaired to the Drill Hall in good time and there found Colver awaiting his turn to enter the garage. The fifteen minutes in his case were hardly required. All he had to do was to inflate the Dunlop tyres a little harder owing to the extra weight the sidecar had to carry in the form of a male passenger of about 13 stones, oil the driving chains, etc.; the 6 h.p. J.A.P. engine and the remainder of the combination were all in good fettle.

### Oilskins a Necessity.

Rain was a certainty, so "oilies" were donned at the start, and at 8.59 we got the signal to go. The first 43½ miles, to Wellsway Inn at the top of Cheddar Gorge, was a 20 m.p.h. non-stop section, and included the ascent of Cothelstone Hill, a severe gradient described in our report of the Trials. The particular Enfield sidecar we were on had been returned to the makers as a "bad 'un" out of a batch of six that had been supplied recently. Judging, however, by the way it performed on this hill it must have been reborn in the interval, or Colver's consummate skill as a driver added a modicum of power, for it took the hill in grand style. There was suspicion of clutch slipping on the high gear at intervals during the day, which was perhaps more an aid than a detriment to its hill-climbing powers. At Wellsway Inn we clocked in about eight minutes in front of time.

Bristol was splendidly marked by boy scouts and arrows, and soon we were ascending the long winding hill on to Clifton Down. Close to the summit the engine stopped suddenly. What is it? Only a partial air lock in the petrol tank caused by the driver's coat covering the hole in the filler cap. On over the Downs, more boy scouts, more police, interested spectators, narrow roads, abrupt turnings, and on to the Gloucester Road at Filton.

Heavy banks of clouds denoted rain, and rain it did. Out come the Hutchinson boots. Somewhat regretfully we regard Mr. Alec Ross, dry and snug in the official Humber, as he is whirled past us to the Gloucester control. At Falfield we turn off the main road for Wotton-under-Edge, and after climbing up and running down the Cotswolds, with a splendid view of the Severn Valley and Bristol Channel below, we arrive at the Bell, Gloucester, well in front of time.

### A Diversity of Road Surfaces.

Over this section, comprising greasy oolite surfaces, steep and muddy roads alternating with occasional dry stretches, the Enfield pulled without a falter. After lunch the route lay *via* Birdlip to Cirencester. Colver

told us he had never been up Birdlip before, so we coached him regarding the Knapfand other parts of the ascent. Time was when Birdlip was a hill to motor cyclists, now it is despised as a test; nevertheless a fair number stopped on it that day. Our combination made an excellent ascent, the low gear being, of course, requisitioned on the steeper parts. Colver occasionally gave a dab at the oil pump, but the bulk of the lubrication was effected by the automatic sight-feed oiler, an Enots, which is on the top of the oil tank and is operated by crank case suction. The road through Malmesbury and Chippenham to Bath is undulating, and nothing occurred of note, nor are there any hills until after Bath is passed, when there is an ascent on to the Mendips at Chewton.

### Tea at the Greenore Check.

Cold rain fell here in torrents, but it did not affect the Enfield or its passengers beyond rendering the latter half frozen; a cup of tea at the Greenore check, however, soon put us in a better frame of mind, and with every confidence in our mount the remaining thirty odd miles were completed *via* Wells and Glastonbury with two stops, one to take up petrol at Wells, the other to give a fallen competitor a lift from the sixteenth milestone to the finish. We had started at 8.59 a.m., and were due at Taunton at 8.26 p.m.; it was, therefore, doubtful if we could get in without lighting up. Our driver decided to go through, as owing to our increased load, a fairly hefty male competitor in our lap, the average 20 m.p.h. in the dusk was rendered more difficult.

Overtaking competitors who were a little too much in front of time we romped along in fine style, and Colver was rewarded for his sporting action in assisting a fellow competitor by an arrival at Taunton nicely within the prescribed limit. It is a pleasure to ride with a man like Colver who takes no undue risks, gives one the impression that all is right, yet never loses a minute through excess of caution. Examination of the machine at Taunton showed a remarkably clean engine, and considering the state of the road surface and the weather encountered the rest of the combination had kept remarkably free from mud.

### A Summary of the Journey.

This day's journey of 106½ miles was the longest of the six, and although not embracing the steepest hills encountered during the trial, was sufficiently arduous to prove to the average tourist that the Enfield is a go, anywhere sidecar. Four Enfields entered for the trials, two gained gold medals (Colver's and Jameson's) and one a silver medal. Jameson also was originally awarded two silver cups, but was subsequently deprived of any award owing to a technical breach of the rules.



# MILITARY MOTOR CYCLING NOTES.

By "CELERITER."

## The Warwickshire Battalion.

THE War Office have asked Warwickshire to raise a cyclist battalion, which the County Association has consented to do, and Col. Arthur DuCros, M.P., will be nominated to the command, and he has conceived the idea of mounting this battalion of cyclists upon motor bicycles instead of upon the ordinary push cycle.

The suggestion has been debated in the daily Press, and certain competent military critics have given their opinions in writing, and it is more than probable that the original idea will become somewhat modified. At the request of Col. Ludlow, V.D., who is to be honorary colonel of the regiment, I myself made a few suggestions which I should like to see adopted, because I feel sure that they would help to further the cause of military motor cycling.

## Other Suggestions.

These suggestions provided for the formation of a pedal cycle battalion, two of the eight companies of which would be mounted on motor cycles and armed with Rexer automatic rifles capable of firing 220 rounds a minute per rifle. These motor companies in the scheme of coast defence would be placed in reserve, but with their great mobility they would be able to concentrate quicker at any given point, and with their great fire power they would form a most valuable force to hurl at an invader at the moment he was attempting a landing in ships' boats. I also suggested in order to get these companies as compact as possible that the men should be mounted in pairs, the man with the rifle sitting on a pillion seat fitted on the rear carrier.

Should my suggestions be adopted the following would be the establishment of motor cycles in the Warwickshire Cyclist Battalion: Headquarters 1 motor cycle officer, 1 motor cycle; with each cyclist company 2 motor cyclist orderlies, armed with Mauser pistols, 12 motor cycles; 1 captain, 1 subaltern, 8 N.C.O.'s in each of the two motor cycle companies on single machines, armed with Mauser pistols, 20 motor cycles; 50 men in each of these two companies, i.e., 25 drivers armed with Mauser pistols, and 25 pillion men armed with Rexer rifles, 50 motor cycles. Total, 83 motor cycles.

## Great Fire Power.

The fire power of each of the motor cycle companies would be produced by 25 Rexer rifles if we neglect the 35 officers, N.C.O.'s, and men armed only with Mauser pistols, and would produce a volume of fire of 5,500 rounds a minute, equal that is to say to the fire of 500 infantrymen armed with the ordinary service rifle. Of course, this rate of fire could not be maintained for a long period.

Captain Trapmann, who in his capacity as hon. secretary of the Legion of Cyclists may be considered an authority on the military value of motor cyclists, has, I understand, conferred with Col. Ludlow on the subject of the proposed battalion, and is shortly to meet Col. DuCros also, and possibly this meeting will result in a definite establishment being suggested to the War Office for their sanction. In the meanwhile I would advise all motor cyclists who wish to join this battalion to send in their names either to Col. Ludlow, Warwickshire Cyclist Battalion Headquarters, Birmingham, or to the Editor of *The Motor Cycle*.



A motor cyclist despatch rider in the Army Manœuvres. The messenger has just brought a despatch to the advance guard of cavalry and is awaiting orders.



## A Double Motion Rotary Engine.

**A** IS the flywheel which is attached to the crankshaft, and rotates in an opposite direction to the crank case and cylinders. It is a casting arranged with blades to take the place of spokes which give a cooling effect to the cylinders.

**B** shows the cylinders in section. These cylinders are turned out of solid steel and composed of outer casing, sleeve valve, and inner casing or cylinder proper, which are all secured to the cylinder head cap as shown. The particular features of the cylinders and valves are that they are extremely light, offering very little resistance, and owing to the special arrangement of the valve gear, the valves do not move under load, and their movement is very quick, giving immediate full port areas to the exhaust and induction gases. In the design of the pistons lightness has had every consideration.

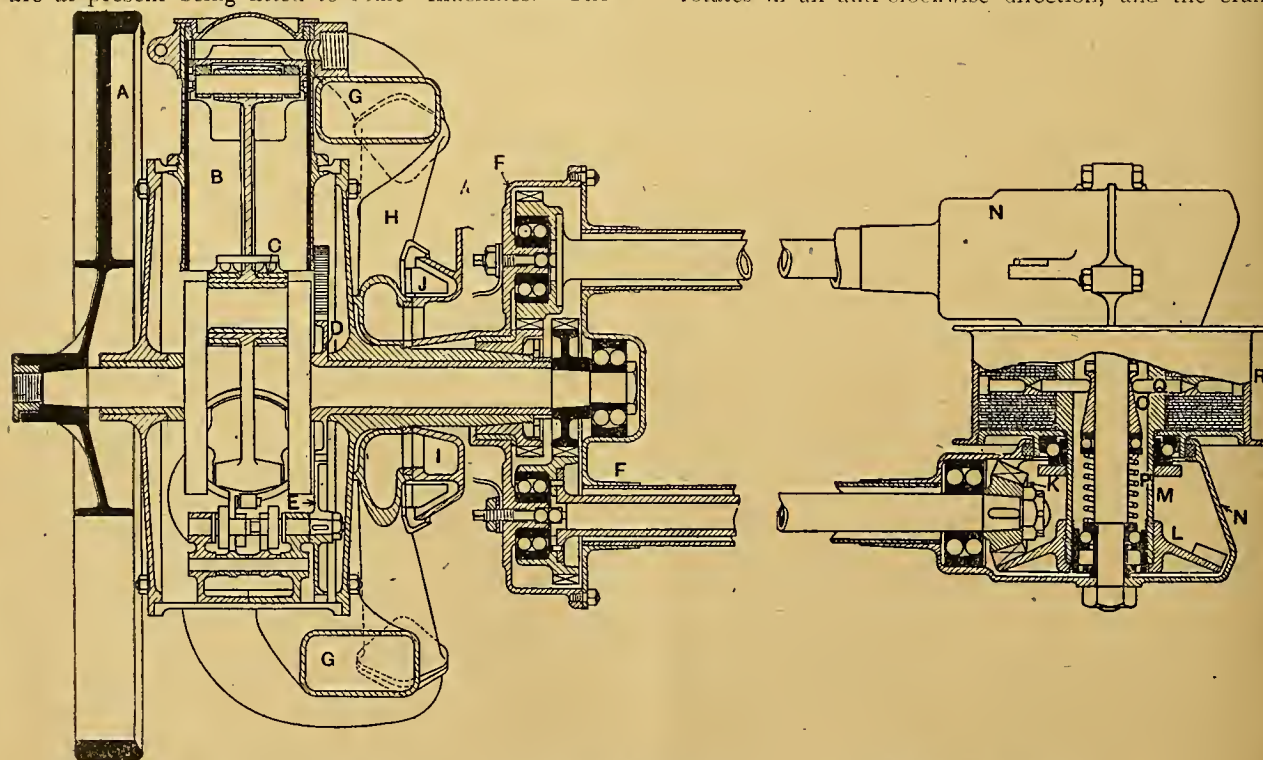
The three connecting rods are fastened to the crank pin by two phosphor bronze retaining rings **C**, which are held in position by two steel spring clips which are sprung over the crank pin and retaining rings and drawn together by a set pin with an efficient locking arrangement for the two set pins as shown.

The crankshaft is of the ordinary balanced type.

**D** is a spur wheel with a long bush attached as shown, which runs into the gear box and has attached to it a lever which gives it a movement of approximately two inches. This is used for altering the setting of the valves for starting up, and is claimed to be an improvement on the new decompression devices, which are at present being fitted to some machines. The

spur wheel meshes direct with the wheels **E**, of which there are three, one for each set of valve gear. This wheel is keyed on to the camshaft as shown, which runs in the two brackets which are bolted to the crank case and carry the valve operating gear. There are four cams on the camshaft, one for operating the induction sleeve in an upward movement, and one for giving it a downward movement, of one cylinder, and the other pair do exactly the same for the exhaust valve of the other cylinder, doing away altogether with springs and giving a positive movement to the valves. It will be seen with this arrangement that three sets of valve gears placed in the space inside the crank case between the three cylinders does all the valve operating that is necessary, and forms a very compact arrangement which is always running in oil. It should be pointed out that the cams operate inside a rocking lever which is coupled to the lugs on the valves by a short connecting rod and gives the desired movement.

The crank case is built of three parts made from castings, one being a cylindrical drum with three flats which accommodate the cylinders and two covers with bearing bushes one for either side. One cover having an extended portion which runs into the gear case, and carries a gear wheel which is geared into a pinion attached to the transmission-shafts. The crankshaft also runs through into the gear case, and carries a similar toothed wheel which is meshed in a similar manner with the other transmission-shaft. The crankshaft rotates in an anti-clockwise direction, and the crank



- A. Flywheel.
- B. Cylinder.
- C. Retaining ring which holds connecting rods to crank pin.
- D. Spur wheel.
- E. Timing gear wheel.
- F. Gear case, one half of which is brazed to the frame.

- G. Rotary silencer.
- H. Three-way induction pipe.
- I. Stationary induction pipe.
- J. Porcelain or ebonite distributor.
- K. Bevel pinions.
- L. Crown wheels.
- M. Sleeve carrying clutch plates.

- N. Rear gear case castings.
  - O. Collar operated by Bowden wire.
  - P. Spring.
  - Q. Wedge pins.
  - R. Rear hub or drum.
- The sleeve and the parts revolving in a direction opposite to the engine are shown black.



### A Double Motion Rotary Engine.—

case in the opposite direction, giving a movement to the transmission-shafts in opposite direction and to the back wheel in the same direction. The gear case is supported to the frame of the machine by two stays going down from the crossbar. It is a crucible steel casting, made in two parts with the cover as shown. The one-half of the gear case F is brazed up solid to the two main bottom stays of the machine.

The transmission-shaft and crankshaft run on Skefko ball bearings, which are accommodated in the gear box, and the crank case runs on the long bush on the crankshaft.

The other end of the engine runs also on a Skefko ball bearing, not shown, which is accommodated in a lug which is brazed to the frame.

G is a rotary silencer which is attached to the strap which encircles the cylinders and receives the induction and exhaust gases, and H is a three-way pipe also attached to the cylinder strap, through which the induction gases pass to their respective cylinders. At the foot of this induction pipe a phosphor bronze face plate with apertures is accommodated forming a movable joint which works against the face of the stationary induction pipe coming from the carburetter.

On the stationary induction pipe I are fitted two brushes for transmitting the high-tension current from a Bosch magneto to the porcelain or ebonite ring J, which is fitted to the three-way induction pipe, and receives three wires from contact pieces leading to their respective sparking plugs.

Lubrication is provided for by means of a hollow crankshaft, through which oil is forced by a plunger pump through the crank pin, which lubricates the big

end and from thence falls into the crank case, where it lubricates the valve gear and other mechanism. It also passes through the two crank webs and lubricates the main bearings. The gear case is lubricated in the ordinary method by grease being forced in by a Stauffer lubricator.

The drive from the gear case is taken up by two bevel pinions K, keyed on to the two transmission rods; these are meshed into two crown wheels L attached to sleeve M, on which are fastened a set of plates, which are accommodated in the main hub and run between other plates fastened to the main hub in accordance with the ideas of the ordinary plate clutch methods. All these gears are enclosed in a bevel gear case casting N, which is brazed on to the back stays of the machine. The clutch is operated by a Bowden wire, which when in tension pulls the collar O against a spring P and so allows the wedge pins Q to fall down and the plates to be disengaged. When the Bowden wire is not in tension the spring P comes into operation, forcing the taper collar O inwards, which in turn forces the wedge pins Q between the two discs so engaging the plates attached to the sleeve M and the main hub. It will be noted that ball bearings are used throughout in the back hub.

Attached to the main drum R is the back rim, which is built up with tangent spokes in the usual method.

The engine in question was run for a period of two hours at 4,000 revolutions on the stand, that is to say, the cylinders revolved 2,000 r.p.m. in one direction and the flywheel 2,000 in the other, which they did perfectly satisfactorily without undue heating or breakdown of any kind, and the lubrication throughout was perfect.

## Formulae for Flexibility Hill-climbs.

THE usual method of deducting the fast time from the slow and giving first place to the rider who can show the greatest difference between his time has the merit of simplicity, but, having said that, we have said all that can be urged in its favour, for in every other respect it is sadly wanting. For instance, two machines of equal weight and horse-power compete; the first does its fast climb in 60s. and its slow in 240s., the difference being 180s., and the slow climb takes four times as long as the fast. We will suppose that the second occupies 90s. and 270s. in its two climbs; again the difference is 180s., but in this case the fast climb is only three times as fast as the slow. This performance is certainly less meritorious, but the figure of merit is the same. The Ayr and District M.C.C., lately adopted a better

formula, viz.,  $\frac{\text{slow} - \text{fast}}{\text{slow} + \text{fast}}$ . The above examples

worked out by means of this formula give .6 for the first performance and .5 for the second. This is certainly an improvement, but it takes no account of weight and horse-power. Now it is obvious that a powerful machine with a light rider should not only be able to make a faster climb than one of less power or more weight, but it should also be able to ascend the hill more slowly without coming to a standstill; therefore under the present conditions powerful machines should win every time.

It is hardly possible to devise a formula which should be fair to all sizes and weights and yet compete with the one in use on the score of simplicity, but we are sure that club secretaries would prefer to take a little more trouble and get fairer results. We therefore suggest the following formula, each part to be worked to three significant figures and the results added together. The first part is to be calculated for the fast time and the last for the slow

$$\frac{1,000 W}{C \times t^2} + \frac{W \times t}{1,000 C}$$

This formula allows for weight and horse-power (or capacity, which should be the same thing), and the example we have given works out as follows (taking the weight to be 350 lbs. and the cubic capacity as 500 in each case). First machine:

$$\frac{350 \times 1,000}{500 \times 60^2} + \frac{350 \times 240}{500 \times 1,000} = .362$$

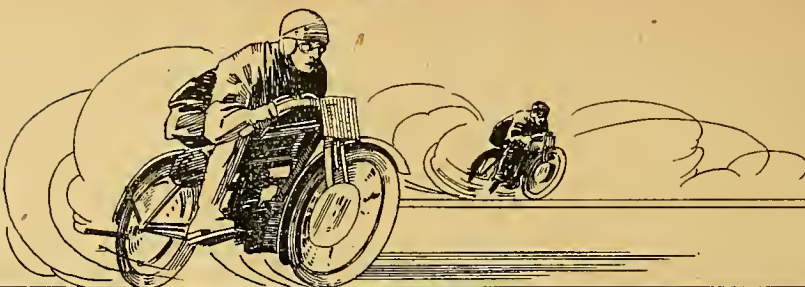
Second machine:

$$\frac{350 \times 1,000}{500 \times 90^2} + \frac{350 \times 270}{500 \times 1,000} = .275$$

For the slow climb  $t$  is taken instead of  $t^2$  because the wind resistance at slow speeds can be neglected. If the weight of the first machine had been 400 lbs. the figure of merit would have worked out to .414. And a lightweight of 350 c.c. and 330 lbs. weight would score .489 on the same time figures, and deservedly so, for it is a finer performance



## QUESTIONS & REPLIES



SRJ

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Machine in Stable.

[?] I am unable to keep my motor cycle and sidecar at home, having no room, but I can hire a disused coach-house near.

There is a stable adjoining, separated only from where the cycle will be by a wooden partition, and I am told that the ammonia fumes from the stable manure will be detrimental to the metal. Do you know if this will be so?—G.E.W.

The fumes from stable manure, etc., do slightly affect the brilliancy of the plating, but they have no other effect on the metal.

### Fitting New Piston Rings.

[?] (1.) How could I fit a new piston ring to my  $3\frac{1}{2}$  h.p. J.A.P. engine, as the compression is weak, and I find this is the fault? Should be pleased if you would give me a little information as to grinding a new piston ring. (2.) What tools should I require?—H.R.

If the piston rings in your engine are really badly worn, the best plan is to send the piston complete to the makers of the engine and let them fit the rings for you. Do not attempt to grind them in, as running them in the cylinder will do all that is required. If you order a standard ring from the makers it is possible that the grooves may be worn and ring will be too slack.

### Single or Twin.

[?] My experience only having gone so far as a Douglas, and the running or "pull" of this being so pleasantly smooth, I am in doubt. (1.) Should I tackle a  $3\frac{1}{2}$

h.p., the cylinder being the usual  $85 \times 88$  for 1912, whether I shall find the pull very much more "jerky," as I travel at no great speed? (2.) If a F.E. pulley has many drawbacks against a hub clutch? (3.) Whether magneto chain drive is likely, within a reasonable running time, appreciably to alter the "timing" by wear, or is it of no consequence? Some good makers, I note, still use chain drive.—A.W.T.

(1.) You would not find a single-cylinder quite so smooth running as a twin, but the modern single-cylinder is well balanced and you would not find the vibration to be objectionable or even perceptible. (2.) No, if well-designed a free engine pulley is as good as a hub clutch. (3.) Chain-drive, if kept adjusted, is quite satisfactory in the case of magneto ignition.

### Kilmarnock to Canterbury.

[?] (1.) Do you think I shall be able to undertake a tour from Kilmarnock to Canterbury with my 4 h.p. Rex and sidecar with fixed gear, myself and passenger weighing about 22 stones? (2.) What would be the average speed per hour you would recommend without overworking engine? (3.) Does a N.S.U. two-speed gear make more noise than a Rex or a Roe hub gear, and does it splutter the oil over belts, etc., when in motion.—H.W.

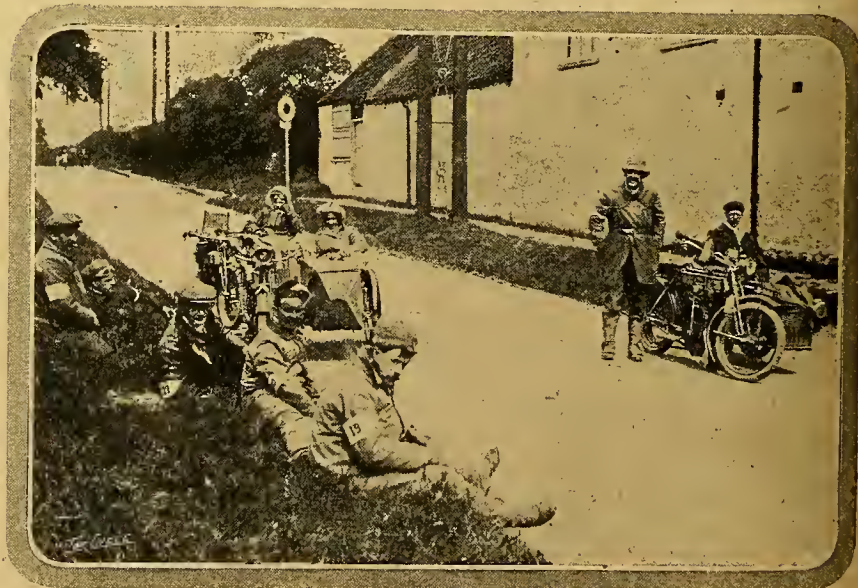
(1.) Yes, we think you could accomplish the journey if your machine is running reliably. The following is a good route over good roads all the way: Kilmarnock, Mauchline, Cumnock, Sanguhar, Dumfries, Carlisle, Longtown, Alston, Middleton - in - Teesdale, Barnard Castle, Scotch Corner, Boroughbridge, Wetherby, Aberford, Doncaster, Bawtry, Retford, Tuxford, Newark, Grantham, Stamford, Stilton, Huntingdon, Saffron Walden, Thaxted, Dummow, Chelmsford, Billericay, Tilbury, by ferry to Gravesend, Rochester, Chatham, Sittingbourne, and

Canterbury. (2.) If you averaged 16 m.p.h. you would do fairly well. (3.) The gear is quite satisfactory and makes no more noise than other fast running gears; it does not fling the oil about, as it is protected with a shield.

### Oilways in Pistons.

[?] I have a 1912 Triumph and would like to know if you advise having oilworms cut in the piston. This tip was given me by a T.T. rider, and the advantages were—(1) very easy starting and (2) more speed. This idea has been adopted by a friend who rides a  $3\frac{1}{2}$  h.p. Precision-engined machine. Both these riders ride high compression engines that will touch over fifty miles, and are "speed" merchants. Before taking their tip I should like your advice. My object in asking is on account of the easy starting. Speed—that is, excessive speed—is not my desire.—A.B.H.

We cannot think that it would be otherwise than beneficial to have oilways cut in your pistons. Provided the job is well carried out no harm could possibly result.



### ESSEX M.C. RUN FROM SNARESBROOK TO YORK AND BACK.

A rest by the way at the top of Gonerby Hill, near Grantham. Reading from left to right the riders on the roadside are: A. E. Brassington, who rode a 6 h.p. Rex sidecar, R. Lord (6 h.p. Rex sidecar), G. E. Revill (6 h.p. Zenith), W. Cooper (3½ h.p. Bradbury), and J. H. Campbell (3½ h.p. Rudge). Standing in the road may be seen C. F. Michell with his 6 h.p. Bat-Jap sidecar.



**Fitting a Sidecar.**

Q

I have a Scott motor cycle with sidecar attached which is difficult to steer. The wheel of the sidecar is quite 2in. behind the back wheel of the motor cycle. Do you think this is the cause of the bad steering? The front wheel of the cycle seems always to be being pulled in the direction of the sidecar. The man who fitted the sidecar says that it is better to have the sidecar wheel running further back than the back wheel of the motor cycle.—M.H.

We should strongly advise you to put the sidecar farther forward. We should think that with the sidecar wheel in front of, or level with, the rear wheel of the bicycle the steering would be better. Of course, with a sidecar machine there is always a slight tendency to pull to the near side.

**Misfiring.**

Q

About a week ago my machine got very hard to start, but when once going went fairly well. Shortly after this it started misfiring occasionally. I put in a new plug, freshened platinum points, and put them closer. The first day I then rode it it went perfectly for ten miles, when it began to misfire occasionally. I put in an old spare plug, which improved matters somewhat, and brought me home. It again got hard to start, but I put points of plug closer. This made it start easier, but misfiring continued at all speeds, and I think the engine gets hotter than it used to. I have had magneto cleaned; the condenser was a little loose, but on trying machine to-day it went as badly as ever.—T.C.

We should be inclined to think the trouble is entirely due to the fact that the fibre ring is worn. If you replace this, we think the machine will run as well as ever. Do not run with the plug points too wide apart. This would cause misfiring at slow speeds and difficulty in starting.

**How to Avoid Bristol Traffic.**

Q

I should be very much obliged if you could indicate a route to avoid Bristol coming from Gloucester. I want to get to Highbridge and avoid Red Hill and Dundry Hill. The map does show a road, but it is not sufficiently plain to enable one to be certain.—J.S.B.B.

You can avoid Bristol by turning right at Filton, about five miles short of Bristol, just when you meet the Bristol trams; the road then bears left, and before you come to Westbury-on-Trip you turn left up a shady lane. This brings you on to Clifton Down, cross this, keeping fairly near the houses at the side, and go down a winding road at the water's edge; then cross the new bridge (not, of course, the Suspension Bridge), and you will find yourself on the Long Ashton Road; go through Flax Bourton, Congresbury, Stock Lane, and Churchill. This place is on the main Bristol-Taunton Road, not far short of the Mendips. If you prefer you can cross the Suspension Bridge (toll) and go down a very steep, short hill to the left. It might be as well to enquire for the new bridge when you get to Clifton Downs, as there are many roads, and it is easy to make a mistake.

**Silencer Dimensions.**

Q

As I understood from *The Motor Cycle* of August 1st that another A.C.U. silencer trial is to be held, I shall be obliged if you will kindly favour me with the dimensions of the final silencer, together with all particulars as to time and place of trials, as I wish to enter for this competition.—J.W.

Full particulars regarding the preliminary report of the silencer trial appeared in *The Motor Cycle* of August 1st, page 871. The committee decided that the silencer which would give the agreed standard of quietness should be made up in a size 5in. in diameter by 12in. long, with an outlet pipe 10in. long, and 3in. bore. Further particulars can be obtained from the secretary of the Auto Cycle Union, 89, Pall Mall, S.W.

**Friction Drive on Small Car.**

Q

I have a desire to fix up a friction drive on a small car, weighing 8-9 cwt. loaded. Will you kindly give me the following information? (1.) What ratios of gear (reverse also)? Back wheels are 28in. (2.) What size should disc and friction wheel be to be most efficient? (3.) Where is it best to put large wheel—on counter-shaft or engine? (4.) With this drive, is the ordinary clutch done away with and the engagement of disc with wheel in lieu thereof?—J.H.S.

(1.) The ratio of gearing depends entirely on the h.p. of engine, but presuming this is about 6 to 8 h.p. the top ratio should be somewhere in the neighbourhood of 5 to 1, and the bottom or lowest ratio about 12 to 1. The reverse, in the case of a friction drive, could not be very much lower than the lowest forward ratio because the diameter of the friction discs defines the gear. (2.) This query we cannot answer, as the efficiency depends on the design of the friction gear. The average size is: disc 2ft., wheel 9in. to 12in. (3.) The large friction disc is usually placed on the counter-shaft. (4.) Yes, releasing friction drum from wheel

acts as a clutch. We are sorry we cannot give you definite replies to your queries on this manufacturing subject, but it is really somewhat without our province. We are willing to give replies to queries on the handling and upkeep of motor cycles, but in the case of designing a vehicle so many things have to be taken into account that it is extremely difficult to give advice which will be of any service in such cases as your own.

**EXPERIENCES WANTED.**

"Newland" (Hull).—G.W.K. cyclecar. "G.F.D." (Stourbridge). -- Morgan runabout.

"A.W.K.S." (Salisbury). -- Enfield Autorette.

"J.S.A.J." (Holloway).—Morgan and G.N. cyclecars.

"R.H.S." (Rochdale).—Variable gear and free engine suitable for fitting to 1908 twin Rex.

"Novice" (Fulham).—1½ h.p. Moto-sacoché, as regards speed, petrol consumption, and hill-climbing.

"D.K." (Wargrave).—6 h.p. 1912 Speed King Rex and 7-9 h.p. Indian. Reliability and speed.

"R.M.D.T."—Clyno and T.M.C. sidecar machines. Wear, reliability, ease of starting and petrol consumption.

"S.V." (Bishop's Stortford).—Douglas 2½ h.p.; two-speed, with free engine clutch, for hill-climbing and reliability.

"J.B." (Ditton).—1912 Scott with sidecar. Petrol consumption, wear of chains and tyres, and particularly as regards keeping in tune.

"Delta" (Australia).—T.M.C. and sidecar, general efficiency and strength for rough touring, and petrol consumption. Also as a solo mount compared with other makes.

If "F.P." (Tilehurst), "W.B.G." (Penrhiwceiber), "M.H.S.K." (Ashted), and "A.B." (St. Leonards-on-Sea) will comply with our rules and send stamped envelopes their queries will be answered.



**AT FULL SPEED UPHILL.**

Half way up Woodway Hill, in the Coventry and Warwickshire M.C. open hill-climb, which attracted 196 entries.



# OCCASIONAL COMMENTS.

By "IXION."

## The Dulness of the Average Hill-climb.

Keen motor cyclist as I claim to be, the average modern club hill-climb bores me to tears. I have attended a few this summer, and except under pressure of business I hope I may never be present at another. For inevitable reasons a dull, straight road is usually selected, and if the rapid ascent of the first two or three machines can still stir a faint thrill in my jaded nature, I grow uncommonly sick of the gatling-gun procession before the entry is worked through. Nor do these climbs retain the old technical interest. Time was when immense gaps separated engine from engine and rider from rider; to-day success is more a question of which expert can coax the greatest excess of power from a dozen engines of different makes, which are normally much of a muchness, and only fractions of seconds divide the half-dozen men at the head of the results list. To enjoy a hill-climb nowadays, one has to accompany a Six Days' Trial and see anxious men with carbonised engines and variable gears essaying the conquest of freak hills. The speed sprint up a short, easy hill commands no more interest than resides in the rivalry of factories and the personal achievements of our friends and acquaintances. I should think the sprint hill-climb will decline in popularity, as was the case with push-bicycle climbs and free-wheeling contests.

## Ugly Transmissions.

Ardently as we have clamoured for weatherproof transmissions, the ugliness of some examples I have recently examined comes as a rude shock. It is a pity that, just when we have evolved graceful machines with artistic outlines and colouring, the demand for a fully enclosed drive should cause the production of such hideousities. I suppose for the moment we must be ready to sacrifice beauty to efficiency, but the most graceful machine becomes a horror when two or three chains are provided with awkwardly shaped metal covers. I wonder if anybody has experimented with an *enclosed shaft* as the primary unit of a two-step drive? A drive consisting of an enclosed shaft transmitting the engine power to a counter-shaft, from which the final drive was by belt, could remain as neat of aspect as any direct belt drive, and I see no reason why such a design need import any practical defects. [The  $2\frac{1}{2}$  h.p. and 4 h.p. Singer's are on the above lines, the shafts being parallel.—ED.] Without doubt the fully enclosed primary chain is far from pretty. Big sprockets are essential to the life of the chain, and the counter-shaft sprocket must be at least twice the diameter of the engine sprocket, if the smaller belt pulley is to be large enough to secure absence of belt slip and prolonged belt wear; the result is a grotesquely large chain case, which forms a blot on the neatest design, so far as looks are concerned. The bearings and tooth-meshing of such a shaft would, of course, be adjustable; and with good steels the wear need neither be rapid nor excessive, though there might be an increase of cost.

## Belt and Chain Tests.

The A.C.U. belt tests proved of very limited value, except to indicate to the general public that, although

$\frac{3}{4}$ in. and  $\frac{7}{8}$ in. belts are frequently supplied on  $3\frac{1}{2}$  h.p. machines, yet when a public trial is imminent, motor cycle makers and belt makers regard 1in. belts as more satisfactory. Why were no chain tests incorporated in the Trial? It would be interesting to have authentic official information about chain wear, and especially about front chain wear, since the combined drive is attracting so many designers, and reliable chain information is almost unprocurable. I meet one man who says he scarcely ever touches either front or back chains; and then I meet another owner of a similar machine who says that he cannot get more than 1,000 miles out of his front chains. If I were a manufacturer in process of selecting a transmission for my 1913 models, I think I should buy three Douglas machines (as being most susceptible to certain obvious experiments). One of them would be direct belt-driven; I should put a three-speed hub in its back wheel, and run the best belt I could get to destruction in the hands of one tester. To another tester I should entrust the second Douglas machine, a standard two-speed model, with combined drive, and I should verify the behaviour of its belt and chain very carefully. The third Douglas machine I should pull about not a little; I should fit a spring device on the engine sprocket, and remove the back belt altogether, substituting a second chain; and the third tester would give these chains a rare gruelling, both with and without covers. At the end of three months I should have spent some money, but I should know all I desired to know about transmission, and my customers would reap the benefit next season. I might even go further, and fit a fourth Douglas with enclosed shaft drive from engine to gear box. Incidentally I should acquire a little special knowledge about the effect different transmissions have upon tyres; but this information would be less reliable, as the tyre wear would depend to some degree on the idiosyncrasies of the testers. As it is, I am a mere quill-driver, tied down to speculation and partial experiments.



G. L. Fletcher (2<sup>nd</sup> Douglas sidecar) with the smallest sidecar outfit in the Essex M.C. London to York trial. On the return journey he collided with a cart near Grantham.





**"D**ARE DEVIL MARTIN," as the famous pioneer is called, has been a winner since the inception of the motor cycle movement, and won the first open race promoted by the M.C.C. at the Crystal Palace in February, 1902.

Since that time he has won over 250 first prizes, and was the first Britisher to cover a mile in a minute. His best work has been done on saucer or grass tracks, although he has also ridden conspicuously at Brooklands. His experience is related by him as follows:

"My most exciting ride?"

Well, I have no hesitation in stating that out of the 400 odd races and record trials I have been engaged in during the past ten years, one ride alone stands out as the most exciting and hair-raising experience of my racing career.

"On April 13th, 1908, I decided to go out for world's three lap records for single-cylinder machines up to 200 miles, and continue up to six hours if conditions were favourable. The machine selected was a single-cylinder 'Matchless-Jap' with a cylinder bore of 85 mm. and a stroke of 75 mm. The brothers Collier, in company with Colver and a mechanic, came over to the track, and like the sportsmen they are rendered me every assistance. All being in readiness, a start was made on receiving the necessary signal from the official timekeeper, Mr. A. V. Ebbelwhite, at 11.30; the machine running well I was soon inside record, only to be put out of action by a bent valve stem. Two other attempts were also fruitless from one cause and another, and it was at last decided to dismantle the machine.

#### A Final Start.

"The machine was finally assembled and ready for the final and last attempt about 3.50, the word to 'go' being given at four o'clock. At the start the weather was bitterly cold, with a strong N.E. wind blowing, several hailstorms also making matters worse, the general conditions being altogether quite unfavourable from a record breaking point of view. The machine ran beautifully, and with great regularity, and in accordance with my schedule I got inside record at 101 miles, time 2h. 15m. 21 $\frac{1}{5}$ s., beat-

ing previous best by 1m. 3s. From this point all three lap records continued to go with monotonous regularity, a stop being made in the meantime at 120 miles to refill tank and change tyres. No trouble was experienced with the machine beyond tightening a belt at 213 miles.

"Soon after 7.30 darkness rapidly enveloped the track, and by 8 o'clock it was almost impossible to see the bankings; a kindly signal warned me to stop. This I neglected, together with other signals, and decided to go on, if possible, for the full six hours. The darkness was so intense that the timekeeper found it impossible to see the machine crossing the line, with the exception of a 12in. long blue flame from the open exhaust of my J.A.P. engine.

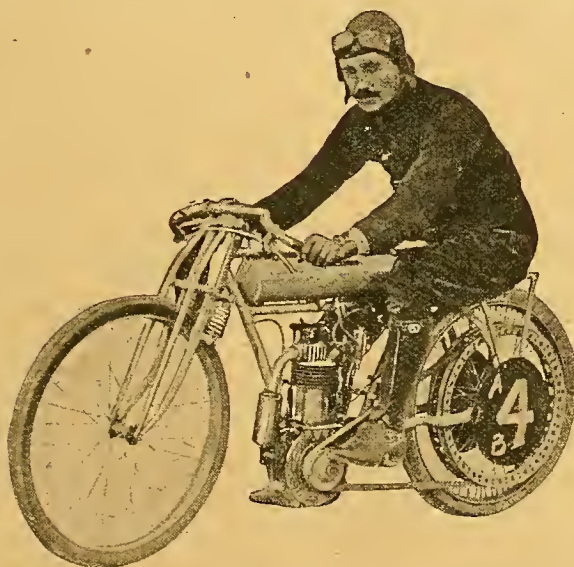
#### Finish in the Dark.

"Two ordinary cycle lamps were therefore brought into use, one being placed on the outside of the finishing line, and the other in the timekeeper's box for the purpose of obtaining exact lap times. Speed on the banking by this time was a matter for extreme care. The lights shot by me each lap, the bankings

being taken at an angle automatically without actually seeing them, and this for nearly two hours!

"I had the satisfaction, however, of also learning from the timekeeper that I had beaten Anzani's continental three lap record by 25 miles and British record by 17 miles, the figures from 200 miles still standing for single-cylinder machines on a three lap track."

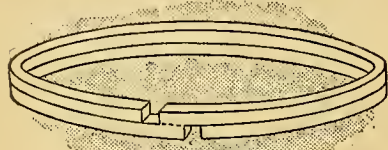
In the judges' report of the tyre trials in the 1,000 miles the set of Rom tyres fitted to R. C. O. Wells's 3 $\frac{1}{2}$  h.p. Bradbury were omitted. These were a 26 x 2 $\frac{1}{2}$ in. cover for the back wheel, fitted on a 2 $\frac{1}{4}$ in. rim, and a 2 $\frac{1}{4}$ in. tyre on the front wheel. The type of tyre used was the combination non-skid. The judges report that the tube was changed owing to a puncture, reason not known. The cover on the back wheel was weighed at the end of the trial, and showed a gain of  $\frac{1}{8}$  oz., and in the case of the front tyre 3 $\frac{1}{2}$  oz. loss. The tubes were both in good order. The front cover was in excellent order, and the back cover showed a slight wear on the tread, but otherwise was in excellent condition.





## LIGHT RECIPROCATING PARTS.

THE advantage in increased engine speed to be gained by light pistons and connecting rods is very great, and numbers of firms have experimented with steel pistons. We understand from the Oxygen Welding Works, Ltd., New Summer Street, Birmingham, that the cause of dissatisfaction in connection with steel pistons has been that hot steel stampings have



The Duplex piston ring.

been used. It was explained to us that when a hot steel stamping is used for the purpose, considerable expansion takes place when the piston has been machined and becomes hot in use owing to the inequality of the metal. The Oxygen Welding Works, Ltd., are making the Simplex patent steel piston from cold drawn weldless steel tubing, and it is claimed by them that this prevents unequal expansion owing to the uniformity of the original steel tube from which the piston is constructed.

Oxygen welding naturally enters very largely into the construction of this firm's

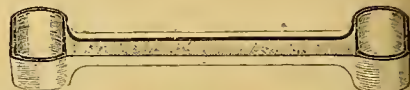
patented specialties, the cap of the piston being welded in to the top of a short length of tubing, the ears or lugs for the gudgeon pin being also attached to the walls of the piston by the same process.

In conjunction with the piston a special ring is supplied called the Duplex patent. Examination of this ring is at first somewhat puzzling, because one wonders how the ring has been made with ground surfaces on the edges where the two circles touch. The explanation is simple, but it is one that has to be explained to nearly everyone who sees it for the first time because slitting and cutting in connection with piston rings is the first process that occurs to one.

The Duplex ring is made by taking two ordinary rings with wide slots and welding them together after the surfaces have been ground dead flat. The weld is at the point marked with dotted line in the sketch. An ordinary 85 mm. piston used in a well-known make of motor cycle was handed to us by Mr. Patrick, the firm's representative. This weighed 1 lb. 10 ozs. He then placed in our hands a Simplex piston of 85 mm. which weighed 13½ ozs., just about half the weight. Several motor cyclists have fitted these pistons to their machines, and practically every one has found a tremendous increase in speed owing to the lighter parts. Another great advantage of the steel piston over a cast iron one is that when a cast iron piston has been

machined it may be dropped on the brick or stone floor of the shop, and being unannealed cast iron, it will immediately break.

If a steel piston be dropped all that can possibly happen is that it may be knocked out of truth slightly, which is easily rectified by grinding. The Simplex piston and Duplex rings are beautifully finished, and the firm are in a position to supply them to fit any make of motor cycle on the market.



Hollow connecting rod, made in two halves and joined by oxygen welding.

Another interesting and most ingenious article made by the same firm is the hollow connecting rod of which we illustrate a section cut away to show the method of construction. This connecting rod is half the weight of an ordinary stamping, and is made by pressing the two halves separately and afterwards welding them together along the centre, oxygen welding, of course, being employed for this purpose. Bosses consisting of short pieces of steel tubing are inserted at each end to form supports for the phosphor bronze bushes. These are also welded into place.

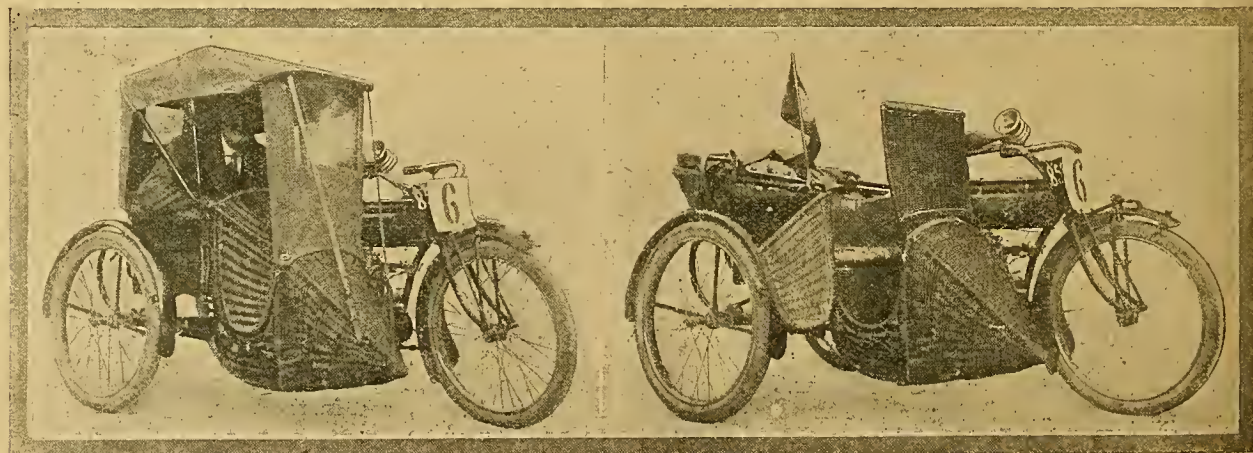
## ENTRIES FOR THE B.M.C.R.C. BROOKLANDS MEETING.

On Saturday next, the 14th inst., the above meeting will take place. One of the principal events is the 150 miles race, which, it will be remembered, was postponed from Saturday, August 24th, and for which the following is a list of entries:

Name, cyls., and make.	c.c.
H. Martin (1 Martin-Jap) ...	339
H. C. Newman (1 Ivy-Precision) ...	346
H. Petty (1 Singer) ...	299
W. A. Jacobs (1 Singer) ...	299
J. P. Le Grand (1 Singer) ...	299
S. R. Axford (1 Martin-Jap) ...	493
J. R. Hayes (1 Hayes-Pankhurst) ...	499

J. W. Woodhouse (1 Regal-Precision) ...	499
H. C. Mills (1 Green-Precision) ...	499
S. F. Garrett (1 Green-Precision) ...	499
V. E. Horsman (1 Singer) ...	499
W. H. Elce (1 Rudge) ...	499
W. Stanhope Spencer (1 Rudge) ...	499
S. R. Cooke (1 Rudge) ...	499
V. Taylor (1 Rudge) ...	499
C. R. Martin (1 Triumph) ...	499
W. Edmondson (1 Triumph) ...	499
W. Dewar (1 Triumph) ...	499
J. R. Haswell (1 Triumph) ...	499
Alf. Miller (1 Premier) ...	499
— Hatcher (1 Premier) ...	499
J. Oliphant (1 Premier) ...	499

J. L. E. Emerson (1 Norton) ...	490
A. B. T. Bashall (2 Douglas) ...	345
J. T. Bashall (2 Douglas) ...	345
S. Wright (2 Humber) ...	350
C. Hobbs (2 Humber) ...	345
S. W. Phillpott (2 Humber) ...	345
H. E. Govett (2 Humber) ...	345
J. Harrison Watson (2 Humber) ...	345
A. E. Woodman (2 Humber) ...	340
R. Nison (2 N.U.T.) ...	350
H. Mason (2 N.U.T.) ...	347
H. H. Clark (2 Corah-Moser) ...	344
S. R. Axford (2 Martin-Jap) ...	498
H. V. Colver (2 Enfield) ...	348
H. H. Huckle (2 Zenith-Jap) ...	494



A NEW SIDECAR, built for Monsieur Chartier Desvarennas, president of the M.C.C. de France. The body is of hasketwork, with a wind-cutting front and side door. A miniature Cape carl hood is fitted, and a wind screen which allows the passenger to enter the sidecar while the screen is fixed in position. The screen is permanently attached to the hood and buttoned to the sidecar front when the hood is brought forward.



# LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

## Waterproof Glue.

Sir,—(1.) Soak glue in water and when soft pour off excess of water, melt the softened material and add bichromate of potash (one ounce melted in half a pint of water), keep in the dark till required, melt by heat and apply.

(2.) Make glue with linseed oil instead of water in the ordinary way.

**MUDPLUGGER.**

## Pen-y-Ball Hill-climb.

Sir,—On examining results of the Mersey M.C. hill-climb at Pen-y-Ball in your paper, August 8th, 1912, I notice you say the only adult passenger was Mrs. Baxter, who went up in a Williamson and sidecar, and the other competitors carried local children. This is hardly correct. I entered my 8 h.p. 1911 Matchless and sidecar and gained the club's silver medal for members, and my passenger was Mr. W. J. Derbyshire, whose weight is about eleven stones. I would not take a child because of the risk.

ALBERT MARSTON.

## Combined Chain and Belt Drive.

Sir,—I have been prevented from answering "Ixion's" few remarks on my previous letter before this, and trust I am not yet too late to be allowed to do so.

It seems that "Ixion" has missed the main argument of that letter. I asked why it was necessary to retain the belt in this "two stage drive"—why not complete the improvement and adopt the complete chain drive?

I still hold the view that the belt is the weakest part of the combined drive, and "Ixion" does not dispute the point. His claim that the greater popularity of the belt proves it to be the best form of drive is no argument at all in its favour. The popularity of the belt has nothing to do with the belt's fitness as a drive. The belt has always been popular, and will remain so for some time. Its popularity is due to several causes quite separated from its own achievements. The first is its cheapness in first cost, the second is that when new it serves the purpose of showing off the capabilities of an engine in a short race or hill-climb equally as well as does a chain, but its life is very short in comparison, but more machines are sold by what they have done on the race track or hill-climbs than by their "road worthiness." Thirdly, the makers will still continue to boom the belt in preference to the chain because of its slight saving in first cost to them. In this the press has generally upheld them, for what reason I cannot understand. [As far as we are concerned we deny this.—ED.]

In the past the only chain-driven machines procurable were either non-racing machines, or ones that had defective chain drives—no slip clutches. To-day things have altered, the chain, notwithstanding these setbacks, is becoming more common every day. I can think offhand of sixteen makers who are making a chain-driven model, and probably there are more. Some of these do not fit slip clutches, which is a mistake. This fitting is as desirable to a chain drive as a correct belt angle on belt and pulley is to the belt drive. These remarks refer to the direct belt drive.

Coming now to the combined drive. The first cause of the belt's popularity disappears. The combined drive and the chain drive cost practically the same. Then why should the makers, if they are at last going to spend the money, give up the more durable and consistent drive? That is my point.

In a great measure I think the makers will not go right at the chain drive because the average motor cyclist has been schooled by the press and hearsay so continuously that the general ignorance in regard to chain drive would affect their

sales. There are only a few firms with strong enough convictions to make chain-driven machines only, and of these the ones that have gone in for the racing side of motor cycling have carried off the most trying records—the T.T. and the Grand Prix of France. The chain has had a certain amount to do with these results.

"Ixion's" reasons for the growing popularity of the combined drive are erroneous. The main cause for this is the growing popularity of the gear box speed gear, and the impossibility of using the belt between the engine and the gear box. As a further illustration of the fallacy of "Ixion's" popularity idea, you have only to go back a few years when the magneto was in a very small minority. The accumulator was the more popular, and, I suppose, "Ixion" would say it was better in consequence. To-day, of course, the magneto is more popular, and has always been better than the accumulator from the very first day it was put on the market. The two systems are to-day practically the same as they were seven or eight years ago. The motor cycling public are longer in discovering the superiority of chain drive, although its superiority has been before them for at least nine years.

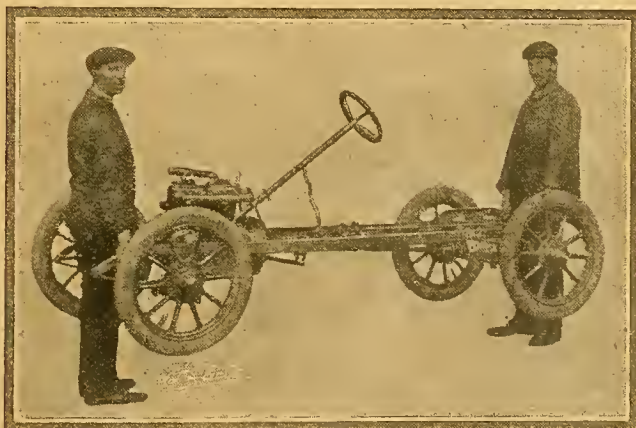
"Ixion" says he once had to adjust his chain eight times in a month. This was very evidently not due to any defect in the chain drive, as he infers, but to the fact that his back wheel spindle was either badly fitted or badly made. Such a fault on a belt-driven machine of "Ixion's," I suppose, would be traced to the correct cause right away.

There are one or two other points in "Ixion's" reply I should like to criticise, but I think this is already too long a letter.

T. F. MAW.

## The Definition of Cyclecars.

Sir,—I notice in your issue of the 29th ult. an article describing the Singer Motor Company's so-called cyclecar. I think most people who know anything about the subject



A proof of the lightweight of the Singer cyclecar chassis.

will agree that it is unfair to describe it as a cyclecar. From the illustrations it appears to be a beautiful piece of work, and I am not saying anything against the car as a car, but I want to bring home to those interested the fact that there is still something lacking in the definition of a cyclecar when a perfect motor car in miniature is labelled with the same name.

JOHN D. ROWLAND.



### Wear of Clutches.

Sir,—We note in your article on change speed gears the writer says that a properly designed clutch should last a season or 5,000 miles. It may interest you to know that the clutch on the Veloce test machine, that is our patent two-speed gear engine with forced lubrication, has now run 7,000 miles. Out of this distance, probably 1,000 miles with a sidecar, and is to-day as good as ever.

We also notice our name mentioned in an article on lubrication. There has not been the slightest hitch with the Veloce test machine, and, as mentioned in the article, the lubrication is perfect. VELOCE, LTD.

### Reliability of Belts.

Sir,—Evidently your correspondent, Mr. Sharrock, has not been fortunate in his choice of belts. I have a 1½ in. Dunlop which has done 2,300 miles on a 6 h.p. Matchless and sidecar by speedometer. It has not broken yet, and has only been shortened twice. There is not a crack in it, and it looks good for a long distance yet. HA 218.

### The Lubrication of Two-stroke Engines.

Sir,—In your report of the recent Six Days' Trials you comment on the smoking propensities of the two-stroke machines.

Undoubtedly, excessive oil consumption is the besetting sin of this type of engine. In their endeavour to ensure a regular supply of oil makers of these machines fit an automatic lubricating device, but the success of this is to a large extent nullified by retaining the frame tubes as an oil reservoir. These tubes represent a tank of a capacity of less than a quart with a superficial area of only a few square inches, but with a height of 14 in. to 15 in., consequently the oil level rapidly descends, giving a constantly decreasing pressure at the outlet to the engine. It thus follows that if the controlling arrangement is correctly adjusted when the oil tubes are, say, half full, with the tubes filled the engine sucks more than it should and *vice versa*.

With the idea of maintaining a more even oil pressure over a longer period I fitted to a 1912 machine an oil tank behind the petrol tank in the space immediately under the saddle. This having a large surface would hold a quart of oil in a depth of 3½ in., and gave a much more regular supply of oil to the crank cases over several hundred miles without re-adjustment.

After a comparatively small mileage (about 800 miles) one of the packing glands on the crankshaft ceased to be compression-tight, and the automatic lubrication on that side was upset altogether. When these glands fail the oil drawn in by the suction stroke is ejected on to the chains by the succeeding compression stroke and very little gets into the crank case at all.

CH. STUART BIRT.

### The Wear of Bearings. Importance of Efficient Lubrication.

Sir,—An article under the above heading, signed "A.G.D.C.," appeared in *The Motor Cycle* for August 23th. This article contained a reference to the Veloce and the W.D. machine. One of the former machines was referred to as having been dismantled after having done much work, and reference was made to the absence of wear in the bearings and of carbon deposit in the cylinder. The writer then went on as follows: "Here, then, is the problem already solved—forced lubrication under a pressure of 10 lbs. per square inch is employed, and bearing wear vanishes to a negligible amount."

While in no way wishing to detract from the merits of this machine, the makers' description of the engine shows that ball bearings are employed on the main engine-shaft and gearshafts, and the oil is mechanically fed into the gearshafts, whence it is flung on to the big end of the connecting rod. The circuit is open-ended, and there can be little or no pressure. So that the writer's statement, although applicable to the W.D. engine, does not apply in the case of the Veloce. We believe we are right in saying that the former engine is the only motor cycle engine employing a complete system of forced lubrication to all the engine bearings. W.D. MOTORS.

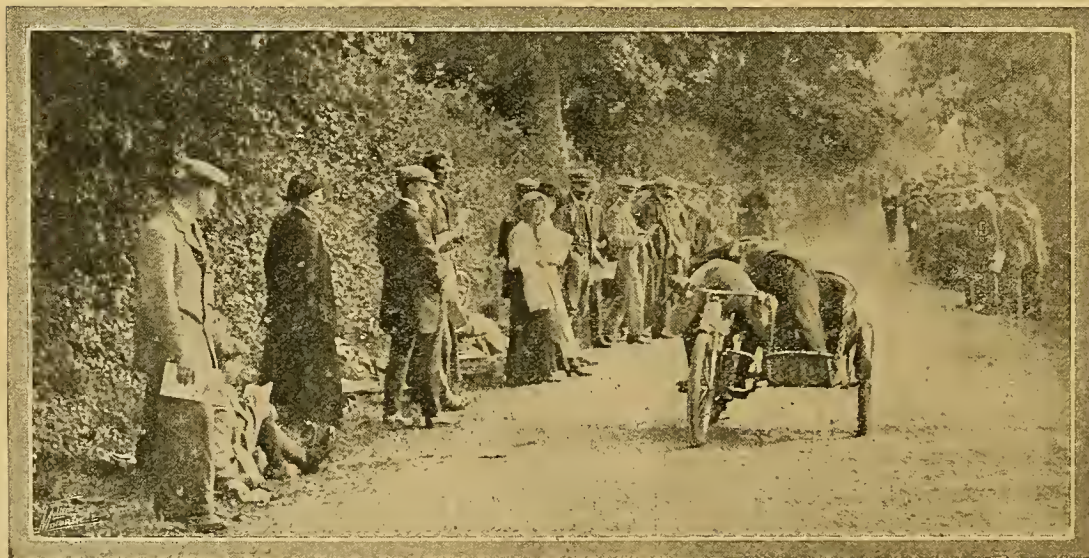
Sir,—The short article by "A.G.D.C." on this subject struck me as being very sound, but he does not go quite far enough, and suggest how forced lubrication is to be adopted with the present type of motor cycle engine.

I have long held the opinion that the only satisfactory way is to drop the old-fashioned built-up crank design and go in for a solid crankshaft drilled for lubrication and an outside flywheel. Only in this way is it possible to get bearings large enough to stand up for 10,000 or so without some wear. There would be the further advantage that white metal could be used in the big end bearings, and moreover the amateur could take his engine apart and reassemble it without recourse to a lathe to centre up his crank and flywheels as is necessary at present.

It can be shown that the solid crank design does not mean increased weight—rather the reverse. There is a great deal of useless weight (from the point of view of utility as flywheels) in the present inside flywheel, which has to be made rather heavy at the web on account of the ends of the crank pin being fixed therein.

With an outside flywheel no such necessity arises—the web can be made lighter and nearly all the weight concentrated in the rim, where it is of the greatest advantage in making a smooth and slow running engine. With the use of variable gear, the necessity for the engine to be able to run slowly when the machine is stationary is obvious. But how few engines can, and what an unpleasant "racing" is usually heard. Here the outside flywheel scores tremendously.

In this connection I may mention an ingenious oil pump for forced lubrication which it seems to me, would be



A single geared 2½ h.p. Ivy-Prec's on sidecar (H. C. Newman driving) in the passenger class at the Coventry and Warwickshire M.C. Open Hill climb. The standing start rule prevented the single geared mounts scoring, as many seconds were lost in starting the machines. Note the passenger's position.



admirably adapted for a motor cycle engine with one-piece drilled crankshaft.

It is embodied in a certain make of two-cycle petrol stationary engine of the displaced pump type known as the Richards engine. It consists of a small oscillating valveless pump situated inside the oil sump, from which it draws oil, and driven by an eccentric formed on the crankshaft. This eccentric and its strap are made to act as the necessary valve. The oil passes up the hollow pump spindle into the eccentric strap, where a "hollow" is formed for its reception. As the eccentric moves round, this hollow registers with a hole drilled in the eccentric, and the oil is forced through this hole and thence into the shaft and so to the bearings. I know, from personal experience, that this system works admirably; there is an entire absence of external oil pipes, all the apparatus being inside the sump. Regulation of flow is obtained by a needle valve throttling the pump suction operated by a milled nut from the outside.

There is no doubt that motor cycle engines do wear their bearings out far too quickly, and there is every reason why they should, with the crude lubrication system makers still cling to.

The only way is to get the flywheels out of the crank case, where they only serve to starve the bearings of oil. It is disappointing to see new firms entering the motor cycle field and still sticking to the old hand lubrication. I do not consider the use of a sight feed pump drip in conjunction with the hand pump any improvement at all. The most urgent reform necessary to-day is the improvement of the lubrication system. Who nowadays would look at a car with only a hand oil pump? Yet in 1912 makers are not ashamed to ask £60 for a machine fitted with this obsolete apparatus.

P.W.M.

#### A Strange Proceeding.

Sir,—The letter in last week's issue of *The Motor Cycle* signed "H. Percival" is really quite alarming. May I ask if he has really stated all the material facts? If so, as a motor cyclist I sympathise with him, and as a solicitor would tell him that the learned J.P. had no more right to extort money from him with threats than a highway robber has. It is, to my mind, a monstrous abuse of petty authority, and I am surprised that anyone should submit to it, even though it emanate from a carriage and pair. Motorists already contribute sufficient to the maintenance of our national tribunals of justice to entitle them to be heard and receive proper judicial consideration therein. E.C.B.

#### Cornering in Cyclecars.

Sir,—“Ixion,” writing in last week's issue of *The Motor Cycle*, makes a statement with regard to cyclecars which we cannot allow to pass uncorrected. He states that the driver of a cyclecar must not corner on these light vehicles as daringly as he would on a small car weighing 10 to 15 cwt. We have little experience with other cyclecars, but with regard to the G.W.K. cyclecar this statement is most emphatically wrong. We believe that it is practically impossible to turn one of these cars over in taking a corner fast. We have made repeated attempts to see if we can get these cars to tip, and have so far only succeeded in wrenching the tyres off the wheels.

By our method of suspending the engine low down in the frame, and seating the passenger also low down, there is not the least sensation of tipping, however fast a corner is taken, and the danger of upsetting a G.W.K. is not so great as of upsetting a heavier car, after having been in the habit of driving one of our small cars, by taking the corners at the same speed that one can safely do with a G.W.K. G.W.K., LTD.

Sir,—Regarding “Ixion's” warning *re* cyclecars in your paper last week, I would like to say that he is quite in error, as several of the four-wheel type I have tried are quite free from anything of the sort.

The Rollo I had was quite good at corner work, and while one does not advocate fast driving round corners, it sometimes happens that a smart move of this sort would save an accident.

I think you should correct this so as to give the public confidence, and if you have doubt in the matter, I would be willing, in the interests of the public, to give a demonstration anywhere.

DENIS ROUND.

#### The Judges' Report on the Six Days' Reliability Trials.

Sir,—*Re* judges' report on the Six Days' Reliability Trials the judges say, “Excessively long belts used on such machines as the Duocar would appear to be a likely source of trouble, owing to the tendency under certain roads and driving conditions towards undue oscillation and possible twisting of the belts.” Now we have not had the slightest trouble with our belts at all, and have never experienced such things as twisting of the belts when driving, or undue oscillation. It is because our belts are longer than those used on a motor cycle that we get better results from them, because, as everybody knows, the short drive employed on a motor cycle is greatly to the disadvantage of the belt, but this extra length, combined with large pulleys on the counter-shaft, removes many of the objections to the useful and reliable employment of belt transmission.

We would respectfully suggest to the judges that their criticism merely represents words and not actual facts, and they have no data before them on which to base such remarks. It is open to anyone to suggest that anything can be “a likely source of trouble,” but the proof of the pudding lies in the eating, and the belt drive as fitted by us gives us no trouble and amply fulfils and justifies its existence.

DUO-CARS, LTD.

[We have received a very similar letter from Mr. L. F. c3 Poyrecane.—Ed.]

#### A “No Tool” Contest.

Sir,—Now that multiple speed gears have rendered even the third-rate motor cycle an infallible hill-climber, and the legal speed limit prevents the engines from being severely tried on the road, some further penalties in the A.C.U. competitions are absolutely essential if the awards of the Union are to have any value in the eyes of the public.

Why not try and wean the motor cycle from the grimy, grease and mud-stained hands of the professional and amateur mechanics, who appear to be the only people who can be relied upon to do a motor cycle credit. A motor car will easily run 10,000 miles without adjustment on the road. Surely it is not too much to ask that the motor cycle shall do one-tenth of this distance without the use of a spanner, after the morning overhaul?

I suggest that the next six days' trial be a “no tool” test. All adjustments could be painted over at the commencement of the test with enamel of a special colour, or sealed where advisable, and a mark or two could be deducted for each nut showing the scratch of a spanner. The tyre test should be developed with a weight or price limit. RIDER.

[Our correspondent is rather severe; we thought the recent 1,000 miles trials more stringent than any car trials we have witnessed.—Ed.]

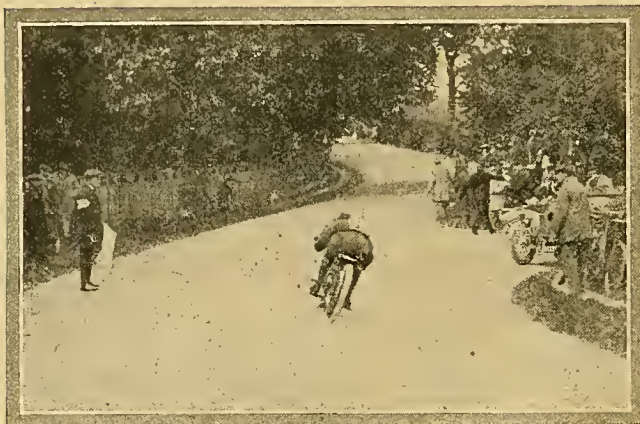


A well known and popular motor cyclist in Birmingham, Gordon E. Craig, who, in addition to being an enthusiastic motor cyclist, is the manager of the Grand Theatre, Birmingham. The photograph depicts his machine, an 8 h.p. Matchless and sidecar, passing through the Wyeh Cutting, over the Malvern Hills. The occupant of the sidecar is Mr. Craig's mother.



# Streatham and District Annual Hill-climb

## AT TITSEY HILL: PROVISIONAL RESULTS.



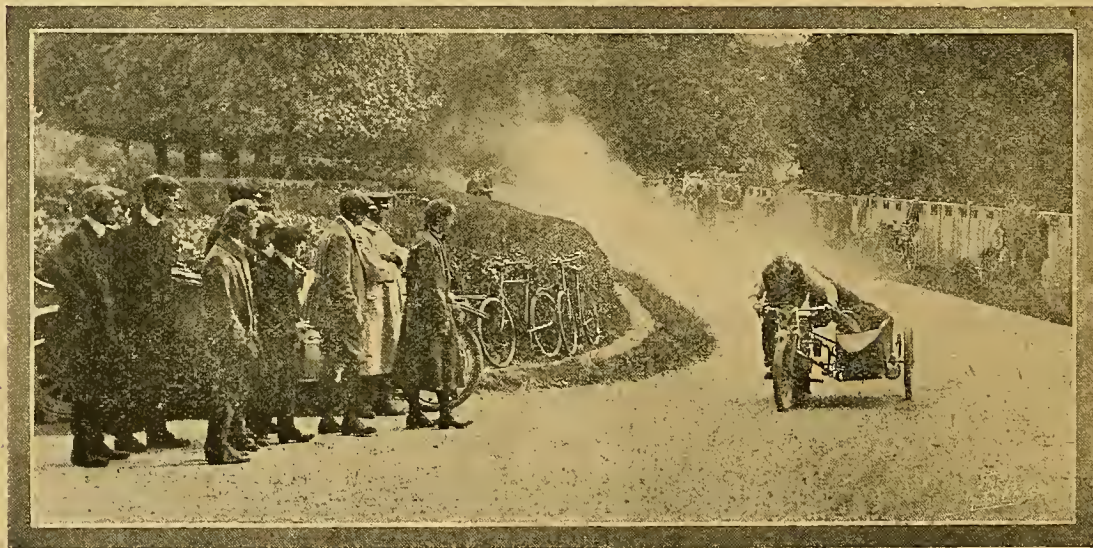
One of the competitors at full speed near the start. The photograph gives a good idea of the S bend.

THE Streatham and District Club were favoured with a fine day for their annual open hill-climb. The venue of the climb had been kept secret till the last moment, and most of the competitors first discovered while weighing in at Godstone that the well-known Titsey Hill had been chosen—a hill of considerable length and said to reach a maximum gradient of 1 in 6.

Close to the foot of the hill lies the village church, and it so happened that a wedding was taking place while the climb was in progress. We hope that the service was not disturbed by the roar of the competing machines, and that the cheer which greeted the happy pair as they left the church may be some consolation for any inconvenience that they may have suffered. Results:

### CLASS I. Touring machines not exceeding 350 c.c.

First up was Wilberforce (2½ Douglas), who made a fast ascent. McNab, on a similar machine, was not so fast, his machine was missing slightly and appeared slightly too high geared on top. Newman (Ivy-Precision) made a characteristic climb, his speed as usual being great. Next came Holloway (Premier), who made a fine climb on the smallest machine in the entry. A. G. Daw (S.I.A.M.T.) appeared to be suffering from belt slip and stopped. What appeared to be quite the fastest climb in this class was made by R. G. Mundy on a 2½ Douglas. Results:



A competitor rounding the first bend of Titsey Hill. The curious position of driver and passenger will be noted, the former apparently riding side-saddle.

### Formula.

	Figure of merit
1. Rex Mundy (2½ Douglas) ...	338
2. R. Holloway (2½ Premier) ...	288
3. H. C. Newman (2½ Ivy) ...	241

### Time.

1. Rex Mundy (2½ Douglas).
2. H. C. Newman (2½ Ivy).
3. V. Wilberforce (2½ Douglas).

### CLASS II. Touring machines between 400 c.c. and 500 c.c.

#### Formula.

A. Draper (3½ W.D.) led the way with a good touring ascent, S. R. Axford (3½ Martin) was very fast, and with R. Croucher (3½ Kerry-Abingdon) and Barnes (3½ Zenith) appeared faster than the rest. Tessier (3½ Bat) came up well and quickly, and Crawley (Triumph) showed up well. The 3 h.p. twin Hazlewood, ridden by Begley, was very quiet. Results:

### Formula.

1. S. R. Axford (3½ Martin) ...	428
2. R. Croucher (3½ Kerry-Abingdon) ...	323
3. S. Crawley (3½ Triumph) ...	311

### Time.

1. S. R. Axford (3½ Martin).
2. S. Crawley (3½ Triumph).
3. R. Croucher (3½ Kerry-Abingdon).

### CLASS III. Machines as Class II. Time.

Axford, who had done so well in the previous class, did not come up, and we heard a rumour that he had been disqualified for riding a stripped machine. Croucher (Kerry-Abingdon), Weatherill (3½ Zenith), Tessier (3½ Bat), Clark (3½ Cerah), and Newman (3½ Ivy-Precision) all made fast climbs. Results:

### Time.

1. S. Crawley (3½ Triumph).
2. } R. Croucher (3½ Kerry-Abingdon).
} K. H. Clark (3½ Cerah).

### CLASS IV. Touring machines between 500 and 1,000 c.c.

#### Formula.

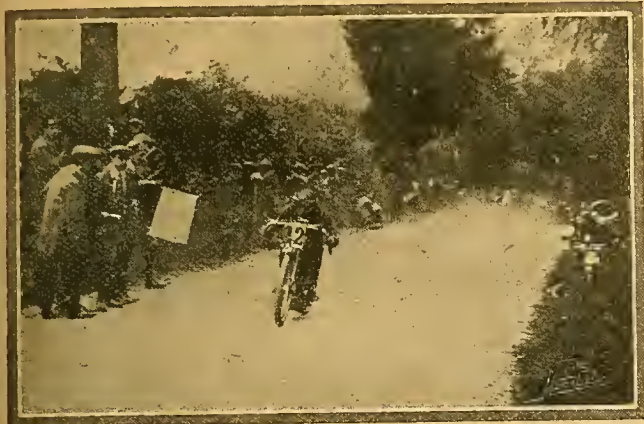
The big Zeniths made a fine show, Barnes and Griffith going great guns, while there appeared to be very little difference between the pace of the Hunter brothers, mounted, G. F. on a 7 Zenith, and A. R. on a 5 Zenith. A da Silveira (7 Indian) appeared to be overgeared, a mistake which was common throughout the day. Results:

### Formula.

1. A. R. Hunter (5 Zenith) ...	301
2. S. T. Tessier (4½ Bat) ...	273
3. G. Griffith (8 Zenith) ...	242



Streatham and District Annual Hill-climb.—



S. T. Tessier (3½ h.p. Bat-Jap) travelling well in the 500 c.c. class.

*Time.*

1. S. T. Tessier (4½ Bat).
2. A. R. Hunter (5 Zenith).
3. G. F. Hunter (7 Zenith).

CLASS V. Any machine not exceeding 350 c.c. Time.

In this class Wilberforce and Mundy were the most noticeable. A new machine, the 2¾ Caeco, ridden by H. P. Storey, made its *début* in this class. Unfortunately, it appeared to be suffering from over-lubrication, but, though misfiring badly, it made quite a fast ascent. The engine was a 2¾ overhead valve J.A.P., and was mounted in a racing frame just big enough to surround it. It had no exhaust pipe, and was fitted with a Longuemare carburetter. Its appearance was striking—so was its exhaust. Results:

*Time.*

1. Rex Mundy (2¾ Douglas).
2. H. C. Newman (2½ Ivy).
3. H. P. Storey (2¾ Caeco).

CLASS VI. Any machine up to 500 c.c. Time.

Axford again put in an appearance, and made a very fast climb, as did Tessier, Newman, and Mundy. Soresby (L.M.C.) and P. Hamshar (Eagle) both seemed to be over-gear. E. W. Russel had a strange exhaust pipe fitted to his 3½ Rover; it extended to the rear of the machine, and was brought up under the carrier, being flattened at the end and drilled all over. Results:

*Time.*

1. S. R. Axford (3½ Martin).
2. S. Crawley (3½ Triumph).
3. S. T. Tessier (3½ Bat).

CLASS VII. Any machine up to 1,000 c.c. Time.

Barnes (8 Zenith) made a fine climb and Tessier (4½ Bat) was very fast. Newman, this time on a 3½ Ivy, made a good ascent and then came H. Reed (8 Dot). After his performance last week at the Coventry and Warwickshire climb we expected something sensational. He got away with a roar, but as he passed us we noticed a slight miss, which sounded rather like too little petrol. As he went out of sight he cut out or else his engine faltered, we were unable to determine which, and this continued intermittently to the end of his climb. We missed Holloway's 3½ Premier, which had been smashed up by a cart backing into it. G. F. Hunter started well, but his engine began to misfire badly, and we suspected that the petrol was not turned on, as we saw his hand by the tap, and almost immediately the machine shot away again. A. R. Hunter dropped on to one cylinder before he was half way up, and continued the climb in this condition. Another fine ascent was made by the rider of an 8 Zenith. Results:

*Time.*

1. F. W. Barnes (8 Zenith), fastest time of day.
2. S. T. Tessier (3½ Bat).
3. E. D. Johnson (8 Bat).

CLASS VIII. Sidecar machines, passenger to weigh not less than ten stones. Formula.

Barnes, as usual, tore up the hill. B. Pattison and C. F. Malkin, both on 3½ h.p. Triumphs and sidecar, made fine climbs, the latter being the faster of the two. K. H. Clark (3½ h.p. Corah) had geared his machine too low, with the result that the belt bottomed and slipped, causing him to stop about half-way up. Results:

*Formula and time.*

Figure of merit.

- |                                |     |     |     |     |
|--------------------------------|-----|-----|-----|-----|
| 1. F. W. Barnes (8 Zenith sc.) | ... | ... | ... | 235 |
| 2. G. F. Hunter (7 Zenith sc.) | ... | ... | ... | 212 |
| 3. G. Griffith (8 Zenith sc.)  | ... | ... | ... | 180 |

CLASS IX. Cyclecars. Formula.

There were five entries for this class, and only the Roilo failed to appear. It was difficult to say which was the fastest ascent, but all the machines passed going well. R. F. Messervy carried a mustard tin as a mascot. Results:

*Formula and time.*

Figure of merit.

- |                        |     |     |     |     |
|------------------------|-----|-----|-----|-----|
| 1. J. T. Wood (G.W.K.) | ... | ... | ... | 100 |
| 2. Auto-Carrier (A.C.) | ... | ... | ... | 61  |
| 3. R. Messervy (Duo)   | ... | ... | ... | 50  |

CLASS X. Variably geared touring machines up to 1,000 c.c.

Formula.

Tessier, Mundy, and Griffith made the most noticeable ascents, though the smaller machines performed remarkably well for their size. A long wait and much amusement was caused during this class by a large motor van sticking on the hill. It required much hard pushing by some of the spectators to get it up, and one marshal preceded it with an official red flag. Throughout the day much inconvenience was caused by the traffic on the hill, and it is a pity a more secluded hill could not have been found. However, the hill has so many advantages that they counterbalance this one grave defect. Results:

*Formula.*

Figure of merit.

- |                             |     |     |     |     |
|-----------------------------|-----|-----|-----|-----|
| 1. F. W. Barnes (2½ Zenith) | ... | ... | ... | 174 |
| 2. Rex Mundy (2¾ Douglas)   | ... | ... | ... | 150 |
| 3. S. T. Tessier (3½ Bat)   | ... | ... | ... | 124 |

*Time.*

1. G. Griffith (8 Zenith).
2. S. T. Tessier (3½ Bat).
3. Rex Mundy (2¾ Douglas).

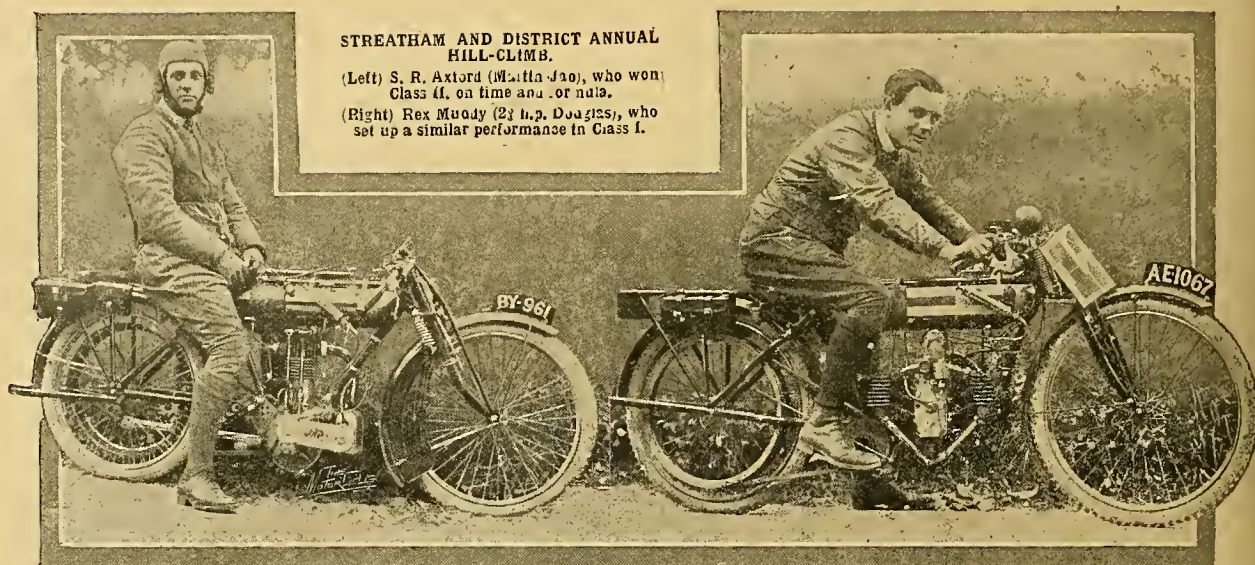
The formula used was that recommended by *The Motor Cycle*,  $\frac{W}{C \times T}$ , except in Class X., where the formula  $\frac{W}{C \times T}$  was tried.

For the purpose of preventing the addition of extra weight with a view to improving the figure of merit on formula, the Streatham and District Club allowed only 140 lbs. to count in Class I., 200 lbs. in Class II., and 250 lbs. in Class IV., no matter what the machines weighed.



F. W. Barnes making a fast ascent on his 3½ h.p. Zenith.





## STREATHAM AND DISTRICT ANNUAL HILL-CLIMB.

(Left) S. R. Axtord (2 1/2 h.p. Douglas), who won Class II, on time and on a mile.

(Right) Rex Moody (2 1/2 h.p. Douglas), who set up a similar performance in Class I.

## Flying Kilometre Speed Trials.

The members of the Sheffield and Hallamshire and Leeds Motor Cycle Clubs held a very interesting speed competition on the 7th inst. in Stapleton Park, the private grounds of Mr. Hope Barton, Pontefract. Electrical timing was used. Results:

Class I. (standard lightweights).—1, J. Haslam, Sheffield (2 1/2 Douglas); 2, Fred K. Langton, Leeds (2 1/2 Hazlewood).

Class III. (standard singles).—1, S. Sawyer (3 1/2 Premier); 2, T. W. B. Durant, Sheffield (3 1/2 Norton).

Class IV. (T.T. singles).—1, Chas. Benn, Leeds (3 1/2 Triumph); 2, T. W. B. Durant, Sheffield (3 1/2 Norton).

Class V. (standard multi-cylinders, unlimited capacity).—1, J. Haslam, Sheffield (6 Zenith); 2, F. W. Roberts, Leeds (6 Zenith).

Class VI. (T.T. multi-cylinders, unlimited capacity).—1, F. R. Roberts, Leeds (6 Zenith); 2, J. Haslam, Sheffield (6 Zenith).

Class VII. (single-cylinder sidecar machines).—1, J. J. Kelly, Sheffield (3 1/2 Bradbury); 2, W. S. Clarke, Sheffield (3 1/2 Rudge).

Class VIII. (twin-cylinder sidecar machines).—1, C. P. Finn, Leeds (6 Enfield); 2, J. Haslam, Sheffield (6 Zenith).



Group of members and friends of the Leeds and Sheffield and Hallamshire M.C.C.'s at the inter-club speed trials in Stapleton Park.

## A West of England Inter-club Match.

The Bristol M.C.C. and the Bath M.C.C. had an inter-club match on Saturday, the 7th inst., over a non stop course of forty-seven miles in the neighbourhood of Bath in which about fifteen hills were observed, all with single figure gradients; more severe than Thursday's route in the Six Days' Trials. The result was a win for the Bath Club, in consequence of which the Bristol team, as losers, had to pay for their own and the winners' dinners.

J. B. Kellar, Bristol, was only one-fifth of a second out on checks, H. Clement completed course on a 4 1/2 to 1 gear, and

C. J. Taylor, weighing 17 stones, on a Scott, completed course non stop.

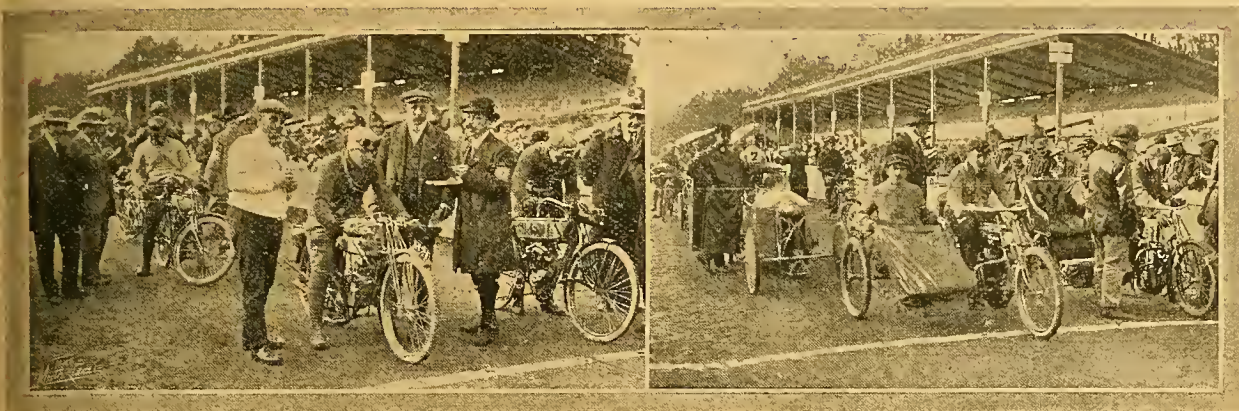
Bath team.—C. C. Wills (3 1/2 Triumph), H. L. Bush (3 1/2 Scott), C. J. Taylor (3 1/2 Scott), R. T. G. Kelly (3 1/2 Scott), A. G. Hayward (4 Singer), W. H. Grant (3 1/2 Rover three speed), and A. Hopkins (5 Clyno and sc.)

Bristol team.—H. Wasley (2 1/2 Douglas), P. Grout (4 1/2 Quadrant), E. P. Haskins (3 1/2 T.T. Singer), T. P. Davies (3 1/2 Rudge Multi), J. B. Kellar (3 1/2 Triumph), H. Clement (3 1/2 T.T. Singer), and T. Ball (8 Williamson and sc.)



# INTERNATIONAL CUP RACE IN FRANCE.

## SUCCESS OF BRITISH MACHINES.



THE START FROM LE MANS.

W. H. Bashall (2½ h.p. Douglas) and a twin Peugeot rider about to be started.  
W. W. Douglas will be seen on Bashall's left.

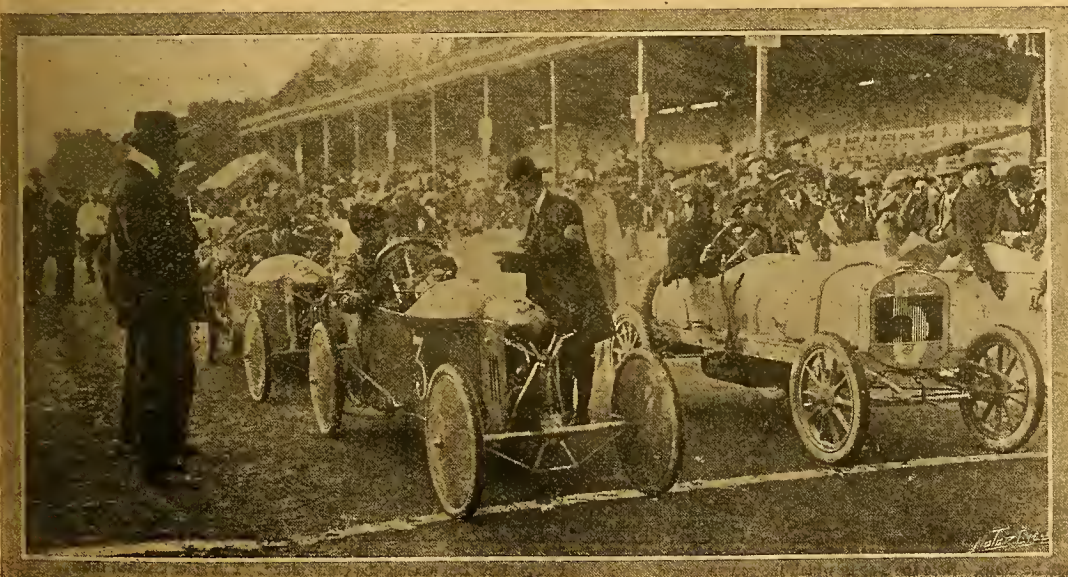
Two of the sidecar machines waiting for the word "Partez."

DOWN in the West of France, in the important provincial town of Le Mans, there exists a sporting organisation known as the Automobile Club de la Sarthe et de l'Ouest, which is responsible for the event we are about to report and the Grand Prix de France, which will be dealt with in to-morrow's *Autocar*. The town is *en fête* and its inhabitants are exhibiting symptoms of that delightful form of lunacy which attacks all Frenchmen on such occasions. The examination of the motor cycles took place this morning in the big public square. A few paving stones were pulled up, a space was railed off, and soon the vicinity became a seething mass of happy irresponsible people who took the liveliest interest in the goings on. Racing motor bicycles and racing motor cars careered round, making the town resound with the noise of their exhausts. Later in the day a racing Bedelia, which showed itself capable of the most unearthly din, went three times round the Place

de la République for a trial trip. People rushed madly hither and thither to escape its mad gyrations, but they did not care a straw, and while such behaviour in England would have caused the offender to be run in, here the greatest interest was evoked.

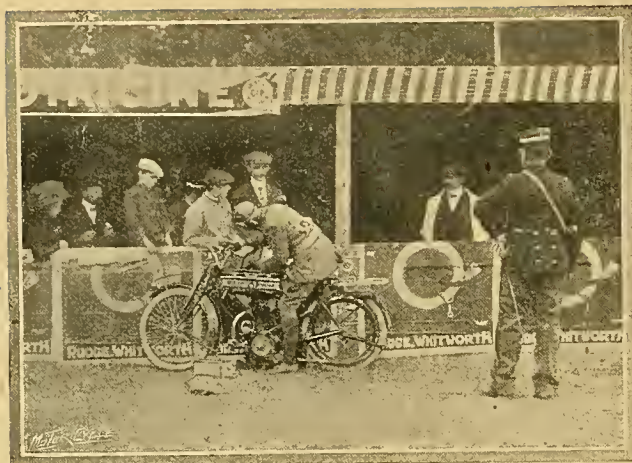
Of the thirty-five starters, eleven ride machines of British origin, three represent America, while the other nationality represented besides France is Germany. The English riders report that the short triangular course is so easy as to be difficult. This seems paradoxical, but as the course is devoid of hills or severe corners the machines will have to be driven hard all the time as at Brooklands. Near the start the surface is rough, but the remainder is excellent.

At an early hour Le Mans was awake, at six o'clock the course was closed, and at a quarter to we left for the Tribune on the gallant little Douglas, which had carried us all the way from Dieppe on the previous day.



Starting the cyclo cars. Two Bedelias and a Cohendet. The latter is the machine on the right.





W. D. South (Rudge) at the replenishing depot at Le Mans. South was second with an average speed of 47½ m.p.h.

### Excellent Organisation.

The stands were opposite the depots, and above the latter towered the great scoring board. At the start the weather was excellent. Several interesting facts are to be recorded. One of the Terrots carried a Continental air bottle containing sufficient compressed air to pump up ten 24 × 2¼ in. tyres and weighing about 2 lbs. English improvements are manifesting themselves slowly on French machines. On the Alcyon and others one noticed handle-bar control and belt rim brakes, but the René Gillet still keeps to automatic inlet valves.

The arrival of the Douglas team created some sensation. W. Douglas arrived with Phillips on the carrier, and W. H. Bashall turned up with his carrier loaded with enormous petrol funnels. His machine was fitted with a large pad or cushion on the top tube against which he could lean. The Terrots were neat looking machines with single cylinder engines. The cylinders are inclined and have horizontal fins. The René Gillet sidecar machine was fitted with a N.S.U. gear. The men were started at half-minute intervals, the only absentees being two Griffon riders, one of whom had been called out to do his military service,

and the other who had had a slight accident during practice, the Wanderer, and two Triumphs.

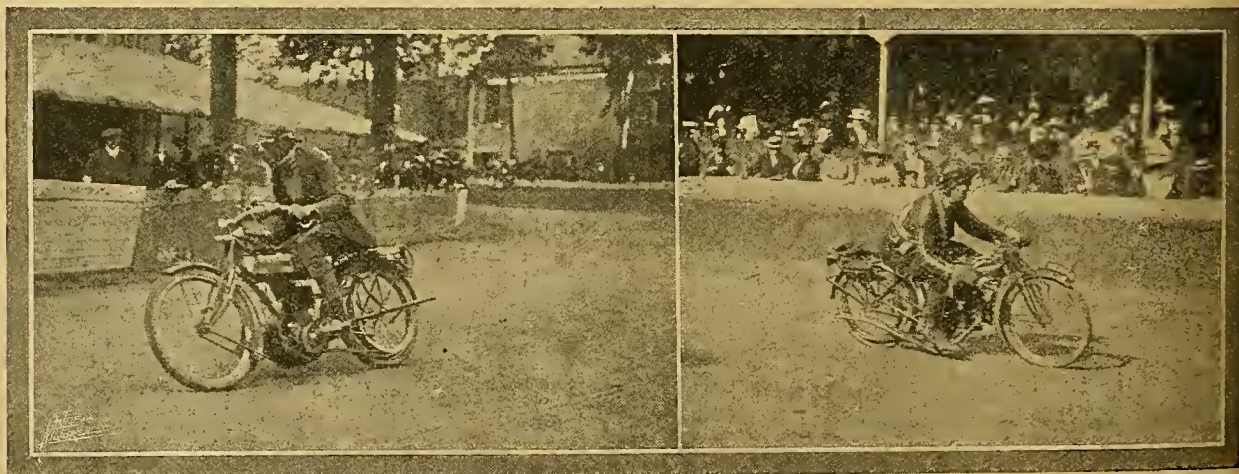
### The Start.

All the British machines started well. Bashall's and Kickham's Douglases were noisy, but Bailey's was notably quieter. Hardly had the last man left before the Bedelia, driven by Devaux, came past the post. Unfortunately in most cases the numbers were illegible, so the progress of the race was most difficult for a stranger to follow. The men carried numbers on their backs, and often wrapped tubes round them, so that they could not be seen. Both the Ridges and the Douglas were going well and Taylor was going at a good speed. Péan's Peugeot was two minutes faster than Bashall in the first round. Franquebalmé (Terrot) stopped near the depot, restarted, and then came back the wrong way of the course, much to the annoyance of the officials. His trouble lay in his oil pump. Grapperon's New Hudson had evidently punctured, as he slowed up at the depot on his second round and picked up a tube. In his second lap, Diosi (René Gillet) stopped at the depot to clean his carburetter. The Douglas team had an interesting system of signalling. Each man was allotted a certain colour, for example Bashall red and Bailey blue. The exhibition of a flag of, say, red denoted it was time for Bashall to fill up at the next lap. Every man had to do his own filling up and adjustments.

As the course was a very short one, the times of every two laps were posted. Kickham stopped at the end of his fifth lap to fill up, and spent a few minutes adjusting his inlet tappet. Several French riders arrived at the depot at the same time. On his second round, Vanella (R.G.) stopped and spent some time adjusting his back wheel bearing. Bloch (R.G.) arrived with his mudguard loose and his hand brake out of gear.

It is reported that Perrin was riding what was practically a pedal cycle frame, and it is said that it broke. He was slightly hurt. Taylor had been delayed by a broken valve and punctures.

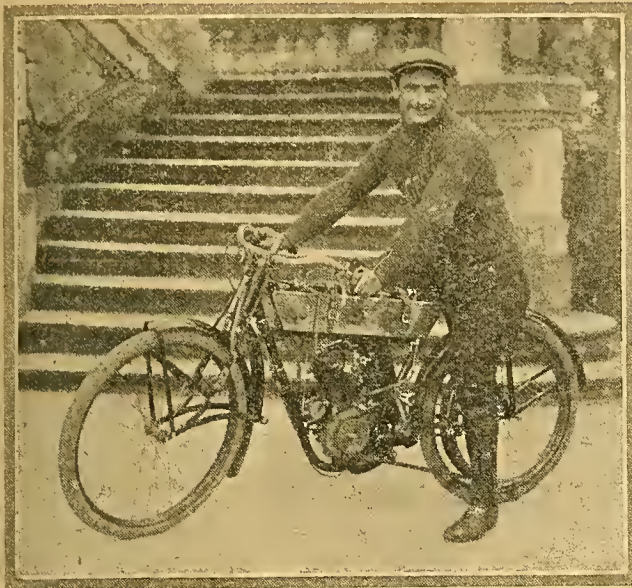
In the passenger class Bourbeau's Bedelia maintained its lead, but Devaux was unable to steer a straight course.



Devay passing through Le Mans. Note the way in which the course is barricaded.

Bailey (Douglas) passing the grand stand. This rider finished third, covering the course in 5h. 19m. 23s.





Pean (twin Peugeot), a consistent performer in French competitions. He was fourth.

FOURTH LAP.			
m. s.		m. s.	
Perrin (Peugeot) ...	55 1	South (Rudge) ...	57 38
Devay (Triumph) ...	56 59	Taylor (Rudge) ...	57 58
Dubose (R.G.) ...	57 30	Péan (Peugeot) ...	59 45
Bailey (Douglas) ...	57 30		
EIGHTH LAP.			
h. m. s.		h. m. s.	
Devay (Triumph) ...	1 48 36	Bailey (Douglas) ...	1 55 41
Dubose (R.G.) ...	1 54 22	Péan (Peugeot) ...	1 56 55
South (Rudge) ...	1 54 51	Bashall (Douglas) ...	1 57 38
TWELFTH LAP.			
Devay (Triumph) ...	2 43 8	Gabriel (Triumph) ...	2 59 30
South (Rudge) ...	2 50 27	Péan (Peugeot) ...	2 52 37
Bashall (Douglas) ...	2 57 15	Dubose (R.G.) ...	2 54 19
SIXTEENTH LAP.			
Devay (Triumph) ...	3 37 45	Taylor (Rudge) ...	3 57 0
South (Rudge) ...	3 45 28	Bailey (Douglas) ...	3 57 9
Péan (Peugeot) ...	3 52 26	Cuzeau (R.G.) ...	4 4 31
TWENTIETH LAP.			
Devay (Triumph) ...	4 33 6	Bailey (Douglas) ...	4 52 25
South (Rudge) ...	4 42 19	Dubose (R.G.) ...	4 55 55
Péan (Peugeot) ...	4 51 40	Cuzeau (R.G.) ...	5 4 32

The fastest lap was made by Devay (Triumph) in 12m. 54s., while South (Rudge) made second fastest lap—13m. 29s.

### British Success.

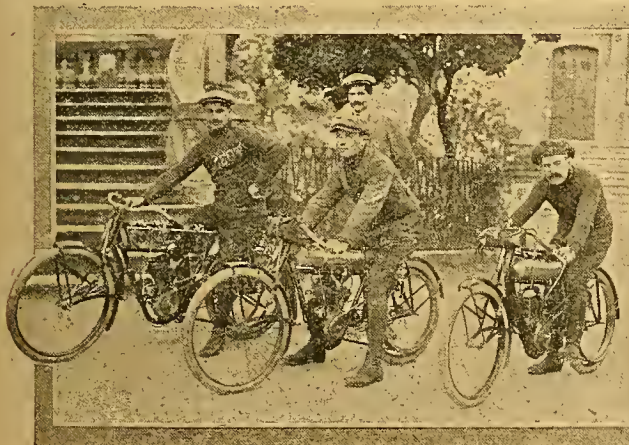
The race resulted in a glorious British victory. The winning machine needs no praise from us. It was an absolutely standard model but minus a front brake, and was splendidly handled by the plucky and skilful Devay. At the grandstand there was nothing much in the way of excitement until near the finish Taylor came by at a terrific rate, and shortly returned the wrong way of the course on the rim, quickly detached the wheel from South's machine, which had just arrived, and dashed off to finish seventh. Bailey broke two tappets, had the carburetter slide jam, and broke a control wire. Bashall broke a valve in the last lap, and another valve broke earlier in the day which jammed in the guide. Scott suffered a broken top tube, but finished ninth. It was a great race, and Great Britain has to congratulate herself on the Triumph, Rudge, and Douglas machines finishing first, second and third.

### Result.

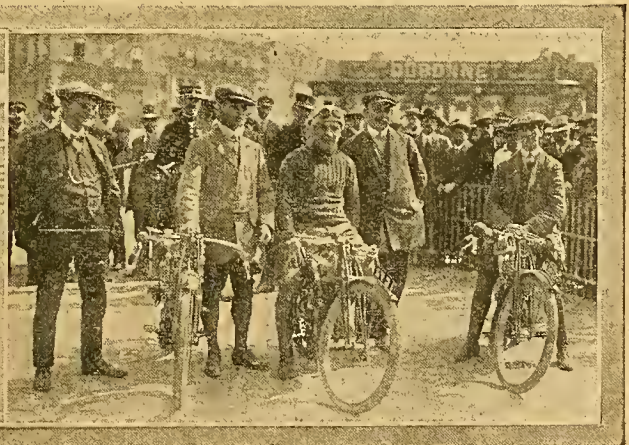
	Machine and rider.	Bore and stroke.	Time.			Average speed Kms. m.p.h.
			H.	M.	S.	
1.	Triumph (Devay) ...	85 x 88	5	6	54	78 = 48½
2.	Rudge (South) ...	85 x 88	5	12	35	77 = 47½
3.	Douglas, 2-cyl. (Bailey) ...	61 x 60	5	19	24	76 = 47
	Peugeot, 2-cyl. (Péan) ...	55 x 70	5	24	43	
	Terrot (Cuzeau) ...	68 x 95	5	34	9	
	Douglas, 2-cyl. (Kickham) ...	61 x 60	5	49	40	
	Rudge (Taylor) ...	85 x 88	5	49	50	
	Peugeot, 2-cyl. (Devaux) ...	56 x 70	5	58	2	
	Rudge (Scott) ...	85 x 88	6	3	20	
	Indian (Steibel) ...	82.5 x 93	6	3	51	
	Triumph (Gabriel) ...	85 x 88	6	6	29	
	Douglas, 2-cyl. (Bashall) ...	61 x 60	6	14	8	
	Aleyon (Stoffel) ...	56 x 100	6	20	38	
	René Gillet, 2-cyl. (Bloch) ...	64 x 76	6	24	31	
	Bedelia, 2-cyl. (Bourbeau) ...	80 x 100	6	31	20	
	Bedelia, 2-cyl. (Devaux) ...	80 x 100	6	33	19	

The team prize was awarded to the Rudge team (19 points), with Douglas second (21 points).

The machines were divided into three principal classes, viz., up to 250 c.c., 350 c.c., and 500 c.c., but all ran together for the cup. In the passenger class Bourbeau's Bedelia finished first. Grapperton's New Hudson was the only British machine in this class.

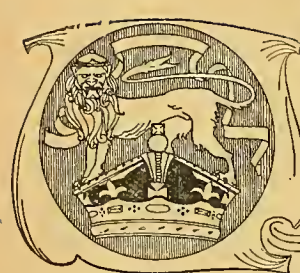


Three out of the four Peugeot machines entered. The four riders were Pean, Baudry, Perrin, and Devaux.



The Douglas team. From left to right the riders are: S. L. Bailey, W. H. Bashall, and E. Kickham.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Sept. 12th	...	7.22 p.m.
" 14th	...	7.17 "
" 16th	...	7.12 "
" 18th	...	7.8 "

## Well-known Rider Married.

H. H. Bowen was married on Tuesday of last week, and he and his bride are now on their honeymoon.

## Paris Salon.

We understand that Douglas Bros., Bristol, will show their 1913 models at the Paris Salon in December immediately following the Olympia Show. The same firm are also opening a depot in Paris. This is enterprise which we should like to see developed.

## A Recommendation for Sidecar Users.

Riders of sidecar machines who are at all nervous about the front tube not being sufficiently strong, can use, as a makeshift, a strong strap passed under the sidecar tube and attached to some portion of the bicycle. This will prevent the sidecar touching the ground in the event of a fracture of the front connecting bar.

## Real Enthusiasm.

Two lady motor cyclists recently rode from St. Albans to Ravenstonedale, Westmorland, in one day, leaving 6.15 a.m. and arriving 8 p.m. They rode two free-engine  $5\frac{1}{2}$  h.p. Rudges (ladies' models). It rained all the way from Grantham and during one hour, owing to the heavy rain and belt slip, only fifteen miles were accomplished.

## Motor Cycle Accident in America.

We very much regret to report a serious accident which took place on the Vailsburg track, New Jersey, on Monday last, when Eddie Hasha, travelling at a speed of over ninety miles an hour, left the track and dashed into the spectators, turned round, and charged another competitor named John Allbright. Both riders were killed instantaneously, and six spectators were also reported to have been killed and others seriously injured. Eddie Hasha was the well-known Indian exponent who recently accomplished several world's records on the American three-lap tracks. It is reported that something went wrong with the engine which caused the machine to leave the banking. A similar accident occurred in France some years ago at the Park des Princes track, where the banking is not so acute as it is on the American three-lap tracks. Eddie Hasha was married, and report says that his wife witnessed the accident. He was quite a young fellow, and we offer our sincere sympathies to his widow. Doubtless American sportsmen will see that she is well provided for.

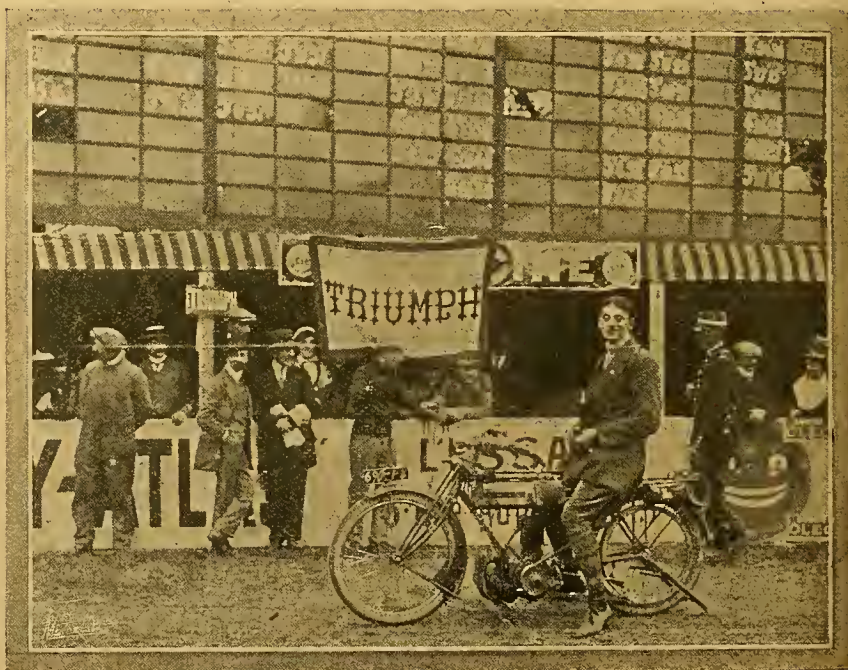


The late Eddie Hasha.

## Incitement to Crime.

At a recent meeting the Willenhall councillors discussed the speed of motorists, and Councillor Tyler suggested that a bonus of 5s. should be offered to every

police officer who obtained a conviction. The clerk regarded it as a good suggestion, and the council purpose considering the matter. If this suggestion is really carried out it ought to be carried out to its logical conclusion, and we think that a fair *pro rata* bonus would be £10 in the case of a burglary and £100 for the conviction of a murderer. Also many people regard the cattle maiming outrages which have been too common in South Staffordshire of late as a more serious crime than exceeding the legal limit, and more worthy of police activity. We regard this suggestion as most immoral and a direct incitement to perjury and trumped up charges on the part of the police, which have, unfortunately, not been altogether unheard of hitherto in several parts of the country. We have previously had occasion to note that, where great activity is indulged in by the police in the highways and hedges—and anyone knows where the constables will be found—other crimes, such as burglary and assaults on children have become much more prevalent.



Devay (Triumph), winner of the French International Cup race. He rode a standard machine in all details, and his win was most popular among the British riders and spectators. Note the scoring board above the grand stand.



**Motor Cycle Firm's Profits.**

We are pleased to be in a position to chronicle the fact that the Premier Cycle Co., Ltd., of Coventry, one of the oldest concerns in the cycle and motor cycle industry, has just issued its directors' report which was submitted to the shareholders last Monday at the annual general meeting. The net balance of profit is £27,072 1s. 1d., and a dividend at the rate of 7½% on the preference shares is being paid £9,375. 15% on the ordinary shares £7,500, £10,000 is being carried to the Reserve Fund, and £9,407 to next year's account. We congratulate the directors of the Premier Cycle Co. on such a prosperous year.

**A.A. and M.U. Enterprise.**

The A.A. and M.U. have recently inaugurated a campaign by which members will be able to obtain the use of clean hand towels, brush and comb, etc. These articles are enclosed in a special cabinet under lock and key, and members who desire it are provided with keys which will enable them to unlock the cabinet and obtain access to the articles. We cannot see the use of this latest form of enterprise, because clean towels are to be found in all decent hotels, and therefore it follows that hotels without clean towels are unfit for A.A. patronage. On the whole we think motorists would more appreciate duster boxes containing choice selections of silk waste and Selvyt cloths. Or, stay, is this latest form of enterprise due to complaints from hotel keepers?

**British Imports and Exports of Motor Cycles.**

From the following tables the imports and exports of motor cycles for the month and eight months ended August 31st for the last three years may be seen at a glance:

IMPORTS			
Month ended August 31st.			
	1910.	1911.	1912.
	£	£	£
Motor cycles ...	4,298	2,597	3,741
Parts thereof ...	6,013	4,875	10,827
Total ...	10,411	7,472	14,568
Eight months ended August 31st.			
Motor cycles ...	35,462	34,096	33,426
Parts thereof ...	38,979	45,555	81,563
Total ...	74,441	79,651	114,989
EXPORTS.			
Month ended August 31st.			
	1910.	1911.	1912.
	£	£	£
Motor cycles ...	11,317	19,497	56,857
Parts thereof ...	4,766	5,990	18,738
Total ...	16,083	25,487	75,645
Eight months ended August 31st.			
Motor cycles ...	64,978	139,786	295,316
Parts thereof ...	26,130	41,632	106,026
Total ...	91,108	181,418	401,342

As will be seen, the amount of exports for the month ended August 31st, 1912, is over four times the amount of the same period of 1910, while for the eight months ended August 31st, 1912, is also four times that of the same time in 1910. It will also be noticed that the imports of motor cycles are gradually decreasing, while the amount of imports of motor cycle parts is on a steady incline.

FUTURE EVENTS	
Sept. 14.	—B.M.C.R.C. Race Meeting.
" 14.	—Torbay M.C.C. Open Hill-climb.
" 16.	—Edinburgh and District M.C.C. Open Hill-climb on Ainslie.
" 21.	—Herts County A.C. Open Hill-climb.
" 21.	—Birmingham M.C.C. Open 24 Hours' Fun to Edulburgh.
" 28.	—B.A.P.C. Meeting.
" 28.	—Liverpool A.C.C. Postponed Open Reliability Trial.
Oct. 5.	—F.C.U. 1000 M.C.C. Open Hill-climb.
" 12.	—B.M.C.R.C. Race Meeting.

**Mr. Olssen's Recovery.**

We were glad to see Mr. V. Olssen again at the Streatham and District climb. He still has to walk with two sticks after his accident in the M.C.C. London-Land's-End run, but is progressing favourably, and can drive his car again.

**The French Six Days' Trial.**

The most important motor cycle trial yet held in France will be the Six Days' Reliability Test for motor cycles and three-wheelers, organised by the A.C.F. The following information has been published by the Competitions Committee. The machines will be started each day in order of entry. Each stage will be divided into sections of from forty to fifty kilometres. At the end of each there will be controls. The minimum speed imposed will be thirty kilometres an hour for every class, which means that machines may travel at a greater speed, and no marks will be deducted for early arrivals, but no competitor may sign the sheet before the time at which he is due. English manufacturers will do well to consider entering for this trial, which is held under the auspices of the principal

motoring organisation in France. It has been pointed out to us by foreign riders of English machines that they are of the opinion that were the reliability and excellence of British motor cycles properly set before the Continental public the latter would appreciate their value and learn that they are worth the extra price.

**Club Secretary in Trouble.**

John King, reported to be the secretary of the Nottingham M.C.C., was bound over in £10 for three months at the Alford (Lincs.) Police Court on Monday of last week. Defendant, who pleaded guilty, was charged with being drunk in the street on the Saturday night following the motor speed trials. The Police Sergeant, in giving evidence, said that some of the men engaged in these trials behaved in a most disgraceful manner. They broke glasses and tables at the Louth Hotel and windows at the Book-in-Hand Hotel, and the defendant was the ring-leader. He was warned four times during the night, so the witness said, and he refused to go to his lodgings. Defendant said he was secretary of the club and he had paid for the damage done at the Louth Hotel and told the proprietor he would be responsible, and also that he could not keep the members under control. We imagine, in effect, the advice to the other roysterers was "Don't do what I do but do what I tell you," attributed to a certain sporting parson. We hardly think that a secretary against whom is alleged such conduct is likely to be able to keep his own members, or the members of any other club, under control, and we hope the action of the Mablethorpe police will prevent further disgraceful scenes of this kind, which have already done the pastime a considerable amount of harm, and if continued cannot fail to cause motor cyclists to be given the cold shoulder. We have evidence to prove that motor cyclists have been requested to use special rooms at an A.C.U. appointed hotel.



R. M. Davy (3½ h.p. Calthorpe) making good time at the joint speed trials promoted by the Leeds M.C.C. and the Sheffield and Hallamshire M.C.C.



## Some Experiences with a 1912 B.S.A.

**I**TS first journey was a fairly long one—from London to Taunton—where it found itself at once *in medias res*, as its particular work was to carry me to those points of vantage in hilly Somerset and Devon from which the Six Days' Trial could best be seen. The trip to Taunton was made in weather which more closely resembled April than August. A slimy film of mud covered the wood paving all the way to Hammersmith, Castelnau was little better, and Richmond with its tramlines worse than anything. However, it was soon over, and when at Sunbury Admiral Arbuthnot stopped to raise his gear, he congratulated the writer on being a good pilot. He knew the North Sea well enough, but he was blessed if he could have got out of town on to the Exeter Road as quickly or as comfortably. Staines was then passed, and here the main highway was reached, which brought us without incident to Basingstoke. After Basingstoke the deluge. How it poured! But sunshine followed the rain at Andover, and good time was made over the fine open road past Stonehenge, opposite the military aeropolis on Salisbury Plain—a wonderful contrast between our greatest antiquity and our newest form of locomotion. More heavy showers followed, but easy to control in traffic, steady in grease, and minding the elements not at all, the B.S.A. brought me without a hitch to Warminster.

Naught troubled me in the way of hills as none existed—at least, if they did the machine noticed them not. My first trip on the Six Days was to Blagdon and then to Telegraph hills, both of which were surmounted with ease, the low gear only being engaged for a moment or two. These were but ordinary incidents in a day's run, as the next interesting stage of my journey was from Ashburton to Two Bridges, which enjoys the reputation of being the hilliest road in England. It poured and poured with rain, the roads were stony, rutty, and steep, and the wind

blew strongly; yet, save once to ask the way, I never left the saddle. The road is No. 746 in the Contour Road Book. Mostly "1 in 7 or 1 in 8," says Gall and Inglis, not desirous of discouraging the enthusiastic pedal cyclist, for whom the work was originally written—"all highly dangerous." Next day I did a choice bit of cross-country work from Barnstaple to Blackmoor Gate without an involuntary stop. Paracombe did not trouble the B.S.A. in the slightest, but Beggar's Roost called for a stop. I am confident, however, the machine was equal to it, as I was geared  $4\frac{1}{4}$  to 1 on top, and had I not been too lazy to open out the adjustable pulley I should have got up, as the engine had ample power, which it maintained the whole time it was in my possession.

The machine gave the greatest satisfaction, was comfortable, steered well, and ran with clocklike regularity. Only one mechanical trouble did I suffer, and that was at Crewkerne on the ill-omened Friday, when I lost my overalls, my best screwdriver, someone took a fancy to the horn, and the inlet valve broke at the slot. Fortunately the garage people rose to the occasion, and sent eight miles into Yeovil and brought back another. The only criticisms I can give are, firstly, that the exhaust tappet threw out a fair amount of oil, and, secondly, that the foot brake might have been much more powerful. The front brake, however, was distinctly good, and the C.A.P. carburetter, shortly to be renamed the B.S.A. and already standard, a joy for ever. The improved gear control by one pedal only was excellent. The release pedal to engage from low or neutral to top, however carelessly depressed, made the change so sweetly, thanks to the cone clutch, that no shock of any kind whatsoever was apparent. The starting of the engine by pedal was always effected at the first turn if the engine were warm or if the engine were cold and petrol were injected it started just as readily.

E.M.P.B.

## The Passes of the Pyrenees.



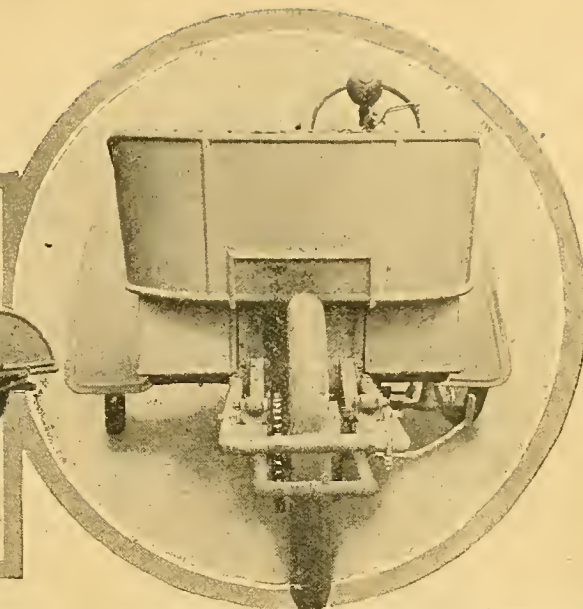
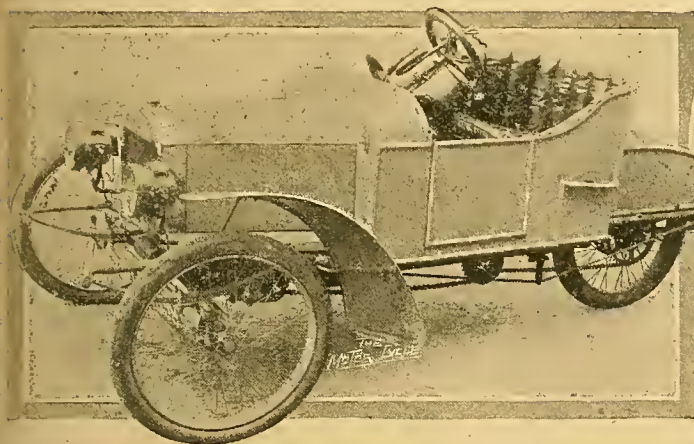
A Mototri-Contal on the summit of the Col d'Aspin, 4,912 feet above sea level.

"The Passes of the Pyrenees." C. L. Freeston, F.R.G.S., Kegan Paul, Trench, Trübner and Co., Ltd. Mr. Freeston's name first came before our readers in our review of his book "The High Roads of the Alps." After the Alps one naturally turns to the Pyrenees—a district possessing a beauty of its own, quite different from that found in the Haute Savoie and the great range stretching far east into Southern Europe. Owing to the southern position the mountains in this lovely region are clothed in verdure almost to their summit, and little or no bare rock projects above the leafy covering. The roads are good, and mostly well graded, but in places the gradient attains a maximum of 1 in 6, which is much steeper than is usually encountered in France. The book itself is replete with valuable information. Every yard dealt with has been covered by the author, who gives notes on surface, gradients, and altitudes which have hitherto been unobtainable. The work is well written and beautifully illustrated, and is strongly to be recommended to all who desire to tour in this attractive region, which is best visited in late summer or early autumn.



# The C. & H. Cyclecar.

- (1) Side view of the C. & H. cyclecar, showing chain transmission.
- (2) Disposition of driving wheel and method of attachment.

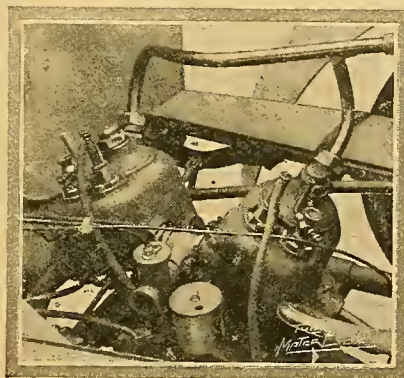


We had the privilege of seeing the other day the "C. and H." cyclecar, which has been placed on the market by Messrs. Corfield and Hurle, 52, Widders Road, Stamford Hill, N. It is driven by a 5-6 h.p. water-cooled twin-cylinder Fafnir engine, 70 x 80 mm.

The engine is fitted with mechanically-operated valves, and there are compression taps in each cylinder. The magneto is carried in front of the crank case, and is gear driven. On the engine-shaft is a multiple-disc clutch.

From the engine to the Chater-Lea three-speed gear box, which is suspended by two inner longitudinal members, the transmission is by chain. On the counter-shaft is carried an external contracting band brake, operated by a pedal, and from the counter-shaft to the rear wheel the transmission is again by chain. The side brake is of the external type, and is carried on the rear wheel spindle.

The back wheel is carried in a separate frame, hinged at the rear on two stays



The 5 h.p. twin Fafnir engine fitted to the C. & H. cyclecar, described on this page.

attached to the inner longitudinal members of the main frame, thus allowing the wheel to have a perfectly parallel up and down movement. Interposed between the main frame and the hinged frame are semi-elliptical springs with shackles at each end, while the front portion of the vehicle is also suspended on semi-elliptical springs with shackles at the rear ends.

Over the rear wheel there is a detachable cover and mudguard, secured by means of two winged nuts. Its removal, which is very easy, discloses the whole of the back tyre. Wheel steering is employed, and a 3½ gallon petrol tank and the oil tank are carried on the dashboard.

We were taken for a short run in the traffic, and found it to be easily controllable, lively, and fairly well sprung. It showed itself to be capable of accelerating on top speed to about 25 m.p.h. on a 1 in 20 grade, with two passengers, despite several checks.



South  
Birmingham  
M.C.C. Novices'  
Hill-climb. A.  
Woodgate (2½  
Singer) leading  
A. Spiers (2½  
Douglas) in the  
final of the light-  
weight class.



**Westmorland M.C.C.**

The result of a petrol consumption trial held last week is as follows: 1, J. Braithwaite (3½ Braithwaite), 338 m.p.g.; 2, L. Pierce (3½ Corah), 320 m.p.g.; 3, B. Jeffrey (6 Bat). Result of a fast and slow hill-climb held on Saturday last at Hutton Park. 1, R. K. Chapton (2½ Humber); 2, L. S. Parder (3½ Scott); 3, I. H. Nelson (3½ Scott).

**Mersey M.C.C.**

Additional and amended awards are as follows: Special prizes—Lightweight class, W. Davies. (2½ Victoria-Jap), 500 c.c., V. Horsman (3½ Singer) sidcar, H. G. Dixon (3½ New Hudson). Gold medals.—F. Rees (3½ Rudge), H. W. Coopland (7 Williamson sc.), L. Mogridge (3½ Mead Precision), and A. J. Jenkins (2½ Douglas). Silver medals.—G. D. Ninon (3½ Rudge), C. Hobbs (3½ Humber), and W. H. Longton (3½ Ivy-Precision).

**Birmingham M.C.C.**

An open twenty-four hours' reliability trial, Birmingham to Carlisle and back, will be held on the 21st inst., starting at 10 p.m. on the 20th. Route: Birmingham, Brownhills, Newport, Whitechurch, Warrington, Preston, Kendal, and Carlisle, and back through the same places in reverse order. The distance is approximately 200 miles each way, and there will be non-stop sections from Kendal to Carlisle on the outward journey, and from Carlisle to Kendal on the return. Full particulars, together with entry forms, are now ready and may be obtained on application to Mr. S. C. Perryman, trials hon. secretary, 67, Wood End Lane, Erdington, Birmingham.

**Western District M.C. (London).**

The reliability trial for the Williams Shield to Tetsworth and back from Uxbridge was successfully run off on Saturday, the 7th. The results, subject to confirmation, are: 1, E. S. Nitter (2½ Douglas), 4s. slow, non-stop; 2, F. W. Ritchie (8 Matchless), 10s. slow, non-stop; 3, M. G. Tweedie (3½ N.S.U.), 20s. slow, non-stop; W. F. Ritchie (3½ Bradbury), 55s. slow, non-stop; Dr. Merrick (3½ Triumph), 10s. fast, pedalled on Dashwood Hill.

The run to Bookham on 8th inst. was well patronised, and members as usual picnicked on the common.

**Lincolnshire A.C. (Motor Cycle Section).**

A knock-out hill-climb was held on the 7th inst. at Scamblesby. Results:

Class II. (up to 600 c.c.).—1, J. H. Brookes (3½ h.p. Rudge); 2, W. J. S. Bament (3½ h.p. Rudge).

Class III. (over 600 c.c.).—1, B. Rhodes (6 h.p. Zenith); 2, A. W. Grocock (6 h.p. Zenith).

Unfortunately, traffic caused considerable delay in running off the events. The surface of the hill was in good condition and the weather fortunately fine. Several good finishes entertained the crowd of spectators on the brow of the hill.

**Armagh and District M.C.C.**

Hill-climbing competitions, under the auspices of the above club took place on Friday last. There were three events, the results of which were as follows:

**LOCAL EVENT.**

	Actual time.	H'cap time.
J. A. Peel (2½ Douglas, 10s. start)	32½s.	22½s.
C. Walsh (2½ Singer, 12s.)	35½s.	23½s.
T. G. Anderson (3½ B.S.A., 3s.)	27s.	24s.

**OPEN HILL-CLIMB.**

G. Pinion, Belfast (3½ Matchless, 3s.)	26s.	23s.
J. Stewart, Belfast (2½ Douglas, 10s.)	33½s.	25½s.
F. J. Walker, Dublin (3½ Rudge, 3s.)	27½s.	24½s.

**OBSTACLE RACE.**

T. G. Anderson (3½ B.S.A., 3s.)	46½s.	43½s.
C. Walsh (2½ Singer, 12s.)	56½s.	46½s.
R. Whitsett (3½ Singer, 4s.)	49½s.	45½s.

**Manchester M.C.**

An open hill-climb will take place on October 5th. There will be five classes: Lightweights, Standard Touring Machines, Racers, Unlimited, and Passenger.

**Herts County A. and Ae.C. (Motor Cycle Section).**

The third open quarterly trial will be held shortly over a sporting course of 100 miles. There will be a paperchase and conking exhibition on the 14th inst. A start will be made at 3 p.m. from a point about half a mile north of Redbourn, Herts, and a trail will be laid by hares (with ten minutes start) over an interesting course. The route, although severe, will not be impossible, and members are requested to ride with judgment.

**South Birmingham M.C.C.**

A hill-climb was held on the 7th inst. at Hill Cop on the knock-out principle. Results:

Class I., Lightweights to 350 c.c.—1, A. G. Woodgate (2½ h.p. Singer); 2, A. Spiers (2½ h.p. Douglas).

Class II., Single-cylinder Touring Machines.—1, L. A. Bees (3½ L.M.C.); 2, S. A. Rowlandson (3½ h.p. Rudge).

Class III., T.T. Machines to 520 c.c.—1, A. R. Felton (3½ h.p. J.A.P.); 2, J. Percock (3½ h.p. Alldays).

**Cardiff M.C.**

Beautiful weather prevailed in South Wales on Saturday last, when a sporting event, in the nature of a hill-climb, was held just outside Usk, on the knock-out principle. Results:

**CLASS I. For machines of any power.**

First Heat: 1, H. Wessendorf (3½ Premier), 3s. start; 2, L. Sawyer (3½ Triumph), 5s.

Second Heat: 1, W. L. Davies (3½ James); 6s.; 2, A. B. Shirley (7 Indian), scratch.

Third Heat: 1, E. Chapman (6 Zenith), 3s.; 2, J. Mathias (2½ Humber), 5s.

Fourth Heat: 1, J. Clarke (3½ Rudge), 3s.; 2, W. D. Giles (2½ Precision), 10s.

**Second Round.**

First Heat: E. Chapman (6 Zenith); 2, H. Wessendorf (3½ Premier).

Second Heat: 1, W. L. Davies (3½ James); 2, J. Clarke (3½ Rudge).

Final: 1, W. L. Davies (3½ James); 2, E. Chapman (6 Zenith).

**CLASS III. For motor cycles with sidcars.**

Final: 1, E. Chapman (6 Zenith); 2, W. H. Smith (8 Jap).

**CLASS IV. For machines built before 1909.**

Final: 1, C. W. Cox (3½ Rex); 2, D. W. Jones (3½ Triumph).



Start of the final in Class I. at the Cardiff M.C. hill-climb. The machines are a 6 h.p. Zenith (on left of photograph) and a 3½ h.p. James.



# BOWDEN VALVE GRINDER

## and Spring Lifter.

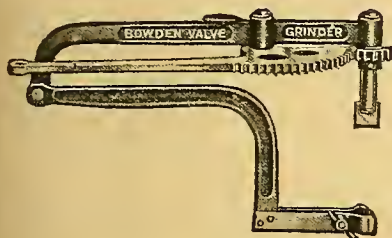
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*I think I must have been one of the first users of your valve grinder.*

**Easiest thing out!** and gets a perfect face on the valve.

Yours sincerely, W. M. H.



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Easy Starting - Easy Running.

**AIR COOLED**

**"Filtrate"**  
REGISTERED  
FOR  
**MOTOR CYCLES**

Sole Makers:

**FILTRATE WORKS, LEEDS.**

**DON'T** spoil your **HOLIDAY** with  
**ENDLESS** Tubes and **TROUBLE.**  
**PUNCTURES** have **NO TERROR** if you use the  
**RICH DETACHABLE TUBES.**

**Guaranteed Air-tight, with free Air Passage.**  
Save Roadside Repairing. Carry a Spare Tube.  
Changed in 5 Minutes.

**REDUCTION IN PRICE.**

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Recommended for all  
ordinary purposes.

	26in.	28in.
1 $\frac{3}{4}$ ..	9/-	10/-
2 ..	13/-	15/-
2 $\frac{1}{4}$ ..	14/-	16/-
2 $\frac{1}{2}$ ..	16/6	18/6
24in., 6q. less		



# THE Douglas

VIBRATIONLESS LIGHTWEIGHT

See How it Wins!!

A big score in the

## Coventry and Warwickshire Club's Open Hill Climb.

Record entry of nearly 200, including all the best riders and machines.

CLASS I. DOUGLAS **FIRST** on Time.

" DOUGLAS **SECOND** on Time.

In this event a Douglas tied with another make of machine for first place, and two Douglasses tied for second place.

CLASS IV. DOUGLAS **FIRST** on formula.

## WINNING PRESIDENT'S CUP.

## THE SPECIAL TEAM PRIZE

was won by the **DOUGLAS TEAM.**

### Essex M.C. 24 Hours' Ride.

N. C. Dear, DOUGLAS, completed the journey to time and qualified for **GOLD MEDAL.**

### Surrey M.C.C. Hill Climb.

CLASS I. DOUGLAS **FIRST** and Fastest Time.

### Westmoreland M.C.C. Reliability Run.

LIGHTWEIGHT CLASS. H. Jackson, DOUGLAS, **FIRST.**

MAY WE SEND YOU FULL DETAILS OF OUR MODELS?

## DOUGLAS BROS. Kingswood, BRISTOL

Telephone—No. 51.

Telegrams—"Douglas, Kingswood."

London—336, Goswell Road, E.C.



Club News.—

**Oxford M.C.C.**

The committee regret that the open reliability trial arranged to take place on September 14th has been abandoned.

There will be a social run to Bournemouth for the week-end on September 21st, starting at 1 p.m., from Magdalen Bridge, Oxford, returning early on the Monday morning.

**Manchester Amateur M.C.C.**

A hill-climb will be held on Axe Edge, near Puxton, Derbyshire, on the 22nd inst., at 2.30 p.m. The climb will be a flexibility test, each competitor to make a fast and slow climb. There will be two classes—(1) singles and (2) twins.

Formula F  
S

**Torbay and District M.C.C.**

For the open hill-climb on September 14th, the formula known as the A.C.U. will be used. Another class has been added for touring machines from 500 c.c. to 1,000 c.c., and in the touring classes any handle-bars may be used provided the ends do not extend below the top tube of frame. This rule has become necessary owing to the difficulty in deciding what is a touring machine.

**Aberdeen and District M.C.C.**

A hill-climb was held at Potarch on the 31st ult. There are two tricky turns and much depends on skilful driving. Results:

	Fig. of merit.
1. G. Cummings (3½ T.T. Matchless) ...	77
2. A. Stewart (3½ I.T. Rudge) ...	76
3. J. A. Wood (3½ Rudge) ...	69
4. J. Coulter (3½ T.T. Triumph) ...	68
5. H. Frazer (3½ Rudge) ...	59

G. Cumming won the Challenge Cup presented by Mr. T. W. Smith for fastest time.

**Furness M.C.C.**

A hill-climbing competition was held at Healinghearth Hill, Rusland Valley, on the 1st September. There were four classes, the results being as follows:

Class I. (Lightweights under 450 c.c.)—1, J. Timmins (2½ Royal Enfield); 2, M. Bradbury (2½ Douglas); 3, H. Blamire (2½ Douglas).

Class II. (Single-cylinder machines up to 500 c.c.)—1, G. W. Braithwaite (3½ Zenith); 2, H. Bloxam (3½ Triumph); 3, P. Bryant (3½ Triumph).

Class III. (Any machine over 500 c.c.)—1, G. Bigland (6 Zenith); 2, E. E. Cloed (6 Zenith); 3, W. Irving (4½ Precision).

Class IV. (Machines with sc. any capacity.)—1, E. E. Clow (6 Zenith and sc.); 2, G. W. Braithwaite (3½ Rudge and sc.); 3, E. A. Wilson (3½ New Hudson and sc.)

Competitors were timed by telephone, and results were declared on formula  $\frac{W}{C \times T^2}$  as recommended by *The Motor Cycle*.

**Hamilton and District M.C.C.**

On the 21st ult. the members held their petrol consumption test under ideal weather conditions. Results: 1, Dr. Fotheringham (3½ Bradbury); 2, H. Street (3½ T.T. Triumph); 3, T. Gibson (8 Dot).

A highly successful flexibility hill-climb was run off, on the 31st ult., at Kirkmichael Kirk Hill, near Lanark. Some very good performances were made. Results: 1, R. Mack (4½ Calthorpe); 2, R. Cassells (8 Matchless); 3, H. Street (3½ T.T. Triumph).

**Leicester and District M.C.C.**

A hill-climbing competition was held on the 29th ult. The course was a hill of medium gradient, and the distance travelled was a mile. The top portion of the hill was in very bad condition, having a large quantity of loose stones upon the surface. Notwithstanding this, some very good performances were made.

The Judge Cup, presented for the best performance of the day, determined upon the formula  $\frac{C \times T^2}{W}$ , as recommended by *The Motor Cycle*, has been decided in favour of Woodgate (Douglas), whose performance was excellent.

The electrical timing apparatus again proved a great success, and practically no comment was made by anyone concerning the timing. Results:

**CLASS A (1).**

	Formula.	Time.
1. J. H. Woodgate (twin Douglas) ...	7,712	1m. 22½s.
2. H. Petty (lightweight Singer, single) ...	8,300	1m. 40½s.

**CLASS A (2).**

	Formula.	Time.
1. M. Simpson (Rudge, single gear) ...	8,652	1m. 21s.
2. A. L. Barker (3½ Singer, with speed gear) ...	9,252	1m. 27s.
3. F. Snowden (Rudge-multi-speed) ...	9,500	1m. 28½s.

**CLASS A (3).**

	Formula.	Time.
1. S. Briggs (6 twin Zenith-Jap) ...	11,150	1m. 14s.
2. W. M. Matthews (6 twin Zenith-Jap) ...	14,250	1m. 22s.

**CLASS A (4).**

	Formula.	Time.
1. S. Briggs (6 twin Zenith-Jap) ...	14,000	1m. 47½s.
2. F. Snowden (Rudge-multi-speed) ...	14,925	2m. 31½s.
3. W. M. Matthews (6 twin Zenith-Jap) ...	16,625	1m. 55½s.

**CLASS A (5).**

	Formula.	Time.
1. E. W. Leonard (T.T. 3½ B.S.A.) ...	9,225	1m. 24½s.
2. A. L. Barker (3½ Singer, speed gear) ...	9,250	1m. 27½s.
3. E. Folwell (3½ T.T. B.S.A.) ...	9,650	1m. 24s.

**CLASS A (6).**

	Formula.	Time.
1. F. Snowden (Rudge-multi-speed) ...	9,500	1m. 28½s.
2. E. W. Leonard (T.T. 3½ B.S.A.) ...	10,775	1m. 31s.

**CLASS B (1).**

	Formula.	Time.
1. W. P. A. Chapman (6 twin Champion-Jap) ...	...	1m. 18½s.
2. H. Petty (3½ Singer) ...	...	1m. 19s.
3. W. M. Matthews (6 twin Zenith-Jap) ...	...	1m. 22½s.



A busy scene. Weighing in at the Coventry and Warwickshire M.C. open hill-climb held at Woodway Hill, Dodford, near Daventry.



### A Valve Cooling Device.

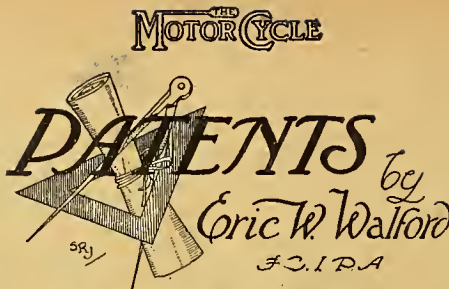
To prevent excessive heating of the exhaust valve A, a disc B and rod C of copper, or other metal of high conductivity (of heat), is arranged as shown. The rod C is provided with a series of radiating plates D. The action is to provide a cool zone close to the exhaust valve, reducing the amount of heat imparted to the latter.—E. B. Ludlow, No. 24,061.

### Poppet Valves.

The invention is shown applied to an overhead inlet valve of the type used on the Rudge machines. The valve A itself is of ordinary construction, but the washer B is formed with a conical recess into which the cotter C fits. The spring D extends around the conical portion and up to the flange illustrated, enabling a long spring to be employed. Further, the cotter is subjected only to a compressive stress.—F. Pountney and Rudge-Whitworth, Ltd., No. 22,399, 1911.

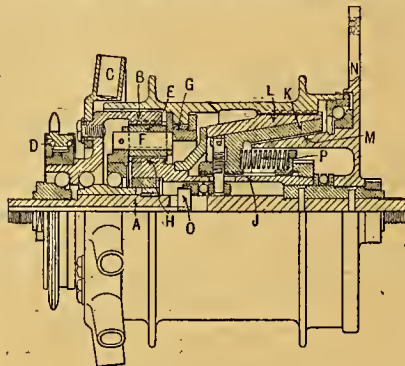
### A Neat Sidecar Accessory.

A call on Thomas Mackenzie and Co., Bath Passage, Birmingham, is always interesting, and last week we were privileged to see the first of several novelties in the sidecar line. One of the neatest fittings we have seen is the firm's Cuverall, which is made of waterproof material, and can be used either to cover over a sidecar, when not in use, or to protect the passenger, leaving only the head exposed, or as an ordinary sidecar



### A Two-speed Free-engine Hub.

Upon the fixed spindle A is mounted an internally toothed ring B, which forms part of an epicyclic train, and carries the belt pulley at C and pedalling sprocket at D. The planet pinions E of the epicyclic train rotate upon spindles F carried

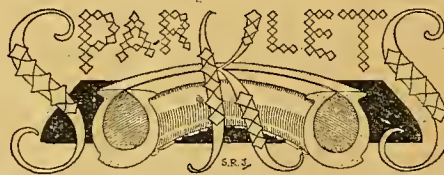


by a ring secured to the hub shell at G. The sun pinion H is carried by a sleeve J mounted on the fixed spindle.

This sleeve J has slidably mounted upon it a clutch member K adapted to engage either a clutch member L carried by the hub shell, or a clutch member M anchored by an arm N to the frame. The sliding clutch member K is controlled by a cross pin O, and is normally impelled into contact with the clutch member L on the hub shell by springs P. When in this position the epicyclic train is locked solid and a direct drive is provided. To obtain the lower gear the clutch member K is pushed out of engagement with the clutch member L, and into engagement with that M anchored to the frame, holding the sun pinion H stationary, and transmitting the motion to the planet pinions and hub shell at a reduced speed. When the clutch member K is intermediate of the cones L and M a free engine is provided, and while in this position the engine can be started up by pedalling, the sprocket D being carried by the engine pulley C for this purpose.—Birmingham Small Arms Co., Ltd., and H. M. Phillips, No. 21,082, 1911.

### Saddle Springing.

The seat A is supported at each side of the rear on compression springs B and tension springs C, arranged in alignment, so that when the saddle is under load a direct thrust is applied to the springs, and there is no tendency to lateral bending.—A. E. Wilby, No. 21,835, 1911.



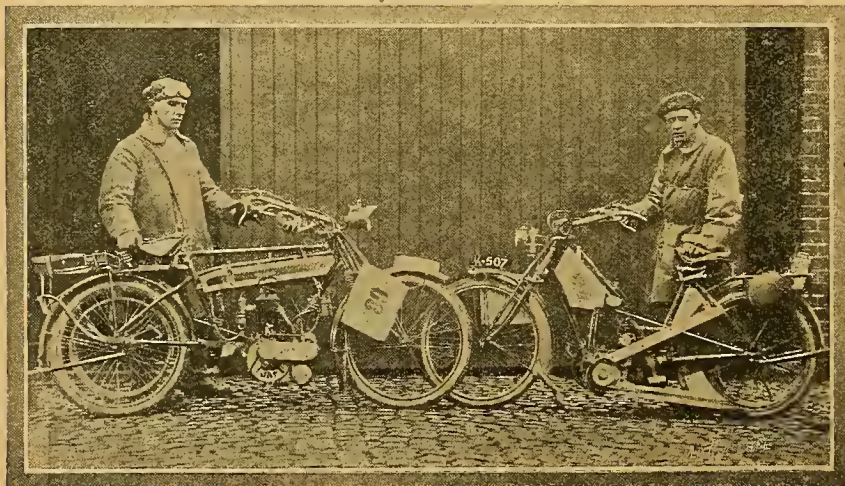
apron. It may be fastened in any of these positions by neat metal fastenings, and presents a workmanlike appearance.

### Belts in the Coventry Hill-climb.

A remarkable success by the Lycett's "Rawido" Belt Co., Ltd., Birmingham, was attained at the Coventry and Warwickshire Motor Club hill-climb on the 31st ult., when every winner of the open events on time and formula used the new Lyso belts. W. Stanhope Spencer also used one of these belts on a Rudge and sidecar when he broke the sidecar records on the 30th ult.

### Waterproof Magnetos.

Correspondence has recently appeared in these pages respecting the waterproof qualities of motor cycle magneto machines. The judges' report on the behaviour of the magnetos in the Scottish Trials was that they were not so waterproof as they might have been. Several riders in these trials suffered from wet getting into the magneto machine and shorting the current. J. J. Oulsnam, a motor cycle agent, of Wirksworth, in a letter to the Bosch Magneto Co., says that during the recent floods he rode a motor cycle fitted with a ZE1 magneto for a mile through water, six to twelve inches deep, on the low gear without a misfire, and at one place where the road is below the level of the River Trent he had to push the machine through the water which came over the top of the engine and magneto, the crank case being filled with water as well as the combustion chamber. After this experience he says that he had not to touch the magneto, and after cleaning out the engine it started without the slightest hesitation.



Two novel machines at the Ashburton control in the Mersey M.C. reliability trial. The machine on the left will be recognised as the sprag-frame 3½ h.p. Charles-Edmund-Jap, which was seen at the Olympia Show of 1910. The right hand machine is a 2½ h.p. open-frame Victoria-Jap (S.A. three-speed)—the smallest machine in the trial.



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**WILL** get the last ounce out of your engine.

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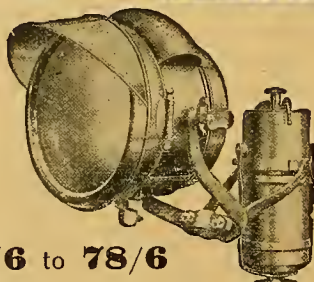
**WILL** do so consistently for a greater length of time than any other plug.

**WILL** regularly fire the weakest mixture, and

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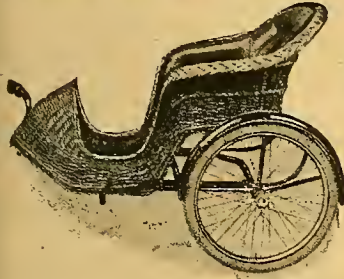
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**H**EBDEN'S Motor Mart, Burnley.

**W**ANTED, offers for the following shop-soiled machines, all new and guaranteed.

**1912 Models.**

**F**REE-ENGINE Triumph; list price £55.

**M**ULTI-RUDGE; list price £60.

**H**UMBER, 3½ h.p., 2-speed, and canoelet sidecar; list price £65/2.

**T**.T. Triumph; list price £50.

**J**AMES, 2-speed, and canoelet sidecar; £73/3.

**N**EW-Hudson, 3½ h.p., J.A.P., 3-speed; £59/17.

**2½ h.p.** Premier, 3-speed; £46/10.

**S**ECOND-HAND.—No reasonable offer refused.

**1912** Rudge, free engine, as new.

**1912** Lady's Douglas, 2-speed, as new.

**1911** T.T. Triumph, as new.

**1911** T.T. Rudge, as new.

**1911** 2½ h.p. Lincoln-Elk, as new.

**1910** 2½ h.p. Moto-Reve, worth £25, as new.

**1910** Triumph, with new 2-speed, Bowden counter-shaft gear, kick starter, and new 8gn. sidecar, valued at £55/10.

**1909** Standard Triumph, in grand condition, faultless.

**1909** 3½ h.p. Rex, new tyre and Whittle belt, in faultless condition.

**1909** N.S.U., 2-speed gear and free engine, in perfect condition, take sidecar.

**1910** 3½ h.p. Humber, 2-speed and sidecar, just overhauled and in tip-top order, honestly worth £46/10.

**A**LL the above machines are in guaranteed order and must be cleared regardless of cost. The first reasonable offer will be accepted in each case. Now is your golden opportunity.

**H**EBDEN'S Motor Mart, Burnley. Tel. 488.

**1912** Rexes, all models from stock; exchanges quoted on liberal terms.—Motories, 16, Westgate, Halifax. [X5295]

**1912** Rexes, all models from stock; easy payments without extra charge.—Motories, 16, Westgate, Halifax. [X5296]

**R**EX de Luxe, handle starting, good tyres, less engine.—Motories, 16, Westgate, Halifax. [X5297]

**1910** Phelon-Moore, 3½ h.p., 2-speed, free engine, good condition; £39, or near offer.—Taylor, Crosshill, Driffield. [X2871]

**32** ½ h.p. James, new condition, head light, spares, £34; sidecar, £3.—9, Slade Hall Rd., Longsight, Manchester. [X3637]

**1911** Bradbury and Sidecar, 3½ h.p., clutch model; £40, or nearest offer.—Smith, 22, Ridgway St., Manchester. [X3757]

**1911** Free Engine Triumph, Kempshall rear, £41; 1910 Triumph, Mabon clutch, £34.—Cross, agent, Rotherham. [X3778]

**D**OUGLAS, 2½ h.p., in good condition, just overhauled by Douglas Bros.; £25.—G. W. Waterlow, Winterton, Doncaster. [X3737]

**1912** New Hudson, 2½ h.p., J.A.P. engine, 3 speeds, 4 months old, run 200 miles; £40.—Dunn, Edge Lane, Stretford. [X5026]

**1912** Bradbury, clutch model, used once, £7 sidecar, accessories; accept nearest £50, cost £82.—80, Blenheim Rd., Southport. [X2734]

**2½ h.p.** 1912 Humber, just as new and unsoiled, mileage 2,000; 34 gns.—Box 1,309, The Motor Cycle Offices, Coventry. [X3636]

**1910½** Enfield, 2½ h.p., condition as new, recently overhauled, good machine; bargain, £20/10.—W. Kelley, Elms Av., Lytham. [X3048]

**£22**—1909 Triumph, with L.M.C. var. gear, Wood-Milne tyres, enamelling excellent, genuine bargain.—65, Hidden St., Bolton. [X3600]

**F**.N.S., 4-evil, spring forks, mag., central induction, 1912 B. and B., good running order; £10/10.—15, Bradford St. West, Bolton. [X3599]

**3½ h.p.** Brown, 2-speed, mag., B. and B., new Lyco belt, accessories; sacrifice £19/10.—149, Stamford St., Brooks Bar, Manchester. [X3712]

**9d. for 4d. Uncertain,**  
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**STURMEY-ARCHER 3-SPEED GEAR**  
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<b>N.S.U.</b> , 6 h.p., 1910, 2-speed, and new sidecar .....	<b>£38 10</b>
<b>N.S.U.</b> , 3½ h.p., 1908, magneto, 26in. wheels .....	<b>£13 10</b>
<b>REX</b> , 3½ h.p., 1908, spring forks, magneto, Twin DOT, 7-0 h.p., 2-speed, handle starting, with sidecar .....	<b>£36 10</b>
<b>CLYNO</b> , New, 1912 model. In stock .....	<b>£68 5</b>
<b>VINDEC</b> , 5 h.p., 1910, 2-speed .....	<b>£35 0</b>
<b>REX</b> , twin, 1910, Speed King .....	<b>£20 0</b>
<b>REX de LUXE</b> , 5 h.p., twin, 1911, M.O.V., with 12 12s. Rex sidecar .....	<b>£47 10</b>
<b>REX</b> , 3½ h.p., vertical engine magneto .....	<b>£8 10</b>
<b>BRADBURY</b> , 1910, 3½ h.p. .....	<b>£20 0</b>
<b>HUMBER</b> , 1910, 2-speed gear .....	<b>£29 10</b>
<b>SAROLEA</b> , 5 h.p. Tricar, P. and M. gear .....	<b>£10 10</b>
<b>ENFIELD</b> Lightweight, 1910 .....	<b>£18 10</b>
<b>QUADRANT</b> , 3½ h.p., magneto, spring forks .....	<b>£16 10</b>
<b>DAVIS DOUBLE</b> , 1911, 6 h.p. J.A.P. 2-speed gear; cost for .....	<b>£21 10</b>
<b>VINDEC SPECIAL</b> , 5 h.p., twin magneto, spring forks, h-b. control, 2 speeds, free engine .....	<b>£25 0</b>
<b>3 h.p. CLYDE</b> , M.O.V. magneto .....	<b>£8 10</b>
<b>WOLF</b> Lightweight, 1910 .....	<b>£10 0</b>
<b>QUADRANT</b> , 3 h.p., vertical engine .....	<b>£5 10</b>
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New 1912 B. and B. Carburettor .....	<b>23/6</b>
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Long Handle-bars, dropped ends .....	<b>5/6 and 6/6</b>
Coronet lamp brackets up to 5 h.p. ....	<b>3/3 and 4/6</b>
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## THE PORTLAND SIDECAR

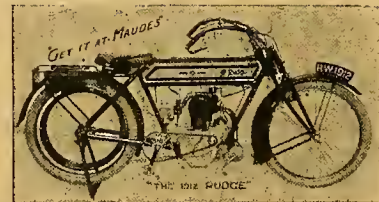


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### MOTOR BICYCLES FOR SALE.

**TRIUMPH**, free engine, F.R.S. lamp, horn, Dunlop and Poley tyres, new Sep., 1909; £32.—Heaton, Jeweller, Atherton, Lancashire. [X3572]

**31 h.p. Humber** and Sidecar, 2-speed, free engine, just 32 overhauled, all accessories; £28, or nearest.—Bpworth House, Summerseat, near Bury. [X3635]

**TRIUMPH**, 1907, low, with 1909 tank, carburettor, forks, saddle, excellent condition; bargain, £22.—Kenyon, 56, Portland St., Southport. [X3714]

**ENFIELD**, late 1911, 21 h.p., perfect condition, splendid hill-climber, new tyre, spares; £28.—T. Gretton, 42, Billinge St., Blackburn, Lancs. [X3645]

**1912 Scotts** ready for delivery, 2 in stock, £65; 1912 Rudge Multi in stock; exchange offers wanted.—Everingham Bros., Pocklington. [X3646]

**31 h.p. Ball Bearing Overhead T.T. Matchless**, painted red, 3 months old, excellent condition, very fast; £45.—Ernest Abram, Stanley House, Stockport. [X3611]

**1911 P. and M.**, colonial, spares, good condition, 26x24 Rides heavy cover, 7ft. 6in. L. Lyso; offers.—Lockwood, Cromwell Rd., South Bact. [X3776]

**1912 31 h.p. 2-speed Bradbury**, only run 400 miles, perfect order; owner buying car; any reasonable offer.—Snowden-Smith, Hulme Barracks, Manchester. [X3512]

**4 h.p. Twin Chater-Peugeot**, Bosch, h.b.c., Clyno pulley, new Michelin, Continental, take sidecar, excellent condition.—Myrtle Villa, Church Rd., Urmston. [X3129]

**1912 Triumph**, clutch model, with Lucas lamp, horn, spares, Palmer cords, only used 300 miles, as new; bargain, £50.—Thompson, 83, Aulaby Rd., Hull. [X3708]

**1911 5 h.p. Rex de Luxe**, Whittle, accessories, insurance policy, £35; Montgomery cane sidecar, lamp, toolbox, £6.—Beesley, Charlestown Rd., Blackley. [X3756]

**N.S.U.**, 1910-11, 6 h.p. twin, 2-speed, Cowey, lamp, horn, spares, done 4,000 miles, excellent condition; bargain, £50.—8, Brainerd St., Tue Brook, Liverpool. [X3693]

**2 h.p. Minerva**, m.o.i.v., h.b.c., new Dunlop cover and tube, new Watawata, low, fast, reliable, carrier-stand, lamp, horn, etc.; £9.—80, Church St., Middlesbrough. [X3486]

**5 h.p. Twin Kerry**, long, low, grey, Bosch mag., hot stuff, and new sidecar, quick detachable joints; £30; by appointment.—10, Crescent Rd., Birkdale, Southport. [X3520]

**TRIUMPH**, 1912, roadster model, Lucas lamp, horn, spares, condition equal new; expert examination if required; would ride 50 miles to genuine buyer; £40.—167, Wigan Lane, Wigan. [X3627]

**T.A.C.**, 1911, 4-cyl., most luxurious mount made, spring frame, 3-speed, shaft drive, machine and tyres splendid condition; sacrifice, £32.—Florn, 58, Brook St., Bradford, Yorks. [X3754]

**31 h.p. Rex**, mag., with Binks 1912 carburettor, belt and tyres as new; nearest £20; 8 h.p. twin exchange considered, any condition.—Asa Lum, Stansfield Hey, Ripponden, near Halifax. [X3727]

**TRIUMPH**, 1909 model, perfect condition, engine overhauled, new Dunlop and Palmer tyres, new Dunlop belt, all spares, take sidecar; £25, offer.—Ashworth, Cambridge Place, Todmorden. [X3046]

**SALE**, July, 1912, 7 h.p. Indian, free engine, T.T. handle-bars, Jones 25/5 speedometer, Lucas lamp, horn, spare cover, 2 tubes, many other spares; cost over £75; as new, unscratched; sell £60.—Below.

**1912 21 h.p. Hazlewood**, Armstrong 3-speed gear, lamp, horn, other spares, only 3 weeks old, ridden a few miles; sell £45; owner giving up motor cycling; many spares to be cleared out; any examination or trial any time.—Address, 146, Manchester Rd., Rochdale. [X3553]

**1912 7 h.p. Indian**, 2-speed, free engine, complete with horn, pump, tools, spare inner tube, and other spares, in new condition, been used just over 2 months; accept £60.—R. King, Ellesmere Mills, Wigan. [X3521]

**TO the Trade**—We are prepared to supply any of the first-class motor cycles that we are agents for at a big discount off list price. Let us have your enquiries at once. Lists free.—Hitchens' Ltd., Morecambe. [X4307]

**N.S.U.**, 3 h.p., 1911, Bosch mag. and B. and B. carburettor, h.b.c., spring forks, good tyres, splendid condition; owner giving up; £12/15 lowest; no offers; trial here.—Crook, Music Shop, Lower Ince, Wigan. [X3626]

**WE** still have a few guaranteed new and latest 1912 models to dispose of at bargain prices to clear our season's stock, including 3-speed Rover, 3-speed Colonial New Hudson, 2-speed Bradbury, clutch 4 h.p. Rex-Jap, standard Kerry-Abingdon, two clutch Kerry-Abingdon, A.C. Sociable; if you want one of these get into touch with us immediately.—Northern Depot, Ltd., "Everything Motorish," Leice St., Liverpool. [X2064]

**GREAT Sale** 2nd-hand Motor Bikes, must be sold.—21 h.p. J.A.P., £25/10; 21 h.p. Rex, mag., £12; 31 h.p. Triumph, mag., £17; 2 h.p. Moto-Reve, free engine, 1910, £14/10; 3 h.p. 4-cyl. F.N., with 2-speed gear, £18/18; 1910 Triumph, new condition, £26; 1909 P. and M., 3 h.p., with 2-speed and sidecar, new condition, £36; 1910 Douglas, 4 h.p.; 1910 Rex, with 2-speed gear, £20; 1912 Rex and Sidecar, practically new, £50.—Motor Cycle Exchange, 160, Young St., Sheffield. [X1000]

## EXCHANGES

### EASY PAYMENTS

ON ANY OF UNDERMENTIONED:

1912 SCOTT	£65
1912 REX (sidette), 6 h.p.	£75
1912 REX (de Luxe), 6 h.p.	£62
1912 REX (sidette), 4 h.p.	£70
1912 REX (de Luxe), 4 h.p.	£58
1912 ARIEL, 3-speed, 3 1/2 h.p.	£55
1912 RUDGE (free engine)	£55
1912 RUDGE (multi)	£60
1912 ZENITH, 3 1/2 h.p.	Gns. 53
1912 ZENITH, 6 h.p.	Gns. 67

All Brand New and for Immediate Delivery.

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<b>PREMIER</b> , 3 1/2 h.p., 3-speeds, 1912 model	£48
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<b>P. &amp; M.</b> , 1911, 2-speeds, Cowey motor, Milford sidecar. A beauty	£55
<b>A.C.</b> , Sociable, 1912 de Luxe model, hood, screen, All lamps. Like new	£85
<b>REX</b> , 3 1/2 h.p. 1911 model, cone clutch, overhauled	£27
<b>REX</b> , 3 1/2 h.p. de Luxe, as new, with sidecar, 1910 model	£33
<b>T.A.C.</b> , 6/8 h.p., four cylinder, 3-speeds, shaft drive, fine condition	£36
<b>A.J.S.</b> , 3 h.p., twin, just been overhauled and re-enamelled	£24
<b>F.N.</b> , 2 1/2 h.p., 1911 model, 2-speeds, shaft drive, very good order	£26
<b>SCOTT</b> , 3 1/2 h.p., 1910, 2-speeds, entirely water cooled, kick start, Milford sidecar	£38
<b>F.N.</b> , 5/6 h.p., four-cylinder, exceptionally good order	£26
<b>CLYNO</b> , 5/6 h.p., 1912 model, with Milford cane sidecar	£55
<b>MOTO REVE</b> , 2 h.p., twin, low, Druid overhauled	£17
<b>MOTO REVE</b> , 2 1/2 h.p., grey finish, 1910 model, twin	£22

Many others. Send for full list.

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### 6 h.p. TWO-SPEED MODELS.

Specification.—1912 Bosch magneto, 2-speed gear, 1912 forks and footboards, 1912 B. and B. carburettor, 1912 belts, 1912 tyres, and, in fact, all improvements.

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8ft. 6in. Stanley Dermatine, zin., new		11/6
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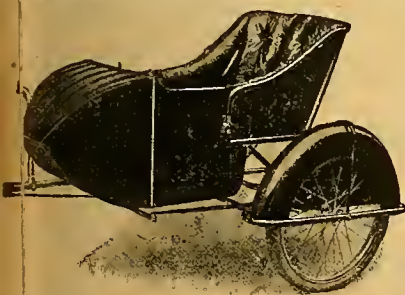
One Multi Rudge in stock. First cheque secures. Price £60.

RUDGE 2-speed and free-engine and adjustable pulley; engine starts with the back wheel on the ground	£56 10
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RUDGE standard	£48 15
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HUMBER, 1912, 2-speed, handle starting P. & M., as good as new, complete with sidecar	£45 0
NEW HUDSON Lightweight, 2½ h.p., 1912, like new, 3-speed gear, a bargain	£35 0
RUDGE, Standard 1912, 3½ h.p.	£38 0
PREMIER, 3½ h.p., 1912, complete with sidecar, 3 speeds	£55 0
NEW HUDSON, 3½ h.p., 1912, not done 300 miles, 3 speeds	£46 10
HUMBER, 3½ h.p., 2-speed and free engine, like a sidecar	£39 0
TRIUMPH, 3½ h.p., late 1908, a beauty	£26 0
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LINCOLN ELK, 3½ h.p., 2-speed and kick starter	£36 0
PREMIER, 3 speeds, 1912, complete with sidecar and numerous spares	£54 0
REX, 1908, 3½ h.p., h.b.c.	£16 0
P. & M., complete with 9 guinea sidecar	£32 0
REX, 1910, 5-6 h.p., 2-speed, and free engine complete with sidecar	£36 0
F.N. Lightweight, 1911-12, shaft drive, shop-soiled, complete with £10 worth of spares	£38 0
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MINERVA, 3½ h.p., h.b.c., magneto ignition, spring forks	£15 0
TRIUMPH, 1907, 3½ h.p.	£20 0

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50/- down and 5/- per week secures the following:

QUADRANT, 3½ h.p., h.b.c.	£10 10
F.N., 4-cylinder	£16 0
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8-guinea Sidecar, second-hand	£4 4



As Illustrated, 10 GUINEAS. Write for Sidecar Catalogues. We claim to have the finest and strongest Sidecar on the market. No fear of wheel dropping off. WATFORD SPEEDOMETERS All Models. Liberal allowances made on old ones.

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Powell Street, HALIFAX.  
Telephone—433 National.  
Telegrams—"SCOTT, Powell Street, Halifax."

## MOTOR BICYCLES FOR SALE.

- 1912 Singer, 2½ h.p., done 1,000, spares, X'fall saddle, new belt in case, and tube, 1913 P. and M. lamp and generator, watch; £40.—Grimes, Kington, Warwick. [5075]
- 1912 Triumph, free engine, Palmer cords, self-sealing tube, P. and H. lamp, horn, spares, new condition; price £46.—Julian, Triumph agent, Cwgate, Peterborough. [X3755]
- LATEST Models.—Free engine Triumph, only done 50 miles, complete, 48 gns.; 2-speed Royal Enfield, done 300 miles, 40 gns.; 2-speed A.J.S., 24 gns.—West's Garage, Lincoln. [X3813]
- BRADBURY Motor Cycle, 3½ h.p., 1910 model, Bosch mag., B. and B. carburettor, Druid spring forks, Dunlop tyres, splendid order; bargain, £24/10.—Brown's, 12, Bull Ring, Birmingham. [X3679]
- 1911 Twin Rex De Luxe, 6 h.p., n.o.v., free engine, 2 speeds, spring forks, aluminium footboards, Bosch mag., fitted with handsome sidecar; sell turnout, £45.—Brown's, 12, Bull Ring, Birmingham. [X3680]
- TRIUMPH Motor Cycle, 3½ h.p., Dunlop tyres, mag., first-class order; sell bargain, £24.—Brown's, 12, Bull Ring, Birmingham. [X3681]
- MOTOSACOCHE, 2 h.p., single, mag., Druid spring forks, h.b.c.; bargain, £12/10.—Brown's, 12, Bull Ring, Birmingham. [X3682]
- TWIN Rex 1908 Motor Cycle, 5 h.p., Bosch mag., h.b.c., free engine, spring forks; bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham. [X3683]
- 1911 Rex, 3½ h.p., in splendid condition, just been overhauled, Bosch, Druids, footboards, cantilever spring seat, etc., most comfortable riding position; £25.—A. Holland, Clarendon St., Coventry. [X3669]
- 1912 Douglas, Model G, splendid condition, not done 2,000 miles, Lucas 50/- lamp set, 30/- X'fall saddle, horn, Lucas mirror, watch, plug, valve complete, all tools; £35; approval, or ride anywhere Lincolnshire Saturday, Sunday.—No. 1,302, The Motor Cycle Offices, Coventry. [X3547]
- COVENTRY Eagle, 4 h.p., Precision, countershaft, 2-speed model, Dunlop studded tyres, Bosch mag., B. and B. carburettor, Brooks saddle, brand new, perfect throughout, cannot possibly be repeated; further particulars on application; usual cash price, 59 gns., clearance price £50, carriage paid in United Kingdom.—Coventry Cycle Co., Coventry. [X3365]
- GENUINE Clearance Sale.—1911 Rover, free engine, perfect order, £35; 1911 Singer, free engine, lamp, horn, spares, £42, as new; also 1912 soiled models, Bradbury standard, Rudge free engine, Triumph free engine, Ariel 3-speed, Rudge Multi, Bradbury 2-speed and sidecar. Let me have your offers; stock must be cleared.—A. E. Chire, 364, Moseley Rd., Birmingham. [X3684]

## SECTION V.

- Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.
- MORGAN; immediate delivery.—Knaster, Cox, 29, Green St., Cambridge.
- SCOTT; immediate delivery.—Cambridge agents, Knaster, Cox.
- 1912 Triumph, shop-soiled, offers; 1912 Moto-sacoché, var. gear, offers; 1911 Moto-sacoché, offers, shop-soiled; 1911 Triumph, F.E., Palmer cord, tyres, lamp, generator, grand order, £40.—Knaster, Cox, 29, Green St., Cambridge. [X3790]
- 1912 Premier, 2½ h.p., new; list price £36, what offers?—Nash, Broad St., March. [X3698]
- TRIUMPHS, F.E., 1912, just delivered, £50; sole agents Rudge, Scott, Douglas; immediate deliveries.—Francis, Lynn. [X3742]
- CLEARANCE Lines in 1912 Rovers, Douglas, Bradburys, Zeniths, Triumphs, equal to new; also several good sidecars at bargain prices.—Young and Co., Newmarket. [5257]
- DOUGLAS, 1912, latest model, fitted with free engine, 2-speed, only ridden 200 miles, new June; jnying car; cost with accessories £52, price £45.—Hines, 216, Caldwell Hall Rd., Ipswich. [X3578]
- HAZLEWOOD Motor Cycle, 2½ h.p., J.A.P. engine, Armstrong 3-speed gear and free engine, as new, been used for demonstration, complete with lamp, horn, and tools; price £40.—Tom Mitchell, Trafalgar Road Cycle Depot, Great Yarmouth. [5072]
- TRIUMPH, free engine, 1911, ridden 2,000 miles only; Lucas lamp, Jones speedometer, horn, etc., splendid condition; £42.—Robinson's, Green St., Cam. [0145]
- TRIUMPH, 3½ h.p., 1909 pattern, free engine, recently re-pushed, with new belt, lamp, and horn; £33.—Robinson's, Green St., Cambridge. [0146]
- 3½ h.p., 1912 Pattern Premier Motor Bicycle, free engine, not driven 600 miles, really new; £42/10.—Robinson's, Green St., Cambridge. [0147]
- DOUGLAS Agents for Cambridge and Newmarket for Season 1912-13; Robinson's, Green St., Cambridge. [0148]
- ZENITH, 3½ h.p., 1912 Gradua gear, ridden under 1,000 miles, horn, mirror, spare belt, etc.; £44.—Robinson's, Green St., Cambridge. [0149]

## Collier's Motories,

Westgate, Halifax, England.

## 1912 BRADBURYS.

THE IDEAL SIDECAR MACHINES.

The greatest power in single-cylinder machines, giving maximum efficiency and freedom from attention.

3½ h.p., tourist	£48	3½ h.p., 2-sp., chain	£58 10
3½ h.p., 2-speed, belt	£55	3½ h.p., 3-speed	£58 10

SPECIAL EXCHANGE QUOTATIONS.

CASH, EXCHANGE, OR EASY PAYMENTS.

REX-JAP, 1912, 6 h.p., 2-speed, new	£71 8
CLYNO, 1912, Twin, 2-speed, new	Offers.
REX, 1912, 4 h.p., Tourist, 8½ x 95, new	£46 0
REX DE LUXE, 1912, 4 h.p., 2-speed, new	£56 0
HUMBER, 1912, 3½ h.p., 2-speed, new	£47 10
HUMBER, 1912, 3½ h.p., with sidecar, specially good condition	£34 10
INDIAN, 1911, 5 h.p., Clutch, sp. endid condition	£39 10
ANTOINE, 6 h.p., Twin, magneto, spring forks	£21 10
REX DE LUXE, 1911, 1 w.m., 2-speed, new	£53 10
1912 gear and fittings	£34 gns.
REX, 1911, 3½ h.p., Tourist, new and unused, 1912 waterproof magneto	50 gns.
REX DE LUXE, 1911, 3½ h.p., 2-speed, and Sidecar, very smart lot, with makers' guarantee, brand 1 ew.	£8 10
KERRY, 2½ h.p., runs well	£29 10
REX, 1911, 3½ h.p., Tourist, very reliable	£35 0
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REX, 1910, Twin, special finish	

## SPECIAL OFFER.

1912 2-speed 2½ h.p. REX Junior de Luxe. Only had road tests, accept £32 10 Particulars on application

QUADRANT, 3 h.p., with accessories	£7 15
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REX, 1911, 3½ h.p., Tourist, 100 miles only	£32 10
REX, 5½ h.p., Twin, spring forks	£16 10
MINERVA, 4½ h.p., Twin, spring forks	£16 10
REX, 1910, 3½ h.p., Plate Clutch model, 1911 Druid pattern forks	
OLYMPIC, 3 h.p.	£10 10
MOTO REVE, 2 h.p., single-cylinder, very fine condition	£19 10
REX, 1909, 3½ h.p. model, very good and smart	£22 10
BAT, 3½ h.p., magneto, spring frame and forks	£16 10
TRIUMPH, 3½ h.p., magneto, free engine model	£35 0
QUADRANT, 3 h.p., wants attention, clearance price	£4 15
REX, 3½ h.p., light and low, splendid running order	£12 10
REX, 3 h.p., spring forks, wants attention	£4 15
F.N., 1911-12, 4-cylinder magneto	£29 10
WOLSELEY, 2-seater car, 16 h.p., 4-cylinder, recently overhauled	£29 10
MONOCAR, 4½ h.p., Rex engine, W.C., 2-speeds, wants slight attention	£13 10
REX DE LUXE, handle starting, good tyres, less engine	£7 10

## COLLIER'S 1912 SIDECARS.

"Popular," Clipper or Continental tyre	£5 5 0
"Superbe" type, with best tyre, apron, etc.	£6 6 0
Side-entrance body, as illustrated	£7 10 0
Ditto, with best coach-built body	£7 12 6
Improved Quick Detachable joints, Cranked Extra Strong Back Axle and Spindle to all Models. Prompt delivery to suit Rexas, Triumphs, N.S.U.'s, Indians and any other make.	

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ALL MODELS OF TRIUMPH, BAT, DOUGLAS, CLYNO, HUMBER, IVY, NORTON, RUDGE, ROVER, P. & M., NEW HUDSON, ZENITH, ENFIELD, MATCHLESS, SCOTT, SINGER, ETC.

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OVERHAULED AND GUARANTEED

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1227	BRADBURY, 3½ H.P., 2-SPEED. Belt drive, lamp, horn, and tools, like new..	£42
1203	IVY PRECISION, 3½ H.P. T.T. MODEL. Ridden about 100 miles .....	£38
183	NEW HUDSON, 3½ H.P., 3-SPEED GEAR, SHOP-SOILED ONLY .....	£55
96	NORTON, 3½ H.P. STANDARD MODEL, SHOP-SOILED ONLY .....	£44
1175	ZENITH, 3½ H.P. In perfect order. Lamp, horn, and tools .....	£44
1147	ZENITH, 3½ H.P. Hardly used. Lamp, horn, and tools .....	£46
1188	ZENITH, 6 H.P. Beautiful order. Lamp, horn, and tools .....	£62

### 1911.

1225	TRIUMPH, 3½ H.P. Mabon clutch. Lamp, horn, and tools .....	£38
1229	TRIUMPH, 3½ H.P. CLUTCH MODEL. Lamp, horn, and tools .....	£42
1173	BAT, 6 H.P. New condition. Lamp, horn, and tools .....	£39
1142	BRADBURY, 3½ H.P. Fine order. Lamp, horn, and tools .....	£34
1204	BRADBURY F.E., 3½ h.p. All accessories .....	£39
1207	F.N., 4-CYLINDER, 5-6 H.P., 2-SPEED. Lamp, horn, and tools .....	£38
1217	HUMBER, 2½ H.P., 3-SPEED. Splendid order. Lamp, horn, and tools ..	£32
1208	SCOTT, 2-SPEED, 2-STROKE, 2-CYL. water-cooled. Suitable for a lady .....	£44
1192	PREMIER, F.E., 3½ H.P. Fine order. Lamp, horn, and tools .....	£38
1200	ZENITH, 6 H.P. Splendid for sidecar. Lamp, horn, and tools .....	£52
1149	ZENITH, 3½ H.P. Good appearance. Lamp, horn, and tools .....	£38
1133	ZENITH, 3½ H.P. Exceptionally good order. Lamp, horn, and tools .....	£41

### MISCELLANEOUS.

1091	1910 SCOTT, 3½ H.P., 2-SPEED, 2-STROKE. Lamp, horn, and tools .....	£28
1211	4 H.P., STEVENS, Magneto, H.B. control, spring forks, lamp, horn and tools ..	£16
1221	1910 PREMIER, 3½ H.P. 2-CYL. Lamp, horn, tools. Most excellent condition ..	£29
1219	1908 F.N., 4-CYL. 1912 carburettor and clutch. Lamp, horn, and tools. Perfect condition .....	£22
1154	1903 F.N., 4-CYL. In perfect order. Lamp, horn, and tools .....	£19

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## MOTOR BICYCLES FOR SALE.

### SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

1912 3½ h.p. Clutch Model Radze, little used, as new, lamp, Cowey, spares; £45, or nearest offer.—Hole, Greenhill, Evesham. [X3721]

BRADBURY, chain drive, 1912, perfect condition, splendid sidecar machine; £47/10.—Hereford Motor Co., Hereford. [X3671]

DOUGLAS, 2-speed, June, 1912, very fast, perfect condition, accessories, spares; best offer over £40.—57, Newport Rd., Cardiff. [X3661]

3½ h.p. F.E. Premier, 1911, Lucas lamp, horn, and 32 tools, splendid condition, just overhauled; what offers?—1,310, The Motor Cycle Offices, Coventry. [X3648]

3 h.p. Triumph, batt. ignition, h.b.c., B. and B. carburettor, new belt, in perfect running order; £16, or nearest offer.—Barnes, 38, Monnow St., Monmouth. [X3661]

RUDGE Multi, July, 1912, unsoiled, unpractised, 500 miles; cost with extras £62, nearest offer £52; expert examination and trial invited.—Pritchard, Chester Rd., Kidderminster. [X3661]

F.F., brand new, delivered August 18th, 1912, 5 h.p., 2-speed, H.P. clutch, steel-studded Englebert covers both wheels, all latest improvements, butt-ended tubes in tyres, one butt-ended tube spare, Miller lamp and generator, best nickel Serpentine horn; paid £60/11. will sell for £55; no offers.—Box L8,636, The Motor Cycle Offices, 20, Tudor St., E.C. [X3667]

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

5 h.p. Twin V.S. Motor Cycle, late 1910: £27/10.—Coles, Mill, Selborne, Hants. [X3761]

GOOD 2½ h.p. Cycle, new H. plain coil and flash; 49.—H. Counsell, Faringdon, Berks. [X3575]

TRIUMPHS, 2 in stock, free engine models, just delivered; no waiting.—Wire: Ginger, Motors, Banbury. [X2813]

£34.—1912 3½ h.p. Precision, June, as new; approval, deposit.—Norman, Desborough Rd., Wycombe, Bucks. [X3088]

NEW HUDSON, 2½ h.p. J.A.P., 3-speed, new condition, done 1,300 miles; £35.—Wheeler, Rubber Works, Melksham. [X3602]

MATCHLESS, 3 h.p., No. 7 passenger model, new; 65gns. cash.—Freeman, 151, Barton St., Gloucester. [X3173]

DOUGLAS, 1911, in perfect order throughout, all accessories; £27/10; only requires trying.—Gibb, Gloucester. [X3308]

5 h.p. Rex, free engine, handle starting, h.b.c., in good condition; a bargain, £25.—H.N., Silverburn, King Edward St., Slough. [X3223]

2½ h.p. Twin Lightweight Moto-Reve, as new, just overhauled by makers; £20.—Simpson, Sandhurst, Bucks. [X3209]

BRADBURY, 1911, good condition, back tyre nearly new, Garner, P. and H. lamp, spare valve, tools; 28gns.—Hunt, Aycliffe. [X3189]

DELIVERIES from stock Bradbury, chain-driven, 2-speed, £58/10; Douglas, model K, £50.—Gough's Motors, Gloucestershire. [X1789]

F.N., 2½ h.p., 2-speed, late 1911, condition and order excellent, XV all saddle, spares; £28, no offers.—Child, Exceise, Northleach. [X3276]

N.S.U., 3½ h.p., mag., Albion clutch, recently overhauled and rebushed, tyres almost new; bargain, £17.—65a, Park St., Bristol. [X3624]

5 h.p. Rex Speed King, new condition; £24, or would exchange 2-speed machine.—Box L8,651, The Motor Cycle Offices, 20, Tudor St., E.C. [X3084]

ZENITH, 3½ h.p., spring frame, Gradua gear, accumulator ignition, comfortable machine; bargain, £15.—Poate, 102, West St., Havant, Hants. [X3248]

F.N., 4-cyl., Bosch, spring forks, 1912 B. and B. ready for fitting, perfect condition; £16, real bargain.—Warrilow, Beckford, Tewkesbury. [X3220]

INDIAN, 7 h.p., 2-speed, 1912, just bought, only done 150 miles, as new, guaranteed; what offers?—No. 1,255, The Motor Cycle Offices, Coventry. [X32677]

5 h.p. Twin Rex, late 1909, all fittings, in excellent condition, £26; also 8ft. length lin. Stanley belt, unused, £14/6.—17, Craveo St., Newbury. [X3232]

1912 T.T. Rudge, absolutely perfect, low mileage, carefully driven, tyres and belt all perfect, all tools, etc.; what offers?—83, Northgate Street, Gloucester. [X3238]

PREMIER Motor Cycle, 1912, 2-speed, free engine, splendid sidecar machine, not done 200 miles, new in May; what offers?—S. B. Weston, High St., Slough. [X3548]

TRIUMPH, 1912 model, T.T. roadster, only run 1,600 miles, absolutely unscratched, and engine better than new; cost, complete with accessories, £54, accept £46.—Reynolds, The Lodge, Cosham, Hants. [X3716]

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For Keen Price in famous machine of the most reliable make are offered in

# TAYLOR'S

## STOCK-TAKING CLEARANCE

If you want a motor cycle or sidecar, write for our special list of New, Shop-soiled, and Second-hand Machines.



### SELECTIONS FROM OUR LIST.

#### FIRST CHEQUE SECURES.

1912 6 h.p. REX DE LUXE, 2-speed, F.E., handle-starting, 3 months old	£45 0
1912 3½ h.p. T.T. TRIUMPH, as new	£42 0
1912 3½ h.p. BRADBURY, Clutch Model, as new	£47 10
1912 3½ h.p. T.T. RUDGE, fine condition	£37 0

TAYLOR'S ASBESTOS AND HORSEHIDE GLOVES.—Splendid value. For autumn wear. In reindeer ..... Price 4/8

In asbestos ..... 5/6 Gauntlets ..... 1/- pair extra

WATERPROOF SUITS. Double-breasted, wind cuffs, double texture, separate legging, 25/6 complete suit.

With seatless trousers .. 30/- complete suit North Road Model ..... 37/6 Sent on approval with pleasure.

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### 1000 FOOT BEAM F.R.S.

Liberal allowance made for your old lamp in part payment. Special London Agents for F.R.S.

800ft. set .....	58/6
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TAYLOR'S P. & H. SET, New Model.—Magnifying lenses, adjustable bracket.

For powerful machines ..... 40/- For medium power machines ..... 30/-

Desirable Bargains in Motor Horns TAYLOR'S POST HORN.—Unequalled in tone and reliability. Extra strong clip.

Price, complete ..... 13/4 " with dust sieve ..... 14/4 " Medium size, with dust sieve ..... 12/4

20 Triumph Pattern Horns. Usual price, 6/3. sale, 4/9.

12 Rey Pattern Exhaust Whistles. Advertised at 21/-; sale, 7/6.

16 Nightingale Exhaust Whistles, foot-operated. Usual price, 15/6; sale, 12/6.

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Or, with air cushion draught and dust excluding, 3/9 pair.

Large assortment in stock. SPEED INDICATORS.

1912 Cowey, hardly used. Usual price, £4 4s. sale, £3 10s.

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WIND-SCREENS FOR SIDECARS.—Very light easily fitted, made in transparent celluloid adjustable. Price 35/-.

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21a, Store Street,

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Phone: Wires: 10557 Central. "Dynametro, London."



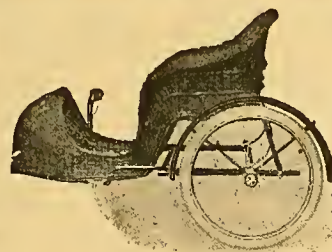
### MOTOR BICYCLES FOR SALE.

- 1910** Triumph, 3 h.p., standard, in perfect condition; £35.—S. L. Sale c/o Kerridge's Garage, Alton, Tants. [5119]
- 1910** Douglas Lightweight 2 belts, spares, perfect; £22, or exchange with little cash for higher power.—Membry, 42, Latimer Rd., Winton, Bourne-mouth. [5105]
- ROYAL** Enfield, 2 h.p., 2-speed, free engine, 1911, with footboards, and side wallets, tyres, etc., in perfect condition; £36, or near offer.—Bracher, Red-liff St., Bristol. [X3677]
- 1912** 2 h.p. Douglas, 2-speed, free engine, kick starter, tyres unpunctured, positively brand new condition; accept £42 for quick sale.—Cox, 154, High Road, Portsmouth. [5040]
- SCOTT**, 1912, 2-speed, free engine, only run 1,600 miles, perfect condition throughout, Palmer cord gears; exceptional opportunity; £54, lowest.—Morris Garage, Oxford. [X3656]
- TRIUMPHS**, 1912, free engine models in stock; cash or easy payments.—Morris Garage, Oxford. [X3657]
- MORRIS** Garage, Oxford.—New showrooms, Queen St. Largest stock of new and 2nd-hand machines in the country; large stock of accessories and spare parts always carried. [X3658]
- DOUGLAS** Model K Motor Cycles in stock, ready for immediate delivery; £50.—The Motor Cycle Depot, 3, Palmerston Rd., Boscombe, Tel.: 1248 Bourne-mouth. Telegrams: Alford, Boscombe. [2119]
- DOUGLAS**, 1912, model K, clutch, 2 speeds, kick starter, perfect condition, run 1,700 miles, speedometer (Covey), lamp and generator, horn, Brooks saddle, extra bags, inner tube, tools, etc.; £45.—Dr. Cass, Naval Barracks, Portsmouth. [X3561]

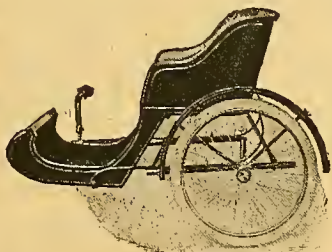
### SECTION VIII.

ertford, Essex, Middlesex, Surrey, Kent, and Sussex.  
OTTENHAM.

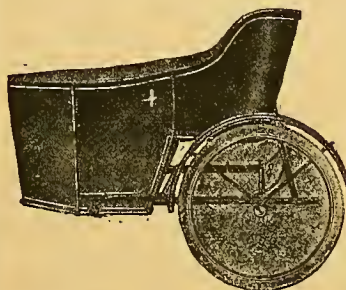
- CLYNO**, £68/5; F.E. Triumph, £55; 3 h.p., 2-speed; Humbers, F.E. Bradbury £54/10; new 1912 F.E. Bradbury, also 1911 F.E. Ridge, best offer; Moto-cocle, £22; 1910 Fafair, £22; sidecars for all machines from £5/6 complete to 12 gns.—The Stamford Hill Motor Co., 128, High Rd., Tottenham. Phone: 182 Tottenham. [X3786]
- AT**, 1912, 3 h.p., 2 months old; open to quick deal.—Bunting, Wealdstone. [X3685]
- EE** if Bunting has the thing you want, he generally has.—Motor Exchange, Wealdstone. [X3686]
- 4** h.p. Minerva, in good running order; £7/10.—9, Dickinson Sq., Croyley, Herts. [X3718]
- 1** h.p. Special T.T. Triumph; £30.—58, Lombard Grove, Camberwell, London. [5094]
- BROWN**, 2 h.p., in perfect running order; £7.—2, Barrett's Grove, Stoke Newington. [5130]
- 3** h.p. Clyde, mag., spare cover and belt; offers, cash.—9, Bridgeman Rd., Teddington. [5102]
- BRADBURY** Agents, Bright and Hayles, 73, Church St., Camberwell Green. Phone: Hop 50. [X3505]
- BROWN**, 3 h.p., mag., good order, £15; with sidecar, £17/10.—24, Sidney Rd., Forest Gate. [X3591]
- COTT**, 1911, perfect, little used, with sidecar; lowest £52/10.—32, Lower Kennington Lane, S.E. [5212]
- 12** Forward Twin, Armstrong 3-speed, as new; £35.—Motorist, 20, Chavering Av., Barnes. [5096]
- 2** h.p. Lightweight Minerva, Chater fittings, low, fast; £5, or offer.—Berry, 125, Canal Rd., Mile End. [X3541]
- 12** Free Engine Triumph, new August, not ridden 80 miles; what offers?—Bryan, 24, Aldgate, E.C. [X3565]
- 11** Bradbury, very little used, perfect order; £32.—Dean, 4, St. Augustine's Rd., Canterbury. [X3697]
- 1** h.p. Antonio-Chater-Lea, 2-speed, handle starting, as new; bargain, £14.—208, Camberwell Rd., S.E. [5161]
- 1** h.p. Auto Motor, B.B. Chater-Lea, good condition; £11/10.—79, Aldred Rd., Kennington. [5250]
- 11** Triumph Clutch Motor, studded tyres, Whittle belts, as new; £40.—81, Stoke Newington Rd. [X3736]
- DOUGLAS**, 1912, model D, ridden about 1,000 miles, practically new; £36.—W. Shutes, 3, Wilbury Av., W. [5070]
- DOUGLAS**, 1910, splendid condition, Unley tyres, nearly new; £23.—H., 38, Chaucer Rd., Waltham-w. [X3692]
- TRIUMPH**, 3 h.p., with speedometer, mirror and watch, new condition; £33.—47, Camden Grove, W. [X3735]
- 12**—3 h.p. Chater-Fafair, h.b.c., mag., Amac, dropped frame, wide bars; bargain.—7, Park Sq. Mews, W. [5280]
- 1** h.p. Clyde, mag., B. and B., h.b.c., running order; £28/15 or best offer.—Speechley, 45, Church Rd., W. [5236]



Model No. 2. £6-6-0.  
Weight 60 lbs.



Model No. 5. £7-12-6.  
Weight 70 lbs.



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—Beauty of design, luxurious riding, lightweight, great tyre economy, are distinguishing features of the P.M.C. Sidecar. Made to fit any machine, with coach-built bodies any special colour required.

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### MOTOR BICYCLES FOR SALE.

- WANDSWORTH**—Rex, latest 1911 T.T., 6.7 h.p. twin, m.o.v., mag., fast, new condition; £32/10.—Below.
- WANDSWORTH**—V.S., 1910, genuine, 7.9 h.p., mag., twin, 2 speeds, cream finish, perfect; £38/10.—Below.
- WANDSWORTH**—Roe, 1909, 4 h.p., m.o.v., mag., free engine, handle starting, like new; £19/19.—Below.
- WANDSWORTH**—F.N., latest 1911, 4 cys., mag., drip feed, first-class order; £35.—Below.
- WANDSWORTH**—Indian, latest 1910 T.T., 5.6 h.p. twin, m.o.v., mag., very fast, perfect.—Below.
- WANDSWORTH**—Rex 1909 5.6 h.p. Twin, mag., 2 speeds, handle starting, new condition; £28/10.—Below.
- WANDSWORTH**—Bat-Jap 9 h.p. Twin, mag. in tank, one sidecar machine; sacrifice £29/10.—Below.
- WANDSWORTH**—N.S.U., 4 h.p., m.o.v., mag., 2 speeds, free engine, runs well; sacrifice £19/19.—Below.
- WANDSWORTH**—Roe, 1909, 4 h.p., m.o.v., mag., Druids, 2 speeds, handle starting; cheap, £26.—Below.
- WANDSWORTH**—F.N. Lightweight, mag.; bargain, £12/15; exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth Station. [X3670]
- F.E. Triumph**, 1912, not soiled; must sell; what offers!
- 12** Clyno, F.E., kick starter, 2-speed, not been on the road; £62.—88, Fairleigh Rd., Stoke Newington. [X3691]
- 2** h.p. Minerva, Bosch mag., B.B., very low, and good running order; £13.—13, North St., Barking. [X3651]
- 1910** Bat-Jap, 3 h.p., Whittle belt, horn, etc., perfect order; £26.—Baylis, Crossness, Abbey Wood Kent. [5225]
- 2** h.p. Werner, perfect running order, leather belt, horn, good tyres; £7.—239, Broadway, Cricklewood. [5142]
- 1910** Triumph, new belt, Lucas lamp and generator, spares; £28.—Nicholls, Raston Mews, Notting Hill, W. [8811]
- 1912** Triumph, clutch model, only ridden 100 miles; owner must sell; £48.—Verrier, Aerodrome, Hendon. [X3607]
- SINGER** Moto Velo, 2 h.p., with accessories, good as new; £25 cash.—Apply, Rayner, 20, Windmill St., Gravesend. [X3665]
- REX**, 3 h.p., 1909, mag., 2 speeds, free engine, h.b.c., perfect; trial; £26.—58a, Colebrooke Row, Islington Green. [5118]
- BRADBURY**, late 1911, splendid condition, lamp, horn, all accessories; £30.—Sterling, Sidney Rd., Stockwell. [X3738]
- TRIUMPH**, 1911, free engine, Lucas lamp and generator, 1912 spring forks, 1912 Chater-Lea 10gn. sidecar; £45.—Sterling, Sidney Rd., Stockwell. [X3739]
- TWIN** Zenith, 6 h.p., 1911 model, recently overhauled, perfect throughout; £50.—Wadde, 6, Quadrant, Weybridge. [X3762]
- TRIUMPH**, 1912, clutch model, nearly new; £44, no offer.—Wadde, 6, Quadrant, Weybridge. [X3763]
- DE DION**, 1912, 2 h.p., mag. model, soiled only; £26; must be sold.—Wadde, 6, Quadrant, Weybridge. [X3764]
- PEUGEOT**, 5.6 h.p., mag., fine order; £25; good sidecar machine.—Wadde, 6, Quadrant, Weybridge. [X3765]
- CROYDON**—6 h.p. Enfield and sidecar in stock, also 2 h.p. models; exchanges entertained.—The Croydon Motor Mart.
- CROYDON**—New 6 h.p. Zenith, shop-soiled only; £62.—The Croydon Motor Mart, 86, Southend, Croydon.
- CROYDON**—Handy Hobart, shop-soiled only; £25.—The Croydon Motor Mart.
- CROYDON**—New Hudson, shop-soiled only; £43.—The Croydon Motor Mart, 86, Southend, Croydon.
- CROYDON**—Late 1910 Premier, 3 h.p., speedometer, perfect condition.—The Croydon Motor Mart, 86, South End, Croydon.
- CROYDON**—4 h.p. twin Minerva, Bosch mag., complete with sidecar; £28.—The Croydon Motor Mart (exchanges entertained, machines bought and sold), 86, South End, Croydon. Tel.: 797 P.O. Croydon. [5207]
- MOTOSACOCHE** h.b.c., spring forks, Hellesen, splendid condition; nearest £20.—Dyke, Stoughton, Guildford. [5132]
- 5** h.p. F.N. and Sidecar, recently overhauled, Bosch, good tyres, accessories; £25.—Shepherdson, Angmering, Sussex. [X3552]
- HAZLEWOOD**, 2 h.p. J.A.P., 1912, 3-speed, free engine, tip-top condition; £40 or offer.—184, Gt. Portland St., W. [5061]
- TRIUMPH**, 1911, complete with tools, spares, lamp, Cowey speedometer, excellent condition throughout; £34, no offers.—93, Ressel Rd., West Ealing. [X3742]



**MOTOR BICYCLES FOR SALE.**

- 31hp. Motor Cycle, m.o.v., footboards, just 24 enamelled; quick sale, £14.-881, Lea Bridge Rd., Walthamstow. [5205]
- 31hp. Minerva, mag., £14; 31hp. Kerry-Abingdon, 24 1911, as new, £32.—Bennett, 116, Rathbone St., Canning Town. [5166]
- SINGER, 31hp., 1912, free engine, unscratched, owner buying cyclear; £48.—119, Cambridge Gardens, North Kensington. [5182]
- TRIUMPH, late 1911, little used, nearly new condition; sacrifice, £34, bargain.—51, High St., Tunbridge Wells. [X3744]
- 31hp. Minerva, 1908, £15; 31hp. Triumph, 1910, £22; both in excellent condition.—Clifford Cant, Braiswick, Colchester. [0140]
- TRIUMPH, 31hp., mag., etc., 1907 machine, in thorough working order; £19.—Ketco Motorcycles, Smarden, Kent. [5135]
- SINGER Mag. Lightweight, 1911, in perfect order, hardly been used; £20.—Ketco Motorcycles, Smarden, Kent. [5136]
- NEW Hudson, 31hp., 1912 machine, 3-speed and free, model 111B, with or without sidcar, not done 500 miles; owner bought Morgan; bargain for quick sale.—Ketco Motorcycles, Smarden, Kent. [5137]
- If You Want Motor Cycle Bargains, see our ever-changing stock.—Ketco Motorcycles, Smarden, Kent. [5138]
- P. and M., October, 1911, perfect condition, all accessories, Kempshall tyres as new.—Taylor, 44, Deodar Rd., Putney. [5282]
- EXCELSIOR, B.B., new tyres, engine perfect, replated and enamelled, lamp, spares.—Driver, 104, Grove, Ealing. [5275]
- 24hp. De Dion, 1912, B. and B., guaranteed perfect, £29/10; also sidcar, £4/15.—35, Melrose Gardens, Malden. [5229]
- 24hp. Vindee Special, mag., excellent order throughout; must sell; first reasonable offer.—Rectory Farm, Gestingthorpe. [4114]
- TRIUMPH, 1909, absolutely perfect, new studded tyres and belt; great bargain, £25.—Squire, Broadway, Weybridge. [5245]
- DOUGLAS, 1911, excellent condition, 2-speed, lamp horn, veeder, new tyre and belt; £35.—165, London Rd., Southend. [5252]
- 5hp. Roc-Peugeot, 1910, 2-speed, Bosch, Whittle, F.R.S.; £24, or near offer.—Garaged, Meek's, 254 Archway Rd., Highgate. [5152]
- MINERVA, 24hp., m.o.v., footboards, new Grose non-skid, new belt; bargain, £9/10, or offer.—43, Bousfield Rd., New Cross. [4331]
- MOTO-REVE Twin, just overhauled, new Watawata, Lodges, tyre; £15, bargain; leaving England.—Francis, 20, Albany St., N.W. [5024]
- 1910 Tourist Rex, splendid hill-climber, Whittle belt head lamp set, complete machine; £21.—57, Poplar Walk Rd., Herne Hill. [X3555]
- F.N., 24hp., 2 speeds, free engine, shaft drive, condition perfect; any trial with pleasure; £26.—151, Beulah Hill, Upper Norwood. [5183]
- REX Twin, in running order, 3 accumulators, tyres fairly good; offers wanted.—Goldsmith, Asldown Park, Coleman's Hatch, Sussex. [5214]
- ZENITHS.—Now is the time to order 1913 models; guaranteed early delivery.—South Wimbledon Motor Co., 1, York Rd., Wimbledon. [X3723]
- STREATHAM.—31hp. free engine Triumph, 1910 model, splendid condition, new Pédley on back wheel; a bargain, £35.—Below.
- STREATHAM.—31hp. 2-speed Minneapolis, free engine, chain drive, new Clincher tyres, speedometer, lamp, etc.; £24.—Below.
- STREATHAM.—31hp. Bradbury, 1910 model, perfect order; sacrifice £32.—Arthur Mylam and Co., 42, High Rd., Streatham, S.W. 'Phone: 1451. [5261]
- 1911 F.N., 4-cyl., 5-hp., 2 speeds, excellent condition, £36; or with sidcar, new April last, £42.—Winscot, Albert Rd., Wimbledon. [X3766]
- 24hp. Chater-Lea-Kerry, rebushed, new horn, Helle-24 sen, 2 belts, tyres unpunctured, perfect; £7/15.—Sinclair, 40, Page St., Westminster. [5146]
- 41hp. Stevens, mag., B. and B., 2-speed, free engine, h.b.c., good sidcar machine; £18, or offer.—Radzan, 257, Bethnal Green Rd., E. [5041]
- TRIUMPH, 1910, splendid order, new Michelin and Service belt, complete with horn and tools; £30.—Rowe, 15, Ethelbert Rd., Wimbledon. [5221]
- 31hp. Ariel Cycle, m.o.v., B. and B. carburettor, new 34 belt, spring forks, tyres nearly new; £10/10.—H.S., 8, Clifton Hill, New Cross, S.E. [5269]
- TRIUMPH, 1911, F.E., absolutely perfect condition, lamp, horn, spares; £37/10, bargain.—J. J. White, Woburn, Holstein Av., Weybridge. [5304]
- KERRY, 31hp., perfect, new piston and cylinder, fast, little used, new Dunlops and belt; £15.—Dinmore, 9, High St., Wealdstone. [5266]
- WHITE and Poppe, 31hp., Chater, low, Palmer, B. and B., spares; £12, push bike and cash considered.—32, Lutwyche Rd., Catford. [5302]

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These are just a few samples, we have over a hundred others in stock. All are priced very low, are overhauled, etc.

1910 DOUGLAS, 2½ h.p. . .	£22
1911 DOUGLAS . . .	£27
1911 DOUGLAS, 2-speed . .	£33
1912 DOUGLAS, 2-speed . .	£42
1911 SINGER, 3½ h.p. . .	£30
1909 TRIUMPH, 3½ h.p. . .	£25
1911 PREMIER, 2 h.p. . .	£22
1911 BRADBURY, 3½ h.p. .	£32
1911 BRADBURY, 2-speed . .	£37
1911 PRECISION, F.E. . .	£25
1910 ENFIELD, 2½ h.p. . .	£19
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All above are Cash Prices, but instalments can be arranged for some of them if desired.

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COLMORE OILSKINS

Velvet-lined Collar, Wind Cuffs, and Belt

The Suit 21/- Complete.

When ordering, state chest and leg measurement.

"Triumph" Pattern Horns 5/- each.

'XL-ALL' SADDLES (The saddle for a long ride). 25/- and 30/- each.

COLMORE

35, Colmore Row, Birmingham.  
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261, Deansgate, Manchester.  
62, High Street, Leicester.  
45, John Bright St., Birmingham.

**MOTOR BICYCLES FOR SALE.**

- 24hp. Kerry, mag., 1911 Brown and Barlow, ne 24 Dunlop belt, good tyres, fine running order; £1 or offer.—Johnson, Manor Rd., Wallington. [514]
- TRIUMPH! Triumph! Triumph!—1912, free engine, in stock; immediate deliveries.—Offord and Sons, 94, Gloucester Rd., South Kensington. [507]
- TRIUMPH, 1912, 31hp., free engine model; instant delivery; £55, cash, or deferred payments.—John Barker and Co., Kensington High St., W. [X562]
- 31hp. Ariel, chain drive, Phoenix 2-speed gear, 14 32 forecar attachment, not quite complete; £10.—Stone, The Mount, Brighton Rd., Godalming. [502]
- 31hp. Motor Cycle, mag., Palmer eard tyres, running order, good machine; £12.—Please write, with Clascen, 12, Ulysses Rd., Hampstead, N.W. [509]
- 41hp. Quadrant, good condition, spring forks, new tyres, and spares; genuine bargain, £14, or near offer.—Woolgar, 11, Velindre Rd., Barnes. [517]
- PREMIER, 24hp., Armstrong, 3 months old, done 700 miles, perfect condition, all accessories; £50, sacrifice 40 gns.—W. H. Carver, Uppminster. [520]
- DOUGLAS, 1911, not run 300 miles, excellent condition, £29; Brown, 31hp., mag., B.B., £20; buying cyclear.—Jones, Victoria Rd., Woodbridge. [X347]
- PHELON and Moore, Ltd., 4, Percy St., W., have several 2nd-hand P. and M.'s for sale; particular on application, or can be seen at above address. [X677]
- 11hp. Clement Lightweight, 2-speed gear, nearly new 12 Clincher, perfect condition and running order £26/10, lowest.—Seen, 129, High St., Croydon. [X354]
- TRIUMPH, Oct., 1911, clutch model, in good condition, been well looked after, complete with many spares; £40.—Greswell, Aerodrome, Hendon. [X360]
- EAGLES.—N.S.U., 31hp., popular model, new as June as new mag., 1911 spring forks, adjustable pulley, new Dunlop belt, Palmer cord tyre; £24/10.
- EAGLES.—N.S.U. 3 h.p. Twin, latest pattern model spring frame, Bosch, m.o. valves, 2 speeds, free engine, nearly new; £34.
- EAGLES.—Motosacoche, 1910, Bosch, free engine, Druid forks, Whittle belt; £16.
- EAGLES.—N.S.U. 4hp. Twin, 1910, Bosch, m.o. valves, N.S.U. 2-speed gear and free engine, nearly new; £28.
- EAGLES.—New Hudson, 24hp., 1911, J.A.P. engine, Armstrong-Triplex 3-speed gear and free engine latest improvements; £33/10.
- EAGLES.—Bradbury, 1912, belt, 2 speeds and free engine model, new, slightly soiled; £50.
- EAGLES.—Excelsior, Chater-Lea, 31hp., low built vertical engine, h.b.c., adjustable pulley; £9/10.
- EAGLES.—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engine from £5/15, for Triumph £6/15, for Bradbury £7; trade supplied.
- EAGLES.—We have a few brand new 31hp. 1911 N.S.U. 65x88 Model de Luxe, just delivered, in machines for sidcar work, Bosch mag., 1912 spira forks and other improvements, finished in latest style complete with stand, carrier, tool case, full set of tools; £37; N.S.U. 2-speed gear £5/15 extra; Millford Herald sidcar with No. 1 torpedo body, £7/15 extra; deferred payments, exchanges entertained.
- EAGLES and Co., High St., Acton.—N.S.U. We London District Agency. Liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X370]
- INDIAN, 4hp., free engine, late 1911, splendid condition, carefully used; £37/10, or nearest.—Re mayne, Glendale, 41, Natal Rd., Bowes Park, N. [514]
- DOUGLAS, 24hp., 1911 standard, excellent condition, new P. and H. lamp and generator, horn mirror; £27, nearest offer.—44, Olive Rd., Cricklewood. [502]
- 1912 Premier, 31hp., Armstrong 3-speed, free engine P. and H. lamp, horn, and cyclometer, new May bargain, £48.—Star Garage, Amelia St., Walworth. [505]
- ANTOINE, 3hp., splendid condition, new Palm cord tyres, engine just overhauled, footboards cheap.—173, Malden Rd., Hampstead. After 7 p.m. [505]
- ZENITH-GRADUA, 31hp., 1912 model, only ride 150 miles, condition as new; owner bought low n.p.; £48, or near offer.—69, Drayton Gardens, S.W. [506]
- 1910 24hp. Moto-Reve Twin, Druid, Dunlop, 14 32 and B. Whittle, in new condition; £19/10, or near offer.—Skinner, 63, Bishop's Rd., Cambridge Heath. [510]
- 1910 Triumph, in perfect condition throughout X'All saddle, large head lamp, etc., been well kept; £36.—White, 5, Hargrave Rd., Upper Holloway, N. [528]
- ROVER, 1911, 31hp., clutch model, new Dunlop sp Avon tyres, front stand; accessories, perfect condition; any trial; £35.—W.P., 59, Tufnell Park, W. [X359]
- ZENITH-GRADUA, 31hp., 1911, decompressed backrest, footrest, mirror, all spares; any trial money wanted; £36.—Sutton, 31, Howley Place, Pa dington. [528]
- TRIUMPH, 31hp., mag., h.b.c., dropped frame, fast powerful, good hill-climber; exchange higher price or sell £22.—Agra, Portmore Park Rd., Weybridge Surrey. [521]



# THE MOTOR CYCLE

LEADERETTE:

## The Motor Cycle for Two.

**M**AN, as we have so often been told, is a gregarious animal, and motor cycling, like almost every other form of human activity, affords many proofs of this. After all, what is a motor cycle club but an expression of the universal desire for companionship? It is true that most of the members when they make their tours and runs are on solo mounts, but they have a common rendezvous, and at meal-times and after the day's trip they all meet together. Even here we find frequently that the motor bicycle is made to carry a passenger, and nowadays it is a common sight to see a girl seated on the luggage carrier or some form of seat.

The next stage in motor cycling companionship is the sidecar, and, although men frequently ride together on these machines, undoubtedly the great majority of sidecar passengers are ladies.

Last, but not least, we have the cyclecar—a very wide term which embraces almost any form of motor vehicle for two, from a couple of motor bicycles linked together up to something which can scarcely be distinguished from a motor car; indeed, as our readers know, the R.A.C. and A.C.U. definition of a cyclecar had to be drawn up, so that some sort of dividing line between the cyclecar and the motor car might be established, and already there are a number of machines which are about as near the border line as they can be, and very small modification in their construction bring them over it.

One of the strangest things about the cyclecar movement is that quite a number of people, many of whom ought to know better, seem to imagine that the cyclecar, quadcar, or quadricycle is a novelty—something which they have discovered, encouraged, or prophesied about, when, as a matter of fact, the quadcar is considerably older than *The Motor Cycle* itself. *The Motor Cycle* made its first appearance early in 1903, and about 1899-1900 the motor quadricycle, the antecedent of the cyclecar, was a proved and tested vehicle. No doubt many of our younger readers have never seen such a machine, so we may outline it briefly.

The frame was quadrilateral and fitted with four wheels, the front ones being sprung. The driver sat on a saddle and the passenger in a fore carriage. The engine was attached to the rear axle either behind or in front of the axle, and the transmission was direct by means of a straight pinion and gear wheel. A balance gear was employed, and the design of the axle was either tubular-enclosed, like modern car axles, or bridged like a pedal tricycle.

The levers connecting the stub axles of the front wheels to the steering column were designed to slightly gear down the steering, but it was not irreversible. The average touring speed of the vehicle was sixteen to eighteen miles an hour. With a single gear of 8 to 1 if this speed were exceeded the engine was prone to

overheat, but with an engine of about 350 c.c. quite steep hills were climbed with pedal assistance. Later models had water-cooled combustion heads and change-speed gears.

## Why the Quadricycle Died.

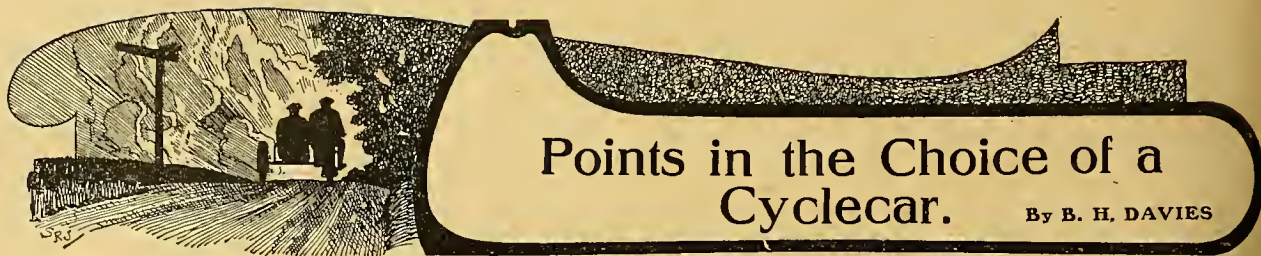
**I**T may be asked how it was that a machine which was well proved, and more than one of which ran successfully in the great and historical Thousand Miles Trial of the Royal Automobile Club of 1900, should have fallen into desuetude. We do not hesitate to say that the four main reasons were ignition, springing, seating, and price; had the quad of twelve years ago been provided with magneto ignition, the chief cause of all its mechanical engine troubles would have been overcome, while the drawback of price was simply that a really good quad cost nearly as much as a little single-cylinder car.

By the time we came to the editorial chair of *The Motor Cycle*, we had ridden some thousands of miles upon quadricycles of various sorts, and we confess that for one we are convinced that, had the makers persisted in them, they would have shared in the same improvements which motor bicycles and motor cars have enjoyed, and the cyclecar of to-day, instead of being regarded as more or less of a novelty by some people, would have been one of the established types of the day.

At the same time, much as we may believe in the cyclecar as a very delightful form of machine for two people, we must not shut our eyes to facts. There must, necessarily, be many people who cannot possibly afford so luxurious a machine. Unquestionably, the cheapest and fastest passenger combination known to man is the motor bicycle with a second seat and properly constructed to carry the weight of two people. Next to it comes the sidecar, which is certainly much more comfortable and in many ways safer, particularly for ladies, as we do not consider that a single-track machine, with a lady sitting sideways is altogether safe, and there is no question whatever that at the present time the most popular vehicle in which motoring and sociability can be combined is the motor bicycle and sidecar, a combination which, moreover, enables the owner, when he desires, to uncouple the sidecar and use his bicycle as a solo mount.

No doubt very many patrons of the cyclecar will come from the ranks of the sidecarists, but, at the same time, while this is so it is equally certain that the motor bicycle and sidecar will remain a combination which will not lose in popularity, as the cyclecar must be more expensive in first cost and more costly in upkeep. We do not say this in any spirit of opposition to the cyclecar, but rather to make it clear that just as the motor bicycle itself is the finest and cheapest means of locomotion known to man, so is a motor bicycle and sidecar the cheapest form of motoring for two.

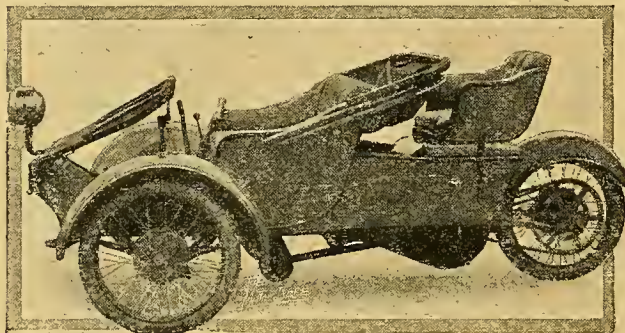




## Points in the Choice of a Cyclecar.

By B. H. DAVIES

**T**HERE is every sign that 1913 is going to be quite a cyclecar year. The cyclecar offers certain attractions which the sidecar cannot boast, and a distinct percentage of the passenger outfit market should soon fall to its lot. At the same time, cyclecar design is in a state of flux, and the "form" of very few machines put on the 1913 market will be at all fully exposed. We shall have to buy "a pig in a poke" on the strength of the reputation makers have won in other fields, or on the theoretic and paper



A new pattern three-seated 5-6 h.p. A.C. Sociable. The dickey seat may be removed when not required and a luggage grid fitted in its place.

excellences of design, or on the manifest quality of the workmanship. A little preliminary discussion may interest potential buyers, and if taken up by the general public might even exert some influence upon design. There are two introductory points I should venture to lay down quite dogmatically.

### What to Avoid.

The first is that personally I am not particularly keen on a three-wheeled cyclecar of the driving-wheel-astern type, unless its maker can prove to me that it is safe in the event of the rear tyre bursting. I possess a pretty catholic experience of the old tricars, and I never found one that could be termed safe if the rear tyre suddenly deflated. There were one or two types which could be brought to a standstill without danger by a dexterous driver if the burst occurred on a straight broad road of flat camber; but I never tried one which was not highly perilous if a rear tyre burst on a corner, or at speed, or on a sharply cambered surface; while several designs inevitably upset or charged the hedge under such circumstances. Not long ago I was attracted to a certain three-wheeled cyclecar, but the difficulty in connection with rear wheel detachment crowded me off. I admit there are many advantages in a single driving wheel, the chief being simplicity.

The second dogma I state confidently is that nothing would induce me to purchase a cyclecar with an

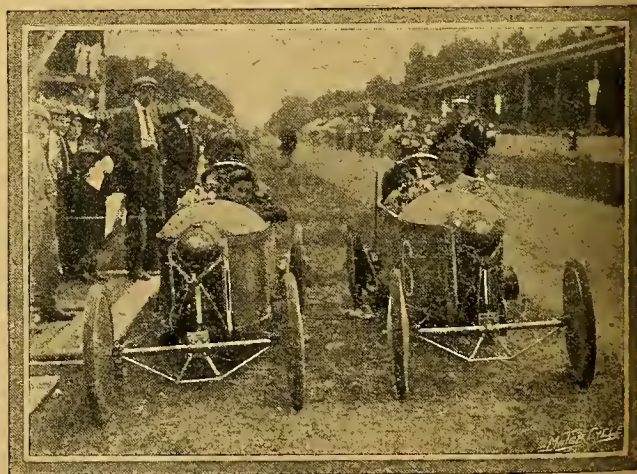
abnormally narrow track. The reduction of wind resistance is doubtless a valuable point; but a rider who frequents lanes and by-roads with ruts gauged at 4ft. 6in. or more, and is driving a machine with a track of 3ft. 6in. or 4ft., is asking for discomfort. These contradictory factors—the need of a standard track and the need for reducing wind resistance—create a very real problem. Either the cyclecar must have a big engine, and so become heavy and expensive, or it must have a wide track, narrow tandem body, and wide mudguards cleverly planned to be effective without being wind catchers.

A third point may be stated with almost equal arrogance. The ideal cyclecar should have an engine built for the job. The average motor cycle engine—large or small—is not designed to tick over slowly, partly because a motor bicycle is not steerable at very low speeds, partly because there is no room for a big flywheel. A cyclecar is often compelled to remain stationary for short periods with its engine running free: thus an engine which can run slowly is desirable. So I should want a 90° twin, with a big outside flywheel.

### The Seating Arrangement.

Tandem seating is certainly less sociable than side-by-side; but side-by-side seating makes a wind-stopper, and a wind-stopper wants a big engine; and a big engine means £s.d.

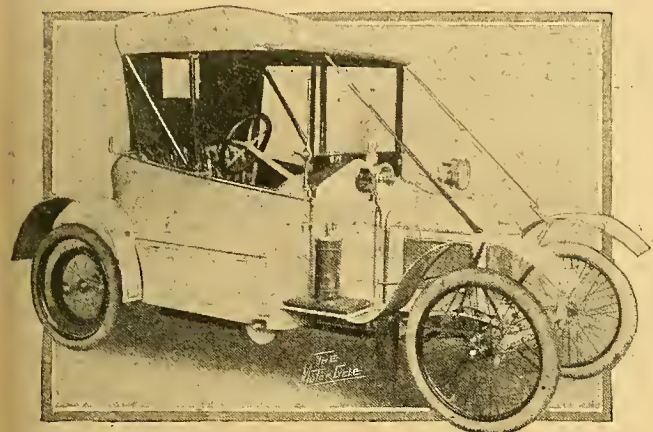
As a go-anywhere, all-weather tourist I should see there was plenty of weight on the back wheels. With an engine over the front axle, and a heavy passenger



The two Bedlia cyclecars, driven by Messieurs Bonville and Bourbeau in the International Cup race held in France last week. It will be noted that both machines are fitted with disc wheels.



Points in the Choice of a Cyclecar.—



The sociable type two-seater which has been supplied to H.R.H. Prince George of Battenberg by Duocats, Ltd.

amidships, the desirable stern weight is not easily procurable. If the driver is to sit bang on top of his driving axle, his seat will need very excellent springing.

I have no use for water-cooling. On a light, high-speed vehicle its presence is technically unnecessary, and its details would need very first-class workmanship if reliability is to be secured.

#### Transmission Considerations.

The question of gearing is open. A rigid drive throughout, embodying sliding pinions, shafts, chains, and the like, promises prolonged life, with the minimum of adjustments and incidental expenses. On the other hand, it implies arbitrary ratios, high first cost, complication, and weight. The belt is tremendously attractive for the purpose of a light, high-speed vehicle. It offers infinitely variable ratios, low weight, simplicity, small cost, silence, and silky running. But we cannot altogether surrender ourselves into the hands of designers, if we ask for the belt-drive. We cannot be put off with inferior belts and shoddy fasteners. We cannot be limited to a bottom ratio which is not a true emergency ratio (this is the fault of most variable belt transmissions). We do not want to glaze or scrape our belts by running them slack to get a free engine. I should say that for cyclecar work there are great possibilities about Capt. Low's ancient patents, which employed a double set of variable pulleys in conjunction with a swinging counter-shaft. This afforded a bottom ratio of 12 to 1 with a taut belt on a motor bicycle; and the extra space available on a cyclecar would permit of a wider range than 4-12 if necessary. A single plate clutch might complete such a transmission.

#### Springing and Brakes.

Having kept the specification so extremely light and simple so far as I have gone, I should dislike the introduction of a heavy steering gear, and I applaud those makers who adopt the reel and cable steering in duplicate. I would not readily trust my life to a single cable, however many millions of tons represented its theoretic breaking strain, but nobody can cavil at cables in duplicate.

As the road vibration is bound to be marked on a 7 cwt. vehicle travelling at upwards of 40 m.p.h. on occasion, I would not look at a machine in which all nuts were not cotted or spring-washed, and I

should pay very careful attention to the springs, and especially to the subsidiary spring dampers. Half-elliptics forward and full elliptics aft may serve a car that weighs a ton, though the huge sale of auxiliary insulators in the car world shows that four plain springs are not sufficient, even on a heavy vehicle. A cyclecar presents many problems, but its springing is the most acute of all. Many existing patterns are at present grievously handicapped by engine vibration, and when this is eliminated by the development of special engines and carburettors, road vibration will come more definitely on to the *tapis*. Then the frame springs will have their well-marked oscillations smoothed out by small auxiliary coils, or other absorbers. Brakes must not be forgotten. My outline specification permits of belt rim shoes on the back wheels, and a double set, one within the rim and one without, should provide the cheapest and most reliable four-wheeler brakes on the road, and represent an infinite advance on the internal expanding hub type or the external band, both of which are chiefly remarkable for rapid wear and frequent adjustment.

With the type of engine indicated, starting on magneto-ignition by a crankshaft handle is easy and reliable, and no difficulty would be encountered except with very high compression ratios, when the addition of a decompressor would enable the engine to be swung like the four-cylinder vertical type can be.



AN ENTHUSIASTIC LADY MOTOR CYCLIST.

Mrs. Tucker, of Torquay, with her  $3\frac{1}{2}$  h.p. open frame Premier, of which she is a very enthusiastic rider. In writing to us, Mrs. Tucker says: "I love motor cycling, and think it is great sport. My machine climbs all hills in Devonshire with a  $4\frac{1}{2}$  to 1 gear." Hill-climbing is her chief delight.



### Points in the Choice of a Cyclecar.—

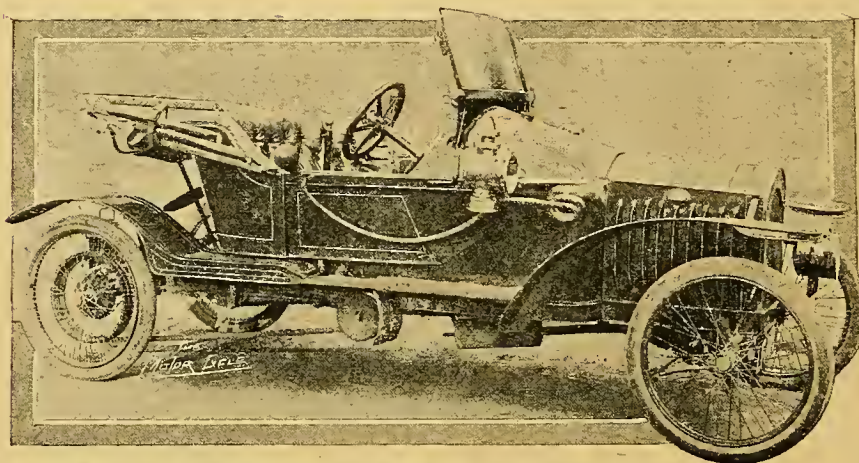
Finally, I think designers will discover that the cyclecar on motor cycle lines as opposed to the same vehicle on car lines will appeal principally to sporting individuals who value speed and a rakish appearance above everything else. Recumbent seating a burlesome exhaust, and a skeleton body, set such a one's heart beating every time, when a docile, silent, miniature two-seated vehicle appeals to the tourist. One word to prospective purchasers and I have done. The great strides which have been made in the design of sidecar combinations will prevent any falling off in the demand for these vehicles, and already I know

of more than one firm who will fit 3in. tyres as standard on their sidecar models for next year, as well as springing the rear portion of the bicycle. One of the drawbacks of the old quadricycle, which anteceded the cyclecar, was lack of springing at the rear: sidecar machines followed the example. In 1913, with 3in. tyres and springing fore and aft, the sidecar should quite hold its own with cyclecars, particularly where price is a consideration. There will, however, be a big demand, and the Olympia cycle and motor cycle show will be made additionally interesting this year by reason of the number of cyclecars which will be exhibited

## A RUN ON THE LATEST SABELLA.

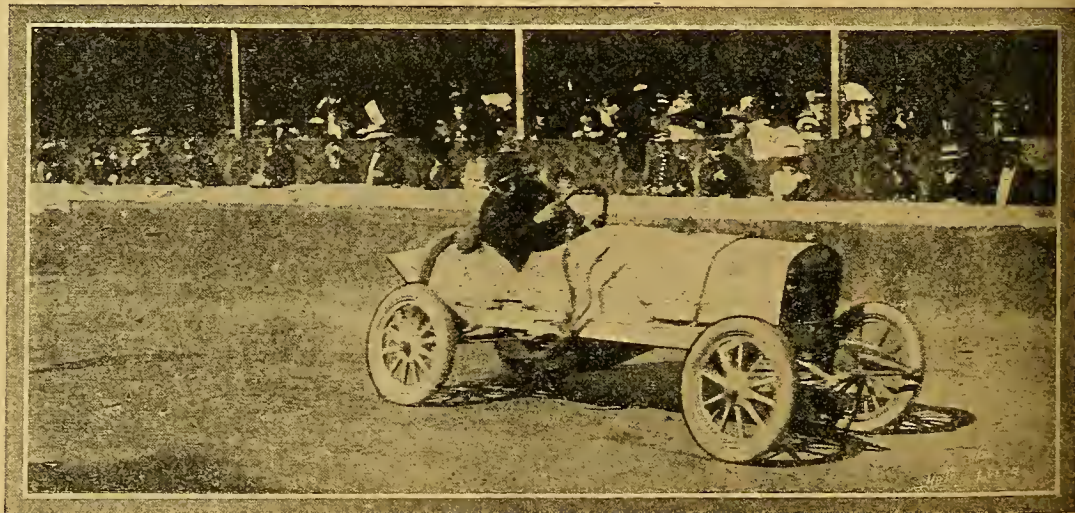
**W**E recently had a run on the latest type of 8 h.p. Sabella cyclecar (the Sabella Car Co., 110, Albany Street, W.) This vehicle is driven by an 8 h.p. J.A.P. engine, as are so many of the light cyclecars now on the road. The engine has an additional external flywheel, and is cooled by a fan driven by round belt off the mainshaft. The transmission

from the engine to the ball bearing counter-shaft is by chain, and thence to the two rear wheels by long belts. The alteration of the gear ratios and the taking up of the slack of the belt is effected by means of two levers, one of which expands and contracts the pulley, and the other pushes back or draws forward the rear wheels and applies the brake. The particular vehicle on which we were given a trial run is well turned out, being fitted with a comfortable body, provided with side doors, and both hood and screen. Being fitted with a Lukin carburetter, the engine was extremely flexible and controllable, picking up quickly and yet running slowly when desired on top speed and when in neutral. In the course of our run we took Fitzjohn's Avenue at a good speed. A good ascent was also made of Netherhall Gardens, maximum gradient 1 in 7.8. This is the first time we have ascended this well-known London hill on a belt-driven cyclecar. The springing was a trifle stiff owing to there being one leaf too many in the new springs. The sociable model as shown in the accompanying illustration is standard for 1913.



A well turned out two-seater. The dome-shaped dash, roomy and well-upholstered body, Cape cart hood, wind-screen and mudguards to pulleys are noteworthy features.

An impression of the Cohendet cyclecar at speed in the French Road Race. This machine is made by a large firm of engineers whose works are in Paris.







### The Life of Epicyclic Hubs.

It would be very interesting to hear the experiences of riders who have covered long mileages with any of the popular epicyclic hubs. Like most journalists I have owned and used samples of practically every make of hub gear; but the very need for a sample experience of every make prevents me from running the hubs to destruction. I have used several types for distances of from 2,000 to 4,000 miles, and when I passed on to another make each sample was apparently in perfect order and possessed a clean record. Could I say as much, I wonder, if I had run the hubs for double the distance? I was in a gear making shop the other day, and its manager frankly expressed the opinion that the modern three-speed hub contained too many small parts to stand up in prolonged wear: he prophesied that within a season or two there would be a general reversion to two-speed hubs, in so far as the hub gear survives at all, because the fewer the parts, the more substantial the hub. Of course, he was talking with an eye on his own trade, for he happens to own good two-speed hub patents, and has no interest in any satisfactory three-speed hub patents. But he has the courage of his opinions, for he is laying out considerable capital on booming a two-speed hub next year. The great army of private owners should by now have some definite information on this point. How soon does a modern three-speed hub begin to require attention from the makers? Of course, nobody would grumble at expending, say, £1 in repairs at the end of a hard season's work.

### Belts and Chains.

It may well be questioned whether Mr. Wyatt's belt experiences (page 1009, issue of September 5th) are typical or representative. My own experiences this year have been mixed. I had ceaseless trouble with belts last year, and early this spring ordered belts of another make, which were even worse than the brand I patronised in 1911. In fact, during a thousand miles ridden in July I wore out two new belts, and had innumerable roadside stops. In August I again changed my belt maker, and also began to ride another machine. The July machine had an engine which worked best on a  $5\frac{1}{4}$  to 1 gear, and was planned for a  $\frac{7}{8}$ in. belt. The August machine was geared  $4\frac{1}{2}$  to 1, and utilised a 1in. belt. With this combination—big belt and high gear—I have encountered no transmission troubles at all during a prolonged distance. In fact, it almost approximates to the excellences of a  $2\frac{3}{4}$  h.p. machine with combined drive. I really believe that the best existing "no trouble transmissions" are (1) combined drive, with  $\frac{7}{8}$ in. belt for  $2\frac{3}{4}$  h.p. or 1in. belt for  $3\frac{1}{2}$  h.p., and (2) large belt and large pulley, used as a direct drive. My experience is that the front chain of a combined drive wears distinctly better than the front chain of an all chain drive. The shocks which survive the cushion device

on the crankshaft encounter a rigid transmission aft, where the remainder of the drive consists of chains, or of chains and gears; but when the final item of the drive is a belt, they have nothing solid to act upon, and seem to lose something of their ferocity.

Of course, many adherents of the belt drive use inferior belts and inferior fasteners. Despite advertisements I find great differences between various makes of belt, and in the same way there are fasteners which never break, and fasteners which seldom last a thousand miles.

### A Genuinely Clean Crank Case.

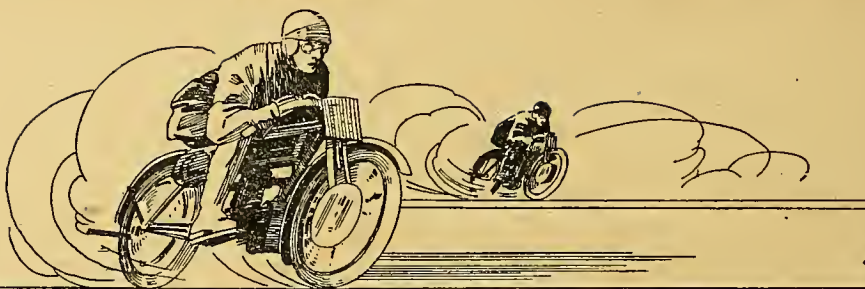
Worrying around with my microscope at the Coventry and Warwickshire M.C. Hill-climb I found something new—a crank case from which not even the faintest shadow of a green blush emerged. At the scales I found that a certain new model nowhere exhibited the trace of an oil leak. You can guess that I hurtled up to the summit and pounced on those engines after they had finished their timed sprint. But no! Their riders had not been busy with a lump of waste—the crank case is genuinely oiltight. I found a slight flaw in the joint edge of one aluminium crank case cheek, and furtively turned the engine over compression a few times to see if I could not get a leak there: oil was lying just under the flaw, but when you pulled the belt round this oil was sucked in, not blown out. Here was a mystery—evidently ascribable to a vacuum valve. Now if a new firm manufacturing an engine with a patented method of lubrication, can get a positively oiltight crank case at their first shot, what excuse is there for veteran designers whose engine pits simply leak oil in all directions and even throw some on to the rider and ruin his clothing?



STREATHAM AND DISTRICT M.C.C. OPEN HILL-CLIMB.  
G. F. Hunter (8 h.p. Zenith) at speed negotiating the bend on Titsey. Both this rider and his brother, A. Hunter, made good time on similar machines.



## QUESTIONS & REPLIES



SPJ

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Local Taxation.

**?** In March I bought a second-hand 1911 T.T. Triumph, for which the licences were taken out at once by me, including the £1 tax. About six weeks ago I bought from a friend a 1912 T.T. Triumph, which I have been riding ever since. I still have the 1911 machine, which I am advertising for sale. Since having the 1912 machine, I have only ridden the 1911 one on, I think, one occasion, when I rode it a short distance this week for the benefit of a possible buyer. Now the licensing people are making enquiries re my having paid the tax, and, as I am quite ignorant on these matters, I do not know how to act. I do not want to pay £1 when I hope to have the machine sold by next week.—G.O.F.

As you have used the 1911 vehicle on one occasion, you are liable for the tax for both vehicles. One licence only enables you to use one machine at a time. We are afraid you will have to pay the extra local taxation licence, as you have rendered yourself liable for it by using the machine.

### Engine Timing.

**?** I removed the timing case of my 2 h.p. 1912 single-cylinder Humber cycle to fit a new pipe washer, as it was leaking badly, and in removing case the inlet valve wheel and large intermediate wheel came away with the case. I should be much obliged if you would tell me how to reset the timing. There are two punch marks on inlet wheel, three on camshaft pinion, and one on exhaust wheel, but there are no marks that I can see on the large wheel or on the magneto wheel.—J.D.

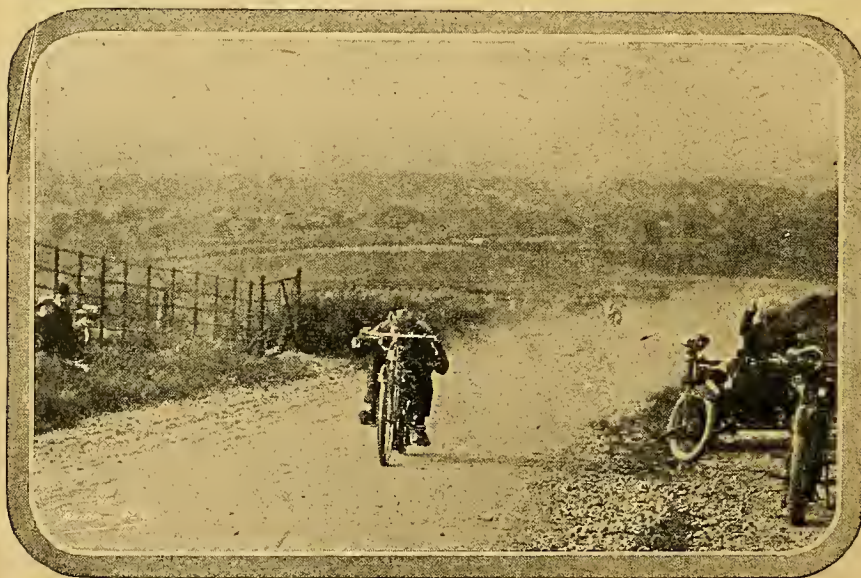
Without seeing if the marks are on the teeth or below them we cannot tell you how to retime your engine by the marks. The correct timing is as follows, and will easily be found with a little care. The exhaust valve opens when the piston is 6-7ths of its way down the firing stroke (in your case about 10 mm. from the bottom dead centre), and closes dead on top, or, if anything, a shade after. The inlet opens directly the exhaust is closed and shuts just after the piston has passed the bottom centre. The piston then rises, compressing the mixture, and

the spark should take place, i.e., points of magneto contact breaker should separate, when the piston is about 3 mm. from the top of its stroke.

### A Curious Click.

**?** I have a 1908 twin 5-6 h.p. N.S.U., rear cylinder, vertical, front ditto inclined at 45°. On ordinary undulating roads the machine runs well, and is a fairly good hill-climber. It starts easily and fires regularly. My only trouble is on the long gradients. Here (Devon) after running up hill for some distance there is a decided clicking noise in the back cylinder, due, I believe, to slight pre-ignition. On the old carburetter, closing the air inlet slightly would cure the trouble for a time, so will retarding the spark considerably, but in both cases there was a decided falling off in power, and now I have an automatic carburetter. The magneto adjustment is the only one I have. This, of course, reduces the power available, and the engine gets a lot hotter, and soon fails. When there is carbon deposit in the cylinder it is more common, but scraping out the cylinders does not stop it. The compression in both cylinders is good. Would reducing the compression in the back cylinder by fitting a plate between the crank case and the cylinder improve matters? If so, what thickness of plate would you suggest for experiment? (I understand about lengthening the bolts and tappets.) This should allow the back cylinder to work cooler, and at the same time not affect the front, which is apparently working all right, but I would increase clearance in both cylinders if you think it would be any advantage to do so. I do not object to reducing the speed, as the machine is faster than I care about on level roads. The sidecar is always attached.—PS 71.

The click is very probably caused by a slack small end bearing. If it is, as you suggest, caused by pre-ignition, and your automatic carburetter is a modern one, try throttling down a little when the knock occurs. This will not reduce your power as much as might be expected, and will keep your engine cooler. If you decide to lower the compression, raise both cylinders the same amount (about 1/16 in. should suffice), but do not alter one only. Are your inlet springs strong enough? Weak springs often cause a curious click.



SOUTH BIRMINGHAM M.C.C. NOVICES' HILL CLIMB AT STYLE COP.

L. A. Bees (3½ h.p. L.M.C.) and — Roberts (3½ h.p. Triumph) near the summit of the hill.



**Loss of Power.**

**Q.**

Has it ever been discovered where the power of old engines goes? I have a 5 h.p. twin-cylinder machine on which I have covered about 32,000 miles. I have just given the engine a thorough overhaul, fitting new bushes everywhere, new crank pin, gudgeon pins, piston rings, valves, and springs. I cut the cylinders away round the valve seatings so that there was no fear of valves pooketing; the magneto I had overhauled and remagnetised by the makers. I took great pains to get the bushes a nice fit, and the piston rings I ran in getting splendid compression; valves and ignition are timed correctly, and carburetter is in order. Exhaust pipes and silencer I took to pieces and cleaned, yet, after all this, the machine is nothing like it used to be. At one time it would easily do 56 m.p.h. and climb all hills about here with two np on a 3 $\frac{1}{2}$  to 1 gear; now, after about 600 miles running, 42 m.p.h. is the maximum speed, and a mere struggle up anything like a hill. Here is an engine apparently in perfect order, yet the power cannot be restored.—B.G.D.

It is a difficult matter to answer your question, but granting all adjustments are as good as they were there are certain possible explanations. Possibly your cylinders require regrounding. After a certain time most metals subjected to shocks suffer fatigue which affects many of their qualities. Did you have to cut away much metal round the valve ports? as this would lower the compression. The most likely cause of loss of power is wear in valve gear. Are your cams and rockers worn? A small amount of wear in these parts has a considerable effect on the power; even slackness in the gear teeth makes a difference, especially on a twin. Are your valve springs strong enough? If you have atmospheric valves, are they a good fit in their guides? Springs strong enough? Springs of equal strength? Do they get much lift? 3-32nd of an inch is usually ample for automatic valves on a 5-6 twin.

**Heat in a Motor Shed.**

**Q.**

I am purchasing an A.C. sociable, but find that our own county (Gloucestershire) will not register the machine as a motor cycle or tricycle, owing to the weight. Can you tell me any county where I can register the same for the 5s. fee? I have built a wooden shed for keeping the vehicle in, and find on hot days that the temperature rises to over 80° Fahr. This, I think, must be detrimental to the tyres. The place is thoroughly well ventilated, and I have had various suggestions as to the cooling. What would you suggest to cool the place, and what temperature is the most suitable to preserve rubber? Perhaps other motorists have a similar trouble.—F.W.

It is doubtful whether any county will register the A.C. for the motor cycle fee. You will have to register it as a car, but you need not pay the car local taxation licence, owing to the fact that the vehicle is a three-wheeled one. Take out a local taxation licence for a motor tricycle, and pay £1. Indiarubber articles certainly last longer if kept in a

cool, dark place, but when the weather is really hot the temperature in most sheds would rise to about 80°, and we do not think you could avoid it in the case of a shed. The best method of keeping it as cool as possible is to whitewash the roof and sides on which the sun's rays strike longest. Watering the floor will also be a help, and a tray of water might be placed in the shed in very hot weather; the evaporation will keep the heat down to some extent.

**Carburetter Troubles.**

**Q.**

I have an old Minerva machine fitted with a B. and B. carburetter (jet No. 32 or thereabouts). The engine runs beautifully, but every 100 yards or so the carburetter wants flooding; sometimes it will go for a mile or two and then wants flooding again. There is no floating obstruction, and the needle valve seems to work freely enough. The joints are all tight and good. I have ground inlet valve in, also needle valve in carburetter; the level of petrol is also right; in fact, I have tried everything I can think of without avail.—F.G.W.

Evidently the joints of the weights on the float are badly worn and stick occasionally. This is a fairly common trouble in old carburetters. You had better replace the parts which control the movement of the needle valve, if they appear to be much worn.

**EXPERIENCES WANTED.**

—“S.H.” (Wolverhampton).—T.T. Rudge multi and sidecar.

—“H.W.T.” (Hampton Wick).—3 $\frac{1}{2}$  Lincoln-Elk with or without speed gears.

—“R.B.” (Dublin).—Mead-Precision. Hill-climbing, speed, and petrol consumption.

—“H.C.” (Haywards Heath).—Triumph, Bradbury, Excelsior, and Douglas, with sidecars.

—“T.H.” (Normanton).—Roc two-speed fitted to 3 $\frac{1}{2}$  Humber with and without sidecar.

—“F.M.” (Putney).—1911 T.A.C. with sidecar for hilly districts, also Indian and Clyno.

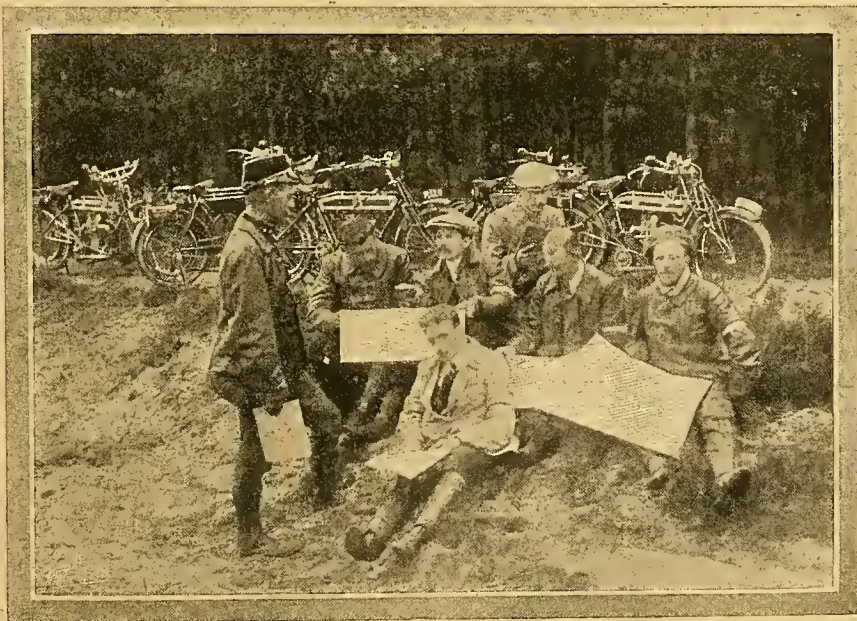
—“R.H.” (Pitlochry).—3 $\frac{3}{4}$  Scott with sidecar. Reliability, consumption, hill-climbing, and lubrication.

—“S.G.I.” (Middleton-in-Teesdale).—6 Enfield, 6 Zenith, Clyno, 4 James (chain driven), and 4 $\frac{1}{2}$  Excelsior, with sidecars.

**READER'S REPLY.**

**Mysterious Misfiring.**

Your querist on misfiring, “J.G.S.,” in a recent issue of *The Motor Cycle*, states that he thinks it is not caused by oil in the magneto. It is curious that I had precisely the same symptoms and the same results with the exception of improvement on advancing the ignition—true, I have a 5-6 twin, but that is not very different for the complaint spoken of. I was bothered with chronic misfiring and explosions in the long exhaust, which is equivalent to your correspondent's silencer. This I stopped by removing the carbon brush from the magneto and inserting a rod covered with a piece of petrol-soaked rag; I then moved the engine, thus making the armature revolve and clean itself on the piece of rag. By doing this occasionally I have cured the trouble. I do not, of course, know the position of “J.G.S.'s” magneto, but mine gathered lots of oil from the seating of the cylinder which worked its way in, although the magneto is supposed to be oil-proof! I had somewhat similar trouble with another 5-6—this was caused by losing the lock-nut from the platinum screw in the magneto, thus the point gradually worked through the rocker-arm till it shorted on the other platinum.—L.R.



**DUTCH MILITARY MOTOR CYCLISTS.**

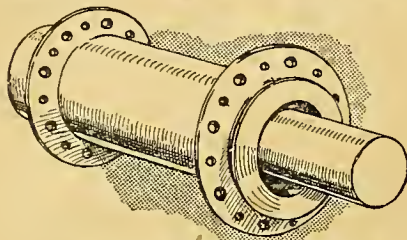
A group of Dutch Volunteer Military Motor Cyclists studying maps in connection with the first exercises undertaken by the corps.



## AMONG THE ACCESSORIES.

### To Prevent Wear of Sidecar Bearings.

We have just received a sample of a new registered sidecar hub, the novel feature of which is the gutter-like projection at the inside end, extending over the cone. It is claimed for this that it is



A new sidecar hub which is fitted with a mud catching trough on the inner end.

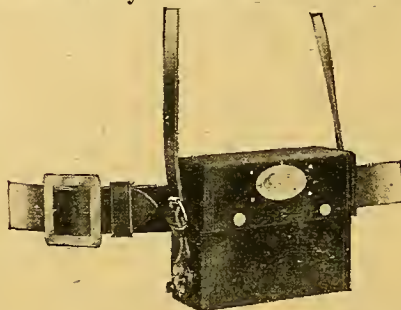
practically impossible for grit to enter the bearings, even during the worst possible weather. The sketch of the gutter-like projection and hub end is practically self-explanatory, but it may be added that the construction allows muddy water to run down the hub end and drop off the fixed portion of the axle without it entering the bearing ball race. If it is desired to make the hub still more waterproof, a felt pad can be inserted in the hub end. This idea is an improvement of the old tip among pedal cyclists, who used to wrap chenille round the axle close to the hub, so that the latter revolved against the edge of the chenille. The hub is the production of F. J. Horton and Co., Theodore St., Birmingham.

### Night Riding.

One of the most annoying things in connection with night riding is a defective acetylene gas burner. Readers who make use of the Bray Roni burner will be interested to know that one of the chief features of this burner is that it is of the air injecting type and will not carbonise. The flat flame it gives is produced from a single gasway only, and cannot therefore become distorted and crack mirror or lens. Finally, a great improvement has recently been introduced by the insertion of a pressure jet, which prevents flaring when the burner is subjected to excess of pressure of gas due to decomposition of the carbide.

### A Useful Electric Lamp.

A useful accessory which has been lately introduced by Messrs. Siemens Bros. and



Co., Ltd., is the Satchell electric lamp, which was used by Harold Kars-

lake in the M.C.C. London to Edinburgh run this year. The lamp consists of a substantial waterproof black leather case, stiffened internally with wood, containing a Siemens dry battery. The lid is secured by means of glove button fasteners. In the lid is a Siemens Wotan lamp, carried in a suitable reflector, and at the side is a switch mounted on an ebonite base. The best quality lamp is supplied with a leather belt, so that it can be strapped round the waist, and also a leather shoulder strap, so that it can be slung round the neck. The battery is fitted with plug sockets and the connections to the lamp and switch are made by means of plugs, which can be withdrawn from the socket when the lamp is not being carried.

### To Prevent Petrol Splashing.

The accompanying sketch is that of a patented device for fitting to filler caps of petrol tanks, which, although admitting air, prevents splashing. The cap is fitted with a light cone valve, which is immediately closed by the upward splashing of the petrol. The top of the centre tube is closed, and a small air hole is provided at the side of same. The makers, the Bowen and Odery Manufacturing Co., 62, New Cross Road, S.E., inform us that the device has given perfect satisfaction during a very lengthy trial of nearly a year



## HINTS AND TIPS FOR MOTOR CYCLISTS.

By "ROAD RIDER."

### THE CRANK CASE DRAIN TAP.

**379.** Few riders make sufficient use of their crank case drain taps or plugs; indeed, many are unaware that engines are provided with such fittings. The crank case should always be drained after a prolonged ride, or before essaying the ascent of a really trying hill. Oil loses a great deal of its lubricating value after it has been circulated around the engine for some time, and the oil remaining in a crank case is frequently almost entirely destitute of any genuine lubricating value. At timed hill-climbs it is a common thing for the "cracks" to empty their crank cases, and start their timed sprint on entirely fresh oil. Moreover, the habit soon informs a rider if he under or over-oils his engine, and is thus a partial preventive of carbonisation and worn bearings.

### A SUBSTITUTE FOR VALVE GRINDING.

**380.** Every rider knows that when the compression grows weak, the pits are generally confined to the valve face, the whole ring of the valve seat being usually bright and clean and smooth. Most of the up-to-date factories possess special valve-facing machines, and are willing to reface customers' valves for a trifling sum. It, therefore, pays to send the valves to the factory instead of grinding them in at home. The job is better done, and there is no fear of getting abrasive into the cylinder. If the seating is not perfect, a very few turns of a brace with a thin

smear of fine abrasive will make the seating match the valve; but, as a rule, a re-faced valve may be slipped straight into the engine without any grinding at all.

### A DECEPTIVE CAUSE OF FLOODING.

**381.** Often a carburettor seems to be flooding, and induces its foolish owner to grind in the needle valve or adjust the level, when in reality the trouble is of quite another nature. Many modern carburettors have removable jets, and the joint between the jet and its socket is made petrol tight by a fibre washer. The least speck of grit between this fibre washer and its seating will cause a petrol leak, which may appear to be due to false level or a worn needle valve. Hence, whenever the jet is taken out, the fingers should be spotlessly clean, and the jet should not be placed on any dirty or gritty surface.

### VOLUTE CARBURETTOR CONTROL SPRINGS.

**382.** One or two modern carburettors are fitted with "volute" return springs on the control wires, in lieu of the old coiled springs. The change is due to the fact that the control slides are removable by a bayonet joint in the cap of their tube, and while the coiled springs were retained, some difficulty was experienced in twisting them round in their tube when the bayonet cap was replaced; this difficulty was not met with volute springs. But the volute springs are rather apt to rust and grow sluggish, so they have given

rise to a new form of carburettor trouble. The rider thinks his air and throttle slides are sticking, whereas in reality the springs are rusty and adhesive, so that washing the slides with petrol or paraffin is useless. The cure is to oil or grease the volute springs at frequent intervals.

### THE STAND AS A SPRAG.

**383.** When a motor bicycle possesses a variable gear in addition to a sprag, it is easy to effect a restart on steep gradients in the fashion employed by car drivers. The extra leverage afforded by the low gear ratio enables the driver to hold his machine with the clutch during that vital moment between the release of the brakes and the taking up of the forward drive by the clutch. The case of a single geared free engine machine is widely different. Such a sprag is available on practically every machine in the shape of the back wheel stand. Before a clutch restart is attempted with a single-geared machine on any awkward gradient, the stand should be let down, and its tips should be scotched well into the road surface by the pressure of the foot. This done, almost any single-geared F.E. machine should restart on grades up to 1 in 9 at any rate. If the clutch be hand-operated, the restart should be possible on any gradient whatsoever, for the rider can assist with his feet. With a foot-operated clutch, a restart is more difficult on really severe gradients.



## "ON MANŒUVRES."

**A** WEEK'S experience with the cavalry in East Anglia may perhaps be sufficient excuse for wearying readers of *The Motor Cycle* with a few hints and tips, especially as the new arm has started with such success that it would be a pity for those who join the forces on grand manœuvres not to benefit by the lessons of the last few days. The *Times* special correspondent has praised the army motor cyclists in no sparing fashion.

The motor cyclist in a country without (?) roads is *par excellence* the best medium of communication. He is, of course, only valuable behind the screening troops. . . . as he always gives sufficient warning of his approach to enable a patrol to catch him. The motor cyclist service during the cavalry reconnaissance has been furnished almost exclusively by the Universities' O.T.C. These men have worked excellently, and their daring on the road is at times appalling.

Such eulogy, from one of the highest authorities on military matters in this country, should be no small stimulus to those called out for manœuvres.

### Where to hide Despatches.

It will be noticed that the *Times* lays far more stress on despatch carrying than on actual scouting, though the former is no less hard work than the latter. The despatch bearer must be always alert for signs of the enemy, he must learn to use covered roads as much as possible, and to detect the hidden foe at a distance. His despatches are vitally important. Even if he be captured small harm is done unless his message falls into the enemy's hands, thus exposing the intentions of his commander or the like. Despatches should not be hidden in the cap or puttees, as these are the customary places; it is best to put them inside field glasses, Patchquick tins, collars, or any less likely spot. Exceptionally important messages should be learnt by heart, then in case of imminent capture the message can be destroyed quickly—the best way is to swallow them. Non-committal discretion is the best policy for the captured bearer of despatches. The enemy is

only empowered to demand his name and regiment (*i.e.*, to whom he is attached), and although it will indubitably demand more it must be choked off.

As regards work, the average mileage seems to vary between 60 and 100 per diem; the smaller figure for lightweights used for short distances, and the larger for more powerful machines. The rider is always liable for duty. He must forego all except the minimum of sleep, and get what meals he can. Plain chocolate is an excellent standby; bread and cheese are easily obtained, and so, of course, is liquor. The amount of kit carried varies with individual taste, but it is advisable to carry on the machine a change in case of rain, a good overcoat for night, and toilet accessories. One blanket and one ground sheet are generally supplied to each man. Of course, the next night's sleeping place is totally unknown, and may be miles from anywhere; therefore the rider must be complete in himself, but not so overladen with kit as to be too slow for practical purposes.

A map is essential—these may be issued, but the supply is already insufficient. Without one, the cyclist is continually hampered and quite inefficient. A celluloid map case is convenient to protect the map from the weather.

### Riding with Troops.

It has been found that riding with the troops is bad both for troops and machines. It harasses the horses, and overheats the engine.

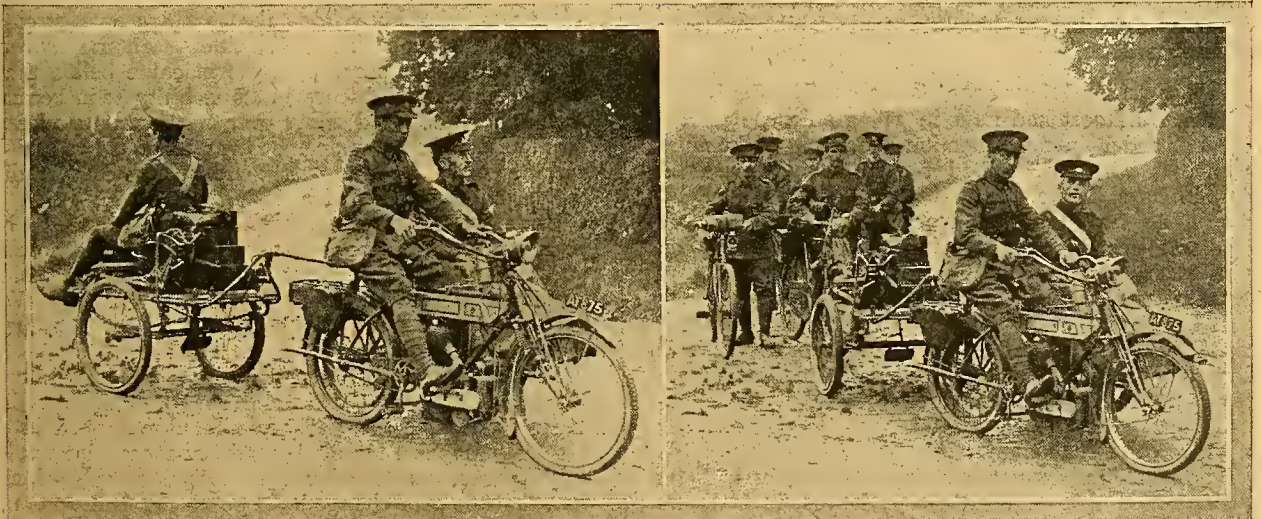
A few "don'ts" as a finish:

*Don't* expect information on every subject. Most people don't know; those who do, won't say.

*Don't* stop when you have a message to deliver—unless you break down, then

*Don't* forget to let your officer know you are *hors de combat* for a time.

*Don't* give away information to civilians; they will probably tell the enemy. C.J.G.



THE MOTOR CYCLE IN THE ARMY.

(1) The Maxim gun of the 5th East Yorks (Cyclists), who are taking part in the Army Manœuvres. It is drawn by a 3½ h.p. two-speed Bradbury. The complete equipment weighs about 8 cwt., and has proved very satisfactory. (2) The same gun followed by the team.



## In the West Country on a P. & M.

SOME months ago we were promised a trial of a 1912 Phelon and Moore, but it was not until the time of the Six Days' Trials that matters could be satisfactorily arranged. The makers appeared particularly anxious that we should test the machine under such severe conditions as had been arranged for the 1,000 miles trials, and as for ourselves we felt that no better machine could be selected, and as events proved we would not have exchanged our mount for any in the trial. The day before the start of the memorable event we set out from Coventry for Taunton *via* Cheltenham and Bath, and except for the fact that this initial run provided our only involuntary stop on the road while the machine was in our possession, the journey down was devoid of incident. The machine had been sent out with the high tension wire hanging loose, and resting on the cylinder the rubber had burnt through and caused a short circuit. All that was necessary was to stretch the wire.

### Belt and Chain Drive Compared.

The writer is more accustomed to riding belt-driven machines than chain, and consequently was interested to observe the difference in the comfort of chain and belt transmission. There certainly is a difference, a slight tremor being conveyed to the handle-bar grips and footrests with the more positive drive, but by the end of our test we were convinced that this was more than counterbalanced by the absolute reliability of the chain under all weather conditions.

Starting from cold is sure and certain with a P. and M. after injecting a few drops of petrol into the cylinder *via* the tiny pipe provided, and the engine does not go off with a roar on giving the kick starter a dig, thanks to the half-compression device. As for the gear we have nothing but praise; the clutches take up the drive sweetly and without jar, and it is chiefly the smooth action of the clutches which render the big jump from the low to the high ratio less noticeable. Hill-climbing is a delight with a P. and M. No matter how steep the gradient, nor how wet the road surface, one has a feeling of absolute dependability after a little experience.

### Devon and Somerset Terrors Climbed.

Beggar's Roost and its 1 in  $3\frac{1}{2}$  gradient, Porlock, Lynton, and Bybers, to mention but a few of the chief acclivities which accounted for so many failures in the Six Days' Trials, have no terror for the P. and M. rider. As we climbed merrily up single figure gradients past crestfallen riders who were struggling with their machines by the roadside we think that many a one would have given worlds to exchange machines. We will not dwell upon the hill-climbing capabilities of this machine, as its prowess in this direction is patent to every reader who makes a study of Six Days' Trials results, but we should in particular like to refer to an achievement on the part of our mount on the last day.

The machine was not new from the works with an engine tuned up to concert pitch; it was, in fact, the identical machine on which W. Pratt carried off the special trade prize in the Scottish Trials a week or two previously. Consequently the engine had run a

considerable distance before it came into our hands. With the run to Taunton and several hundred miles in close company with the Six Days' Trials riders, many a machine would have lost long ago that excellence necessary for the steepest ascents. Not so the P. and M., which had never had its valves attended to, its jet changed, or, in fact, any other attention beyond filling with petrol and oil, twice tightening the rear chain by means of the simple chain stay adjustment provided, and twice adjusting the gear—an operation entailing one minute's work.

Porlock on the sixth day of the trial, with its unspeakable surface, was admittedly the *pièce de résistance* of the trial, but the P. and M. forged its way to the summit, and only once success hung in the balance. That was at the second corner when the engine commenced knocking; simply because the rider was too busily engaged in keeping the machine erect on the slimy surface to give the levers the attention demanded on such a precipitous gradient. Later in the morning, and in fact after rain had fallen constantly for three hours, the writer made another ascent in the presence of Professor Sharp, Messrs. Brooker and Evans, the A.C.U. officials.

### General Equipment and Impressions.

Band brakes are frequently criticised in these columns, so we feel it our duty to report that the rear outside band brake was most powerful in action, never once required adjusting, and its only fault was squeaking when under severe strain. There seems to be a general impression that the P. and M. is not a fast machine, and we to some extent share this view. The opinion has no doubt clung to the machine since its early days, but we found the 1912 model as fleet as the majority of  $3\frac{1}{2}$  h.p. machines, and discussing this subject with the makers received the assurance that every one now turned out will attain a speed of 50 m.p.h. on the road.

One more important point in which the P. and M. departs from current practice is the position of the engine, inclined and rather high up in the frame. Wiseacres who knew that the machine was strange to us, predicted rolling and skidding on the Devonshire grease, but here again the machine belied their words, for our confidence in its stability soon became such that we bowled along over treacherous surfaces, overhauling one after another competitor (as indeed it was necessary for us to do), and seldom if ever did we detect a suspicion of a skid.

Certainly, in a large measure, praise must be accorded to the Kempshall tyres, which not only stood up as no rubber tyre of our experience has done, but, moreover, never punctured throughout the test. We may add that the identical pair of tyres went through the Scottish Trials with the same result.

Finally, we must tender our thanks to Mr. Richard Moore, of Messrs. Phelon and Moore, Ltd., for the loan of the machine. It came to us equipped as a first-class machine usually is, and our experience would only prompt us to offer the following suggestions, viz., that the gear change lever be placed further along the tank away from the rider's legs, and that the foot brake pedal be arranged on the orthodox side, instead of being operated by the rider's right heel.



# AVON TYRES

**More trouble in the Far East?  
Possibly—but not Tyre trouble!**

**Where the Avon policy prevails there  
is peace and an infinite content.**

## **FROM LONDON TO CONSTANTINOPLE BY MOTOR CYCLE WITHOUT A SINGLE PUNCTURE**

**Mr. A. Pratt, famous as the motor cyclist who recently completed this  
hitherto all but impossible journey, sends us a postcard from  
Constantinople as follows:—**

“CONSTANTINOPLE,

“Sept. 3rd. 1912.

“You will be pleased to know that my AVON TYRES have been perfect.  
“In the journey from London to Constantinople, over mountain passes, sandy  
“plains, and hundreds of miles of the vilest roads—I have not had a single  
“puncture. Please accept my sincere thanks for having saved me from  
“tyre trouble.

“Yours faithfully,

“A. PRATT.”

**Your Motor Cycle must be shod with AVONS for brilliant achievements  
like this.**

---

**AVON TYRES can be had from all factors and agents, or direct from**

**THE AVON INDIA RUBBER CO. LTD.,  
MELKSHAM, WILTS.**

Telegrams: “Rubber, Melksham.”

Telephone: No. 2, Melksham.

**And branches:—LONDON: 35, Long Acre; BIRMINGHAM: 204, Corporation Street;  
BRISTOL: Bristol Bridge; MANCHESTER: 229, Deansgate; GLASGOW: 197, Buchanan Street.**



# International Successes

by

# THE Douglas

VIBRATIONLESS

LIGHTWEIGHT

## IN FRANCE

### International Cup Race

held on September 9th, at Le Mans.

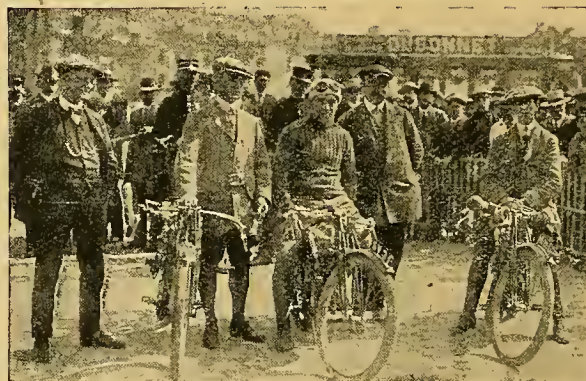
There were 35 starters in this event, representing the pick of Great Britain and the Continent.

#### THE DOUGLAS TEAM

— finished —

\*3<sup>rd</sup>. 6<sup>th</sup>. AND 12<sup>th</sup>.

\*S. L. Bailey's speed averaged 47 m.p.h. for over five hours, surely a marvellous performance for a 350 c.c. machine.



S. L. Bailey H. DASHALL E. KICKHAM

The Douglas Team in the International Cup Race at Le Mans, which secured **SECOND PLACE** for the **TEAM PRIZE**, being nearly equal to the winning team, which were all higher powered machines.

## RECENT SUCCESSES AT HOME.

### Streatham and District Annual Hill Climb.

Class I. Douglas. **FIRST** on Time.  
**FIRST** on Formula.  
**THIRD** on Formula.

Class V. Douglas. **FIRST** on Time.

Class X. Douglas. **SECOND** on Time.  
**THIRD** on Formula.

### Speed Trials at Stapleton Park.

Class I. Douglas. **FIRST.**

### Western District (London) M.C. Reliability Trial.

Douglas **FIRST**, qualifying for  
**THE WILLIAMS SHIELD.**

### Armagh and District M.C.C. Hill-Climbing Competition.

Local Event. Douglas. **FIRST.**  
Open Hill Climb. Douglas. **SECOND.**

### Leicester and District M.C.C. Hill Climb.

Class A. Douglas. **FIRST.**

The Douglas also won the **JUDGE CUP** for the best performance of the day.

**Pin your faith to the SUPERIOR MACHINE.**

MAY WE SEND YOU FULL DETAILS OF OUR MODELS?

**DOUGLAS BROS., Kingswood, BRISTOL**

Telephone—No. 51.

Telegrams—"Douglas, Kingswood."

London—336, Goswell Road, E.C.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

### Inglorious Devon.

Sir,—Devon is one of the few counties in this country which will not hand over its main roads to the county authorities, each section being controlled by the rural council in whose district it lies. The county surveyor can exercise no proper supervision over them in these circumstances, and the result is what we find. Small wonder that the Road Board will not assist.

SIDESLIP.

### The Definition of Cyclecars.

Sir,—A letter in your last issue, signed John D. Rowland, suggests that the new Singer cyclecar is out of your province. I, for one (and I know many others), was pleased to see the illustrations of this smartly designed four-wheeler. It certainly does appear to be on the border line (as you pointed out in the descriptive article), but I really think that the artillery wheels give it a heavy appearance. If only the Singer Co. would fit detachable wire wheels, it would look lighter (though it might not be actually lighter), and further, the vehicle would be more in keeping with a cyclecar. I look forward with great eagerness to further references to this cyclecar in your journal.

W.S.

### Power for Sidecar Work.

Sir,—I am much interested in this discussion, particularly the contribution by "Experto Crede" on the ideal machine for Scotland. He recommends the 6 h.p. Zenith, but three indispensable adjuncts to serious sidecar work are wanting, viz., chain drive, kick start, and free engine clutch.

After using my two-speed chain drive Bradbury for 1,600 miles, with sidecar, on Scottish roads, without even shedding the passenger on any hill, and this without ever touching engine or chains, I naturally conclude that a big single has ample power. I would suggest that in the next A.C.U. Six Days' Trials, every engine of 500 c.c. and over should take sidecar and passenger, for I think it ridiculous that machines of 2 h.p. to 8 h.p. should compete in the same class.

NIL DESPERANDUM.

### Cattle on the Roads at Night.

Sir,—In reference to the remarks by your correspondent, Mr. Fred Matson, regarding cattle straying on the roads, etc., I should like to tell you my recent experience. When I read his letter I thought what a danger such would be at night, and since have had the fact forced home on me. I was riding a 2½ h.p. machine with passenger on the carrier, having to traverse about five miles of rather narrow and winding road. I came across two flocks of sheep. The first flock was just round a corner. Some of the sheep were grazing by the roadside and the others lying in the middle of the road. I narrowly missed these and made the determination to keep a sharp lookout in case of a recurrence.

I had got my journey nearly over, and had got back to the main road when I met a second flock. This time the result was disastrous alike to the machine and to myself and passenger, the machine being damaged severely.

Surely something should be done if cattle-driving after dark is to be allowed. The least that could be done would be for the drivers to carry a red lantern to warn road users of the danger. Of course, this being in the night neither of us saw the sheep until we were too close to stop.

With best wishes for the continued success of your publication,

F.H.W.

### A Problem that Baffled.

Sir,—May I ask in the columns of *The Motor Cycle*, your correspondent "Elucidator" (September 5th), whether he would object to my putting his "statements" in this way.

Motor cycle, 3 cwt. load, has 6 feet head resistance, and motor car, 30 cwt. load, has 30 feet head resistance. (So far I agree for the time being.) Thus motor cycle for each windage-unit meets half load-unit.

Motor car for every windage-unit meets one load-unit. So

Motor cycle, six windage-units  $\times$  half load-unit = three windage-load units.

Motor car, y windage-unit  $\times$  one load-unit = thirty windage-load units.

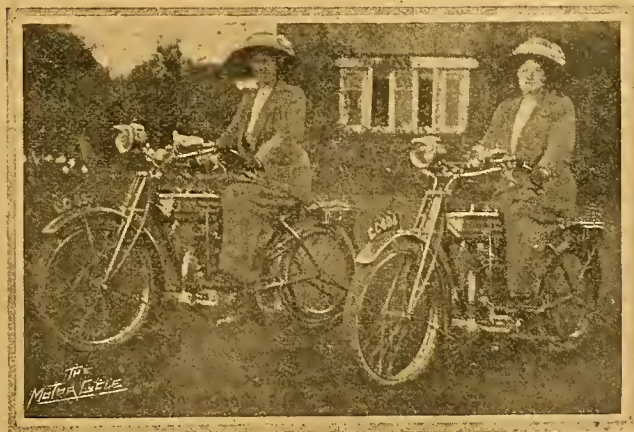
Load-windages (three to thirty) are not as one to five, as is the petrol consumption

If "Elucidator" objects to this, please say why?

WRANGLER.

### Brakes in the Six Days' Trial.

Sir,—The comments of the judges on the behaviour of the brakes during the Six Days' Trial have naturally been perused by us with considerable interest. Most manufacturers fit their own rear brakes by means of rod and lever applications. It is with the front brakes that we are particularly concerned, inasmuch as we, or our licencees, are responsible for the production of almost every front brake that is used on a motor cycle to-day and applied by Bowden wire mechanism. While we are not responsible for the fitting of them, manufacturers themselves doing that part, yet we are well aware of the great difficulties that are presented in fitting them effectively. The peculiar design of some front forks has a great deal to do with the question. Generally speaking, however, our front brakes can be fitted with the utmost efficiency, but we, and makers, recognise the extreme danger associated with making these brakes act as effectively as they can be made to act. The front brake is one which must be used with extreme caution, and we should never



Two Westmorland lady motor cyclists, the Misses M. & A. H. Beck, with their 3½ h.p. Rudge machines. The above photograph was taken as they were leaving St. Albans for North Westmorland—a distance of 270 miles. After reaching Grantham rain fell all the time till they reached their destination.



advise that it be adjusted so as to lock the wheel as quickly as the back brake, as anyone who rides a motor cycle knows that under certain conditions to jam on a front brake is to court disaster. Speaking from many years of experience we say that the leverage afforded is generally sufficient, and it is certainly so on our own designs. We would approach with great hesitation the alternative suggested by the judges in the Six Days' Trial. To adopt a method of applying the front wheel brake to the rim at an angle of, say, forty-five degrees to the direction of rotation would be putting much too great a power of retardation in the hands of the rider. Under ordinary circumstances, and under certain conditions, the presence of mud and grit might cause a sudden dead-lock with disastrous results. Even if it were desirable, in many cases it could not be done owing to the construction of the spring forks, unless the brake shoe were fitted to the girder tubes instead of to the forks proper—an application which motor cycle engineers would certainly not regard favourably.

BOWDEN WIRE, LIMITED.

### Three-speed Hubs.

Sir,—It seems somewhat of a paradox that, just when the three-speed hub has proved its great reliability, there are makers who come along with new two-speed machines for next year. With the desire for a fairly high top gear and a very low bottom gear, the necessity for an intermediate gear should be obvious, as this middle gear removes the monotony of using the lowest gear too frequently. The present big demand for three-speed hubs suggests that next year will be a three-speed year.

Looking backwards, one recollects how the now universal three-speed hub for pedal cycles met with a lot of opposition in its early days, but, in spite of this, it quickly ousted the two-speeder. History appears to repeat itself in the case of the three-speed motor hub, as the old arguments are now trotted out by a few critics against this fitting.

The modern three-speed hub embodies the best type of gearing and the best type of clutch in a very neat form, and its weight is quite in proportion to the weight of the vehicle, and probably does not add as much weight (relatively speaking) to the motor cycle as does the three-speed hub to the pedal cycle.

As very few motor cycle manufacturers have the plant and experience necessary to make a gear as it should be made, it seems advisable to leave its manufacture to the firms who have specialised in this class of work for many years, and no doubt these firms will soon give us the perfected article—a strong, simple hub gear and clutch, smoothly and easily operated, of moderate weight, and almost everlasting wear, and as free from trouble as its pedal cycle prototype.

A point not to be overlooked is that the modern three-speed hub does not interfere with the simple and pleasing lines of a motor cycle, and machines so fitted present a much neater appearance than machines fitted with midway gear boxes, as the latter are invariably ugly.

H.U.B.

### Belt and Chain Transmission.

Sir,—In "Occasional Comments" "Ixion" seems hurt about the superiority of the chain over belt, as he is using the latter. I have preached for many a year with not the least success that the efficiency, *i.e.*, the power transmitted from one shaft to another by a belt, cannot exceed 60%, whereas the maintained efficiency of the chain drive is over 95%, but it must be borne in mind that the standard of accuracy necessary for a successful chain drive is very much higher than that which will do for a belt; this, doubtless, is the cause of many chain troubles, and the chief reason why manufacturers, particularly the assemblers, do not wish to be troubled with the alterations necessary for converting a bicycle from belt to chain drive. I have seen many a motor bicycle with the back wheel out of alignment for the purpose of preventing the belt mounting the pulley because the centres are different—this is fatal to the chain drive. The centres of the sprockets with a chain drive must be in the same plane, and it is only the very merits of the chain which lead to the thing being exposed to the dust and mud. "Ixion" grumbles that his particular chain drive had to be adjusted more than is necessary as a rule with a belt; this is absolute proof, in my opinion, that the chain was wrongly mounted, and though he may be extremely experienced in driving motor bicycles, his remarks that the threads of the

bolts were stripped and that the flimsy nuts were badly burred reflect, in my mind, adversely on the mechanic and not on the machine. For the benefit of your innumerable readers, I venture to make a few suggestions as to screw threads and nuts. The reason why nuts are burred generally is because a shifting spanner, not fitting the flats snugly, is used; nothing but a properly fitting set spanner should be used, particularly if the nuts are somewhat undersized for the work imposed upon them. Screw threads are chiefly stripped by carelessly or rather not squarely forcing down the nut, and the nut is frequently forced over a gritty or almost choked thread, with the result that both threads are spoilt. No two threads should be engaged unless they are scrupulously clean, and I think that bicycle makers must improve the cleanliness of their machines much further than they have already done, or they will be fostering the trade in well sprung, light four-wheeled cyclecars.

CYCARS.

Sir,—Your contributor, "Ixion," seems to have been unfortunate in his experience of chain-driven motor cycles, judging by his remarks in your issue of the 22nd ult. I have owned three chain-driven machines, and have never had any cause to regret my choice of drive, although the chains received very little attention in the way of oiling, etc., and were used in all weathers.

On my present machine I find it necessary to tighten the engine chains about every 1,000 miles and the driving chain about every 700 miles, riding with sidecar and passenger. Surely this is not an excessive amount, and the adjusting of all three chains is a very simple matter.

My experience of belt-driven machines is somewhat limited, but I have memories of being constantly employed shortening belts to prevent slipping on moderately steep hills when I owned a belt-driven machine, and I have often been amused when some member of the "knot" brigade has "sprinted" past me on the road, and whom I have overtaken further along repairing a broken belt—a sadder, but perhaps a wiser man.

A stoppage due to a broken chain I have never known, but should a link break it is not a difficult matter to repair it, provided one carries a few spare split links.

With regard to two chains sharing a common adjustment, while one must admit this is wrong theoretically, in practice it will be found of little importance.

I ought perhaps to say that my machines have been 1910, 1911, and 1912 models of the same make, and it is possible that the chain drive is better adapted to this particular machine than the majority of motor cycles.

I should not trouble you with this letter, but I feel it is only fair to give my experience of, at any rate, one make of machine with chain drive after "Ixion's" rather critical remarks.

A. E. LOE.



A. Batchelor, of Eassie, Glamis, with his 3 1/2 h.p. 1912 Triumph and Grosvenor double seated sidecar. The rider says that he has never stopped for want of power on any of the Perthshire or Forfarshire main roads, even with the full equipment of passengers.



Sir,—I see E. K. Wyatt is complaining of belt drive, so I think it only fair to put in a word for belts. I will take for example the return journey of my holidays from Helensburgh to Stony Stratford.

First day (166 miles). Helensburgh to Kendal (rain in Glasgow). No trouble.

Second day (260 miles). Kendal to Stony Stratford. Tightened belt a shade as it was raining. (I find it best to have the belt a shade tighter for wet weather.) Before I continued my return journey from Kendal I climbed two sides of Kirkstone Pass (Windermere and Ambleside), and although I was using a low gear and it was raining, the belt did not slip. I had rain for the first 100 miles. I was using a Stanley belt which had already done just over 1,200 miles. My machine is a  $3\frac{1}{2}$  h.p. Zenith, and I always reckon to get at least 2,500 miles out of a belt, so this works out at 6d. per 100 miles.

C. L. MOUBRAY.

Sir,—I was very interested by "C.P.A.'s" letter on belt speed in a recent issue, as it touches a point of design that I have always considered wrong in the belt and chain counter-shaft gear driven machine, which, by the way, is the drive I favour most. As "C.P.A." clearly shows, the belt is commonly run far too slow. I am therefore of the opinion that the belt drive should be from the engine to the counter-shaft, and chain from the counter-shaft to wheel; this would give the following advantages:

- (1.) A higher belt speed, making less strain on belt, absorbing more vibration, and giving a longer life.
- (2.) Retaining the use of an adjustable pulley, which could be at least 6in. diameter to ensure plenty of grip.
- (3.) A softened drive to the gears.
- (4.) The belt would be less apt to get wet, as it would be further from the splashes made by the back wheel, and it would have the drying effect of the warm engine pulley.

I would like to hear if any makers have tried this style of drive, and if so, with what results.

J. DUNCAN.

### Rotary Engines.

Sir,—On reading the last number of *The Motor Cycle* I noted with much interest that experimental rotary-engined motor cycles are on test. It is, I believe, claimed that greater efficiency and horse-power can be obtained from them than from the stationary type, weight for weight. I think it extremely unlikely, however, that the rotary engine will be an improvement on the ordinary type; in fact, it will probably prove to be very inferior, both as regards reliability and fuel consumption. The trend of aeroplane designs is to do away with the rotary engine and replace it with the ordinary vertical type. One may safely say that the rotary engine has had its day, and any attempt to incorporate it in the motor cycle must certainly spell disaster.

VERTICAL.

Sir,—With regard to rotary motors, our knowledge of this type of motor is almost entirely confined to the Gnome aeroplane motor. Given constant attention and frequent disembowelling, the engine has given aviators what they wanted, i.e., sufficient power for cert in limited periods, and, without doubt, aviation owes a debt of gratitude to the makers.

The advantages of the rotary engine are (1) even torque, (2) lightness, and (3) easy cooling, but this latter usually takes place on one side of the cylinder more than on the other, hence liability to distortion, unless special precautions are taken in the design. Against these advantages must be set (1) short life and (2) lubrication difficulties. The rotary engine is very extravagant in oil (most of which is flung out with the exhaust), and feeding it in with the fuel does not sound an inviting proposition. (3) Inefficiency. No Gnome comes up to its R.A.C. rating, even though a higher compression engine might be more efficient. (4.) The high speed rotary engine is a very real danger, and, apart from the risks of internal rupture, gyroscopic action seems, from aviation experience, to be a very doubtful blessing. Immunity from sideslip can be gained in other ways.

In aviation, the rotary type has "just suited" for a while, but for safety, reliability, and fuel efficiency there are better engines, and before long it will doubtless go. In view of its inherent disadvantages. I doubt its capacity to succeed in the motor cycle.

G.M.P.

Sir,—Gyroscopic reactions are not the simplest phenomena we know, although they may be briefly stated thus. When the axle of a rotating body is twisted the body resists the twist strongly, and as strongly tends to twist the axle at right angles to the direction in which the applied force is trying to twist it.

To get a clear idea of the reason of this, suppose a flywheel rotating slowly about a vertical axis so that to one looking down on it it is rotating clockwise. Now I pull the top end of the axle south and push the bottom end north. In doing so I give the northward portion of the rim an upward motion and the southward portion a downward motion. But the flywheel rotating carries these portions with their respective upward and downward momentums round, and after a quarter of a turn of the flywheel we find that the east side has an upward momentum and the west side a downward one. The axle accordingly tends to tilt, the top to the west, the bottom to the east, i.e., at right angles to the direction in which I was trying to tilt it.

Applying this reasoning to a bicycle, we see that the gyroscopic effect of the flywheels is to resist twisting the cycle round a corner, and when in spite of it the cycle is twisted, to react in the direction of twisting the tyres out below the rider.

This does not apply to engines mounted across the machine as in the 2½-3 F.N. There the reacting twist is fore and aft.

A simple way to prevent gyroscopic effect is to have two flywheels parallel to each other rotating in opposite directions. This is practically accomplished in the engine described in last week's issue, which should (unlike the ordinary engines) have absolutely no external gyroscopic effect.

This principle has been suggested to prevent gyroscopic effect in aeroplanes, e.g., by employing two Gnome engines rotating in opposite directions. Of course, in the framework between the two engines severe stresses might be set up by the counterbalancing gyroscopic forces; indeed, it may be remembered that such strains were suggested as possible causes for the unknown disaster which overtook the high speed turbine destroyer *Cobra*.

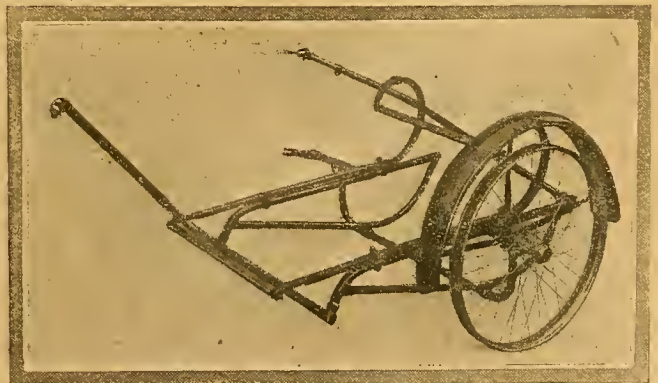
N. S. MAIN.

### Sidecars and Safety.

Sir,—Referring to your remarks in your last issue regarding the recent sidecar fatality, and your recommendation for an additional attachment being fitted as per your sketch.

In my opinion the extra tube you recommend is quite unnecessary, and I feel certain that, if it were possible to prove it, it would be found that sidecars with four-point attachments are more liable to break than properly designed sidecars with three-point attachments.

In connection with the enquiry into the circumstances attending the sad accident in which Mr. Power met his death a fortnight ago, I was consulted by the solicitor engaged in the case to give an independent expert opinion as to the cause of the accident, and therefore made an examination of the motor cycle and sidecar. I found the sidecar was one of the four point attachment variety, having two attachments at the front, somewhat similar to those shown in your illustration, and the axle tube was cranked with the object of having the sidecar wheel in line with the driving wheel.



"THE CHAR-OT," a specially strengthened sidecar frame, designed for a low body position. The maker's name is withheld, as the article will not be ready for the market till November.



All four attachments to the motor cycle were sound, but the tube running parallel with the bicycle had broken close up to the T lug which carried the forward cross member of the frame.

I have no doubt that the breakage was due in a great measure to unequal distribution of weight, but in my opinion the extra attachment had hastened matters and caused a breakage to what would otherwise have been a bent tube.

At the inquest on the 7th inst., Mr. Alex Craig, M.I.C.E., was called by the authorities to give expert evidence, and he stated that the tube had become crystallised through vibration, and I take it that sidecarists generally will require to know that all sidecars are not open to this dread possibility, and will welcome an explanation of its prevention.

It is tolerably well known that the sidecar is "theoretically" wrong in its conception; but, in spite of this, it has been developed on absolutely safe lines by trial and elimination of error, therefore the margin of design for safety is perhaps narrower in this than in any other vehicle on the road.

It is not possible to produce a perfectly rigid sidecar frame, and the ill-considered tendency for bringing the wheel further back to be level with the driving wheel, and at the same time pushing the body forward so as to bring the passenger on to a level with the driver, throws too much weight on the unsupported part of the frame, and weakens it considerably.

The extra attachment at the front is introduced to strengthen the frame, but in practice it only stiffens the side tube and destroys its elasticity. The effect of this is to confine the vibration to a short length of tube, which eventually will break in its weakest point, i.e., the nearest brazed joint.

There are other important considerations, such as the special quality of tube required for the maximum of strength, the attachments of the springs, balance of weight carried, etc., which have been tested and proved by many thousand miles riding over all sorts and conditions of roads in public competition and private touring.

The conclusion is that, provided the sidecar is properly made, it can be used with full confidence and certainty of excellent service.

W. MONTGOMERY.

#### Transmissions.

Sir,—The experience of motor cyclists writing under the above heading is so contrary to my own that, in justice to the company manufacturing the belt and tyres fitted to my machine, I gratefully record my experience.

I have driven a 5.6 h.p. twin two-speed Bat sidecar combination with a 1in. x 9ft. Dunlop belt 2,200 miles. The belt has been shortened twice only, is still almost as good as new, and looks good for double the mileage it has already done. On the driving wheel is fitted a Dunlop 650 x 65 light car grooved tyre, which has run 1,700 miles, has never been punctured, and the tread has worn only to the extent one might reasonably expect. Further, I would add that my runs have been mostly over very hilly country (Cornwall) with a surface not above the best. F. C. POLGLASE.

#### The Braking Effect of Compression.

Sir,—In answer to Mr. West's letter appearing in *The Motor Cycle* recently, I should like to say that I quite agree with him regarding what he says about the braking effect of compression, and that it has none. But this is only a term used, the braking effect is really got from port friction; the piston on the induction stroke induces the charge under a partial vacuum, therefore the pressure under the piston is greater than on top, and the piston, coming down on that pressure, retards the free motion of the engine. Precisely the opposite occurs on the exhaust stroke; the piston is then going up the cylinder with a positive pressure forcing the charge out; this also has the effect of retarding the rotation. If it were not for these forces, the speed and power of an engine would be unlimited, assuming the mechanical parts could be made to stand the strains.

HENRY GRAFTON.

#### SUMMARY OF CORRESPONDENCE.

Mr. S. R. Ashford writes that he was not disqualified in Class III. of the Streatham hill-climb, but that somehow, thinking that Class III. was the racing class, he stripped his machine, and, on finding out his mistake, did not ride.

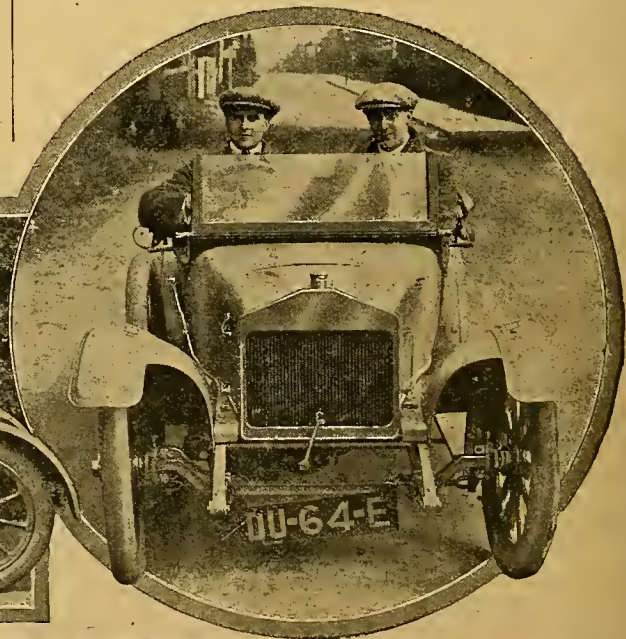
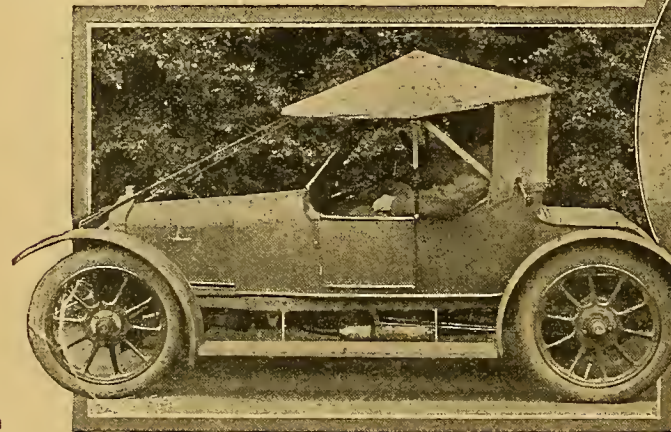
The Bosch Magneto Co., Ltd. write that the trouble experienced with magnetos in the Six Days' Trials were in every case caused by mud and water being allowed to get on the high tension cable and run down to the socket in which the cable fits. This cable end, not being fitted with wax according to instructions, gradually permitted an accumulation of conducting material which ultimately caused a short circuit. A Bosch magneto ran during the whole of the Olympia Show with water pouring over it.

F. W. Roberts writes that at the Leeds and Sheffield and Hallamshire M.C.C. speed trials he tied with J. Haslam and beat him in the return. Both rode 6 h.p. Zeniths.

Several letters are awaiting Mr. W. A. Hallsworth, the inventor of the hand-starting device for four-cylinder F.N. motor cycle engines illustrated on page 1003 in *The Motor Cycle* of September 5th. Will he kindly send his full postal address to the Editor?

Will the motor cyclist who borrowed a Lodge plug near Watford communicate with the lender Mr. H. A. Freeman, Leves Villa, St. John's Road, Watford?

A letter addressed to R. Marley, 30, Woburn Place, W.C., has been sent back to us through the returned letter office. If the correspondent will forward his correct address the reply to his query will be sent to him.



THE NEW 10 h.p. FOUR-CYLINDER SINGER CYCLECAR.

Side view of the new Singer showing its clean lines and Sankey detachable wheels.

Front view from which will be noticed the ample width mudguards with inside extensions.

The *Motor Cycle* representative at the wheel drove the machine on one of its first trials, and will shortly give it an extended test.





THE weather was fine and cool with little or no wind for the postponed 150 miles race of the British Motor Cycle Racing Club, held last Saturday. Great interest has been taken in the event by reason of the fact that it was almost a Tourist Trophy reunion, the entry list being a representative one of fifty-six runners, twenty-five of that number being in the Junior Race. Unfortunately, the non-starters were rather numerous, only fifteen actually answering to the call of names in the first event, which was started at 11 a.m.—much earlier than advertised—and which accounts for the small sprinkling of spectators when Major Lindsay Lloyd gave the signal to start.

#### The Junior Race, 150 Miles.

The starters in this event were as under—

Rider and machine.	c.c.
J. T. Bashall (2 cyl. Douglas) ... ..	350
A. B. T. Bashall (2 cyl. Douglas) ... ..	350
F. A. McNab (2 cyl. Douglas) ... ..	350
S. L. Bailey (2 cyl. Douglas) ... ..	350
V. Wilberforce (2 cyl. Douglas) ... ..	350
A. E. Woodman (2 cyl. Humber) ... ..	345
S. W. Phillpot (2 cyl. Humber) ... ..	345
Sam Wright (2 cyl. Humber) ... ..	345
Hugh Mason (2 cyl. Nut-Jap.) ... ..	350
W. A. Jacobs (1 cyl. Singer) ... ..	299
H. V. Colver (2 cyl. Enfield) ... ..	348
F. G. Edmond (2 cyl. Humber) ... ..	340
H. C. Newman (1 cyl. Ivy-Precision) ... ..	346
A. J. Jenkins (2 cyl. Douglas) ... ..	350
P. W. Owen (2 cyl. Forward) ... ..	344

Of the machines, perhaps the most interesting was Colver's new model Enfield with a new engine of the company's own make. It has overhead inlet valves, forced lubrication, and a magneto in the tank. It has great promise. Newman used

the Brampton gear, as he found it greatly assisted him by "reviving" the engine when a low ratio was employed for a few seconds. J. T. Bashall rode his brother's Junior T.T. winner. Jenkins rode a Douglas in full touring trim, and had, in fact, ridden it down from Liverpool the day previous. Owen's red Forward was conspicuous for its big petrol tank. The Douglas and Humber teams promised a keen struggle, and so it proved.

#### The Race Described.

At the start Bashall and Bailey shot ahead on their two-speeders, and after passing the members' bridge the riders had already formed a long procession, showing how some men gain a substantial lead right away. At the end of the first lap Bailey was in front, closely followed by Edmond and Woodman, Newman on the single-cylinder being in close attendance. Edmond's engine commenced misfiring, and on the next round Wright had gained second place. Edmond was fourth, J. T. Bashall fifth, and Newman sixth. As time progressed, it was seen that the two favourites, Bailey (Douglas) and Wright (Humber), were always in sight of one another and often following one another's back wheels.

The Nut-Jap, which had started indifferently with Mason, its rider, tinkering with the carburetter as he sped along, was noticeably improving every lap and began to overhaul the leaders. On the sixth lap Wright gained the lead with Bailey close behind and the third man (Woodman) a long way off. J. T. Bashall was fourth and Newman fifth. Wilberforce was one of the earliest to stop for replenishments. Wright led until the tenth lap, though both he and Bailey were obviously keeping their machines well in hand, which was natural in view of the strenuous nature of the test. They were lapping at about 55 m.p.h., though both can maintain over 60 m.p.h. when they desire it. Mason was now fourth, with Woodman still going consistently.



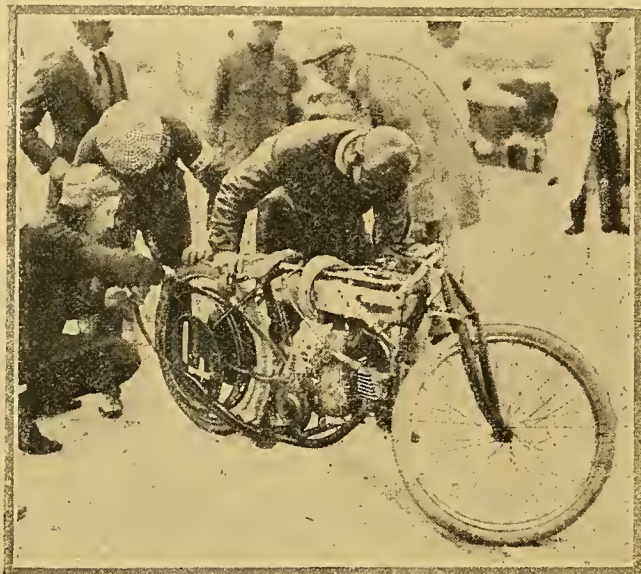
V. Wilberforce (2½ Douglas) in the Brooklands Junior T.T. Race passing the competitors lined up for the Senior event



## Junior and Senior T.T. Races at Brooklands.—

## A Steady Trio.

Competitors to attract special notice were Owen, Phillpot, and Jenkins, who had apparently adopted a set speed of about 48 m.p.h., and nothing would tempt them to go faster. The sight of others speeding past at over 50 m.p.h. did not concern them. Colver stopped to clean a plug, McNab rode on a flat back tyre. On the twelfth lap Bailey had gained a useful lead over Wright, but both these riders were nearly a lap ahead of the rest of the field. Colver withdrew his Enfield owing to a broken exhaust valve, his



Scene at the replenishment depot. S. L. Bailey changing the belt on his Douglas. He ultimately won the Junior event from a big field.

spare being too long, and misfortune also befell Newman, his valve rocker breaking when he was among the first half dozen.

At the end of the first hour Bailey still led, the distance credited to him being fifty-two miles three yards. He at once stopped, replenished his tanks, and changed a belt. McNab blew off another tyre, so this time fitted a new wheel from "Bizzy" Bashall's machine which had been withdrawn in the seventh lap with engine trouble. Mason, with his overhead valve Nut-Jap, had now crept up to second place, which position he was destined to hold almost to the finish. Audrey Bashall came into control on a flat tyre, which had blown off the rim and almost thrown him. Jacobs was delayed owing to a lengthened valve. Wright unfortunately blew off his rear cylinder, so Bailey was left without a rival, Mason having lost time at the start.

Bailey and Mason clung together for several laps, though Bailey had completed forty-two laps when Mason had thirty-nine to his credit, the next in order of merit at this point being: Wilberforce (33 laps), Woodman and A. B. Bashall (32 laps), Jenkins (31), Phillpot (29), Owen and Edmond (28), and McNab (26). These were the only ten left in the running.

The number was reduced by Audrey Bashall's retirement, due to a leaking tank, and Edmond who was the victim of hard luck. A stone got in the belt rim, threw the belt off, and jammed the back wheel, with the result that the rider ran into the bank, but luckily sustained no injury.

## Tyre Troubles on the Track.

More tyre trouble befell Jenkins. Bailey's Douglas continued to run most consistently, the engine emitting a roar resembling a rotary aero engine. He finished a winner by two complete laps in the record time of 2h. 49m. 45s. Being informed that the three-hours record was within his reach, he hastily refilled and was off again, and succeeded in capturing this record also. Mason, as was expected, came in an easy second, and six were left to fight out the third

position, viz., Woodman, Jenkins, Phillpot, McNab, Wilberforce, and Owen. Interest had waned as they were so far behind. The last-mentioned had two cases of tyre trouble, so retired, and, despite a delay in changing a valve, Woodman, the popular one-legged rider, finished third, six minutes ahead of Jenkins.

The times for the 150 miles are:

			h.	m.	s.
1.	S. L. Bailey	(2½ Douglas)	...	...	2 49 45
2.	Hugh Mason	(2½ Nut-Jap)	...	...	3 0 35
	A. E. Woodman	(2½ Humber)	...	...	3 50 21
	A. J. Jenkins	(2½ Douglas)	...	...	3 56 5
	F. A. McNab	(2½ Douglas)	...	...	...

## The Senior Race.

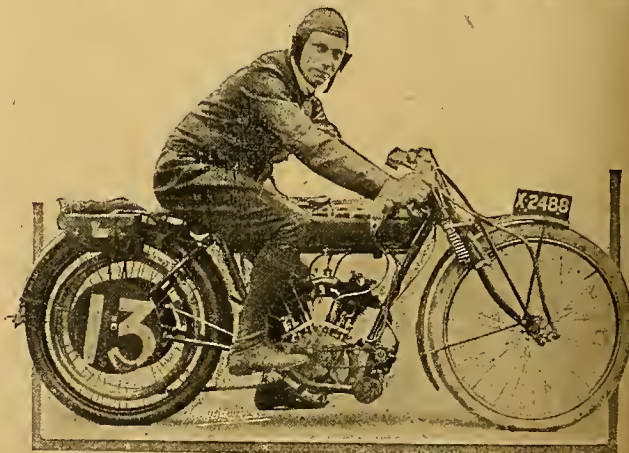
The stragglers in the Junior event were so long finishing that a start had to be made with the Senior Race. By this time the spectators had greatly increased in numbers, and, with a field of twenty-six starters on faster machines, the interest was great. It was a sight to be remembered when Mr. Loughborough dropped the flag, all getting away smartly, though S. R. Axford unfortunately collided with another competitor in mounting, and his machine was thrown to the ground, breaking the oil pump and causing other minor damages.

## The Senior T.T. Competitors.

The starters and their machines were:

			c.c.
J. R. Haswell	(Triumph)	...	499
S. D. Timson	(Rudge)	...	499
C. R. Martin	(Triumph)	...	499
F. K. Portway	(Triumph)	...	499
S. Russell Cooke	(Rudge)	...	499
Stanhope Spencer	(Rudge)	...	499
W. H. Elee	(Rudge)	...	499
A. G. Miller	(Premier)	...	499
E. B. Ware	(Zenith)	...	498
H. Huckle	(Zenith)	...	498
P. Weatherill	(Zenith)	...	495
V. E. Horsman	(Singer)	...	499
J. L. E. Emerson	(Norton)	...	490
P. Brewster	(Norton)	...	490
S. F. Garrett	(Green-Precision)	...	499
H. C. Mills	(Green-Precision)	...	499
J. W. Woodhouse	(Regal-Precision)	...	499
S. R. Axford	(Martin-Jap)	...	494
C. R. Collier	(Matchless)	...	498
H. Cork	(Matchless)	...	498
W. Howard	(Matchless)	...	498
A. N. Tooney	(Matchless)	...	498
T. A. Carter	(Martin-Jap)	...	498
L. Hill	(Rudge)	...	499
F. Bateman	(Rudge)	...	499
O. C. Godfrey	(Indian)	...	498

L. Hill led on the first time round with Emerson, on the long-stroke Norton, close behind. Great things were expected



Hugh Mason (2½ h.p. Nut-Jap), who finished second in the Junior Race.



### Junior and Senior T.T. Races at Brooklands.—

of the last mentioned rider, for several Brooklands *habitués* told us that he had lapped during the week regularly at 68 m.p.h. S. F. Garrett (Green-Precision) was next, P. Brewster fourth, and H. Petty fifth. In the second lap Garrett dropped back owing to the loss of his oil filler cap; O. C. Godfrey and C. R. Collier crept up several places, and next came Woodhouse, Petty, Haswell, Martin, and Horsman.

### The Leaders Unchanged.

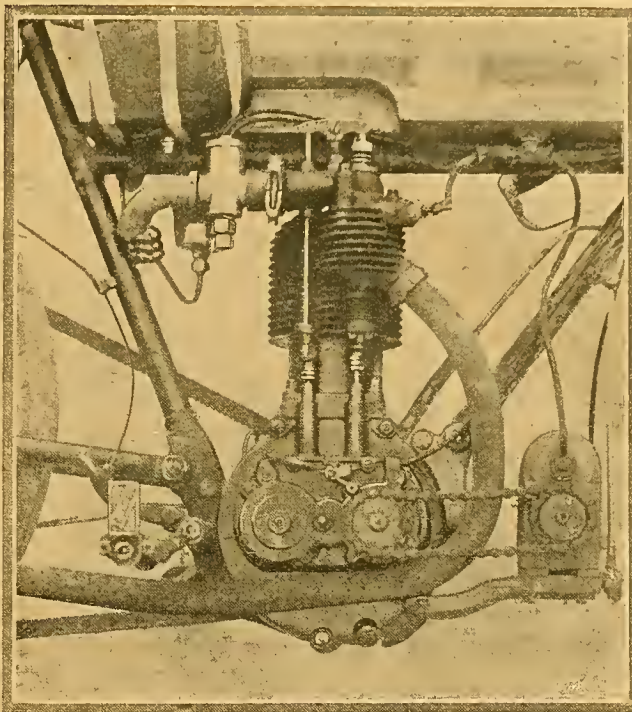
Up till the tenth lap the positions of the two leaders were unchanged. Hill and Emerson had set up a crackling pace, completing lap after lap in 2m. 28s. (66.11 m.p.h.) as regularly as clockwork. But would the pace last? Emerson gained the lead on the eleventh lap, Hill being next, T. A. Carter third, and Brewster fourth.

Emerson showed no signs of relaxing his pace and gradually drew ahead until on the fourteenth lap he was half a minute in front. In the fifteenth lap Hill was seen to have dropped out, leaving a still bigger gap between the leader, Emerson, and the next man, C. R. Collier. In this round there was a general shuffling of positions, Weatherilt gaining third place, Ware fourth, Godfrey fifth, Haswell sixth, Martin seventh, and Carter eighth. Several now stopped for replenishments, including Emerson, which caused his supporters disappointment as he was inside record and had a chance of the hour record if he had kept going. J. Mills retired with a seized engine (his radiator was seen to be leaking), and Garrett's pulley came off.

On the eighteenth lap Weatherilt was second, Collier third, and Haswell fourth. The last named had damaged his standard engine the day previously and decided to use the experimental Triumph engine with overhead inlet valve. It had been ridden down by road, but it was going great guns on the track, and, in fact, carried Haswell without a stop or trouble of any kind. Weatherilt dropped back owing to a stop for petrol, and at the twentieth lap the positions were: Emerson, Collier, Carter, Haswell, Godfrey, the two last named hanging together as is their wont when competing in track races.

Huckle, who had been going extremely well, dropped out owing to a broken valve lifter rocker, and Brewster also had engine trouble. Ware and Collier now made another pair to fight out a duel of their own, and together were second and third at the end of the first hour, Emerson, of course, still leading with over sixty-three miles to his credit. Martin, who was using Haswell's old record-breaking Triumph engine, had to change a valve. Woodhouse retired with a seized engine.

After one and a half hour's riding Emerson had completed apparently thirty-five and a half laps, and was two and a half laps ahead of the field—something like a convincing lead. Of course, every one was asking who was Emerson, whose Norton



A racing Triumph, with overhead inlet valve, ridden by J. R. Haswell at Brooklands on Saturday last. It is unlikely that it will be supplied to the public for some time.

was shining so conspicuously. He is a native of Hull. Carter, though travelling magnificently, sits his machine peculiarly, swaying his body about all the time. When Godfrey stopped for oil naturally W. H. Wells was there with the big syringe. F. A. Applebee looked after the petrol, and the rider was off again before one could realise he had stopped at all.

### An Unmistakable Winner.

As the fifty-sixth lap drew nearer it was regarded as a foregone conclusion for Emerson and his wonderful Norton which had run regularly throughout. There was hardly any variation in his lap times, and the exhaust continued to be as crisp as ever. Finishing an easy winner, and capturing three world's records on the way, he continued for the three hours' record, but had perforce to give up owing to tyre trouble.

Weatherilt was second in order, but, nearing the end of the 150 miles, his oil tank burst and poured oil over the engine and belt causing the latter to slip. He made a gallant attempt to finish, knowing that Haswell was only half a lap behind, but the Triumph rider never slackened a tick, and he came in a good second, Godfrey also passing the Zenith rider on his last lap. Ware was fifth, Carter sixth, and Elce seventh, these being the only competitors allowed to finish.

The official times of the survivors are given hereunder:

		h. m. s.
1.	J. L. Emerson (3½ Norton) ...	2 20 52
2.	J. R. Haswell (experimental Triumph) ...	2 34 8½
3.	O. C. Godfrey (3½ Indian) ...	2 35 32½
4.	P. Weatherilt (3½ Zenith) ...	2 36 42½
	E. B. Ware (3½ Zenith) ...	2 45 17
	T. A. Carter (3½ Martin-Jap) ...	2 48 56½
	W. H. Elce (3½ Rudge) ...	2 50 6

### Details of Records.

In the Junior Race S. L. Bailey (Douglas) annexed the 150 miles record, time 2h. 49m. 45s., and covered 159 miles 990 yards in three hours, also a record in Class B.

In the Senior Race J. L. Emerson (3½ Norton), besides covering the 150 miles in record time (2h. 20m. 52s.), covered the 100 miles in 1h. 33m. 25½s., and in two hours traversed 127 miles 645 yards—all new Class C records.

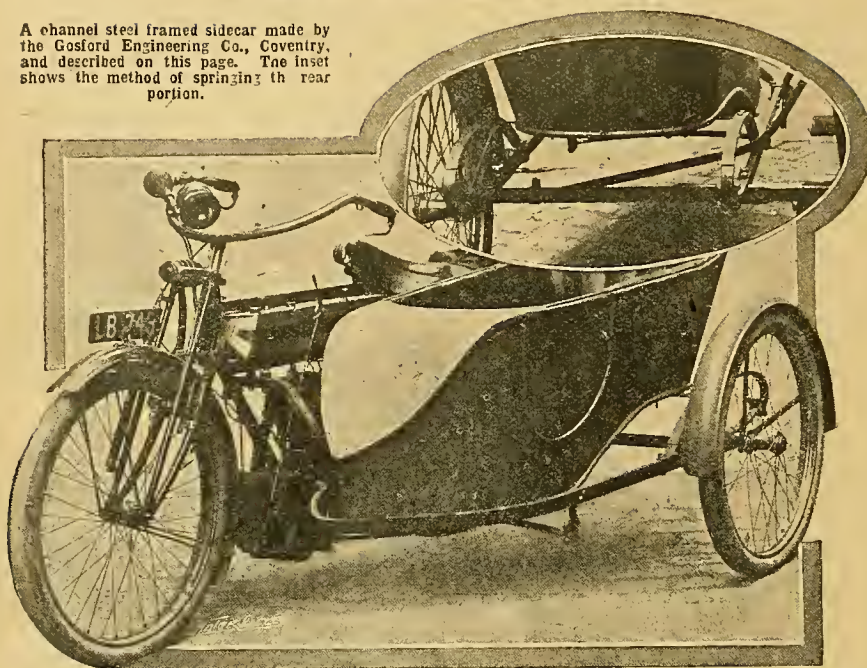


S. L. Bailey (2½ h.p. Douglas), winner of the Junior Race, shaking hands with W. W. Douglas.



## A CHANNEL STEEL SIDECAR FRAME.

A channel steel framed sidecar made by the Gosford Engineering Co., Coventry, and described on this page. The inset shows the method of springing the rear portion.



We recently had brought to our notice a sidecar frame made on novel lines by its designer, Mr. W. E. Boyes, of the Gosford Engineering Co., Coventry.

The frame, which is attached to the motor cycle at the usual three points, viz., front down tube, seat tube, and chain stays, is made of channel steel. The body, which is made by the Bramble Mfg. Co., as will be seen, is suspended on two threequarter elliptical springs at the rear, and the front portion on one semi-elliptical spring set transversely to the frame.

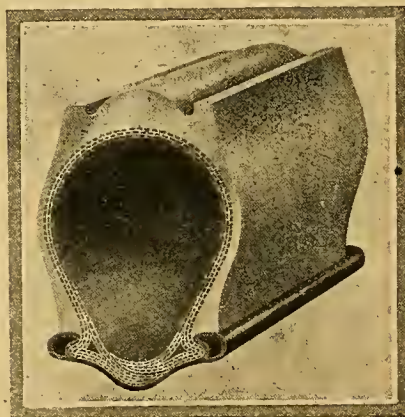
The present type of body is, we understand, only experimental, as in future the front portion will have an upward curve, so that if at any time the front stay of the sidecar should come loose or break, the makers claim that the sidecar will skid along the ground until the engine may be stopped.

One of the features of the frame is that there are no brazed joints or castings on any part of it. Another point worthy of note in the manufacture of the sidecar is its weight, and we are told that the complete machine without body scales exactly 48 lbs. Although being slightly under the average weight of this type of vehicle, it is of sound construction, and well made throughout.

## A Double Clinch Cover.

The Coventry Rubber Co., who are the manufacturers of the Three Spires non-skid tyre, have just introduced a new cover which they call a Double Clinch tyre. As will be seen on examination of the annexed illustration, which is that of a section of the cover, the walls close to the bead have been thickened so that when the tyre is compressed in use the opening and shutting action, which takes place usually right against the bead, is transferred to a point well above it and about the middle of the side of the cover. The base of the thickened rubber wall rests on the edge of the bead of the rim, thus

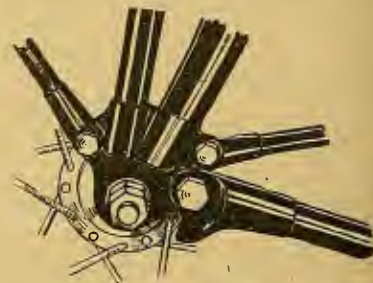
strengthening and supporting the weakest part of the cover. Motor cyclists know that there has been a considerable amount of dissatisfaction this year with some motor cycle covers owing to the way in



The Double Clinch—a new Three Spires tyre.

which they have given way at the beads. Mr. J. Jelly, the manager of the company, and patentee of this device, informs us that among the advantages of this new tyre are that creeping is prevented owing to the edge of the rim being gripped between the bead and the buttress. A perfect seal takes place between the rim and the buttress, making it impossible for water to get in at this point. Anti-skidding qualities are enhanced owing to

the tyre being always in a direct line between the wall and road. It is quite remarkable how the tyre stands up when pressure is applied to it, a partially inflated tyre being as rigid laterally as a fully inflated one of the ordinary type. The Double Clinch tyre is provided with a

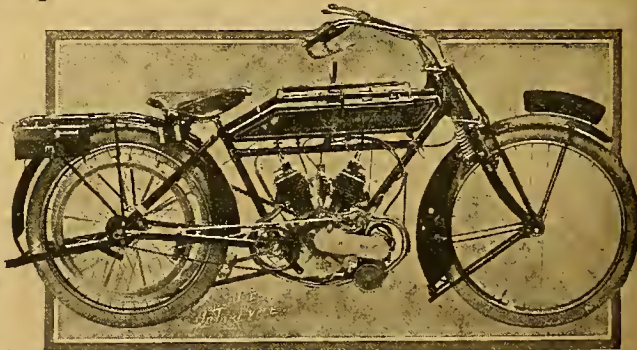


The Hazlewood front fork end, showing the mudguard stay and front wheel stand fittings.

non-skidding tread which is formed of two ridges moulded in such a position that the non-slipping parts are not worn down level with the cover before the tyre is worn out, thus making it equal to a plain tyre, but the anti-skidding parts are on the edges, where no wear takes place. This is a point often overlooked in tyre construction, and one worthy of the attention of readers. From an examination of the tyre we think that Mr. Jelly has a distinctly good thing in the Double Clinch tyre, but, of course, it is impossible to predict definitely its success or otherwise without a trial of a machine fitted with the tyre. There is, however, no reason why it should not be as fast or faster than an ordinary one, and if it transfers the bending stress to some other portion of the cover than the weak portion of the beaded edge, that alone justifies its existence.

## The 3 h.p. Twin Hazlewood.

Hazlewoods, Ltd., of West Orchard, Coventry, have for some time past been thoroughly testing a new 3 h.p. twin-cylinder model, and are now delivering it in considerable quantities. One day last week we were invited to inspect a batch of four which were being sent to South Africa. The machine resembles the well-known 2½ h.p. model in most respects, but is fitted with a twin-cylinder J.A.P. engine of 60 mm. bore and 76 mm. stroke. The frame has been considerably strengthened, and the "Mark V." Armstrong three-speed hub for 6 h.p. machines is employed. There are several detail improvements on the new model.



Valve side of the new 3 h.p. twin-cylinder Hazlewood.

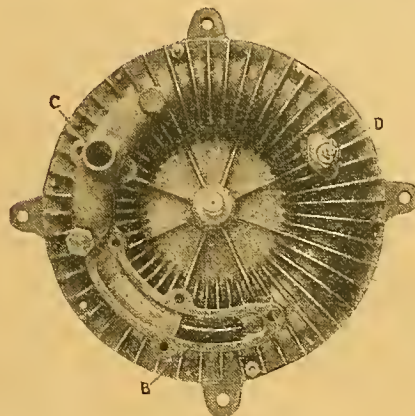


For instance, the footrests are mounted separately from the clutch pedal bracket; all control rods are quite straight; pedals are fitted, as the new Armstrong gear is capable of being started with the wheel

on the ground; a neat front wheel stand is now embodied with the front forks, and the mudguard stays are mounted on separate bushes on the fork-ends and merely held in position by set-pins. The

finish of the whole machine is carried out in the usual Hazlewood black and brown, and has a very neat appearance. On Hazlewood machines all nuts are either split-pinned or lock-nutted.

## NOVEL ROTARY ENGINE.



A novel rotary engine for motor cycles, invented by a well-known motor cyclist.

**A**N interesting engine has lately been completed which is the invention of G. T. Gray, a well-known Rudge rider. The cylinder consists of a circular endless tube in which four pistons *L* travel continuously in one direction. These are joined through a slot in the cylinder to arms which cross each other at the centre and work scissor fashion. Thus the space between any two adjacent pistons can be made to vary in size, which space forms the combustion chamber.

These spaces are caused to vary in size by connecting the four arms to four planet pinions by means of short connecting rods, so that as the planet pinions revolve they cause the arms and pistons to be alternately drawn together and moved apart. The pinions mesh with a sun wheel keyed

to the engine casing, and are carried on a cage *T* keyed to the main shaft.

It must be understood that as the four pistons travel round the cylinder in the same direction they alternately approach and depart from each other.

The operations of the four cycles in this engine are as follows: The port cut in the cylinder wall at *C* is the induction port. The timing of the planet pinions is so arranged that when any two of the pistons come opposite this port they shall be closest together. While they are passing it the forward one will accelerate, thus enlarging the space between them and drawing in gas. When just past the port the following piston will accelerate. The space between them will close up and compress the gas until they are closest together, which occurs at the dead centre

of the connecting rods. At this position the sparking plug *D*, which is fitted in the cylinder, will fire the gas. The power of the explosion will force the two pistons apart, although both continue to travel in the same direction.

When the pistons have been forced apart to their fullest extent they will have travelled round the cylinder to a position opposite the exhaust port *B*. While they pass this port the following piston will accelerate and push out the exhaust gas. This completes the cycle of operations.

As these operations take place between each of the four pistons in turn, there are four explosions per revolution, all taking place at one point in the cylinder, namely, where the sparking plug is fixed. It will be noticed that the piston does not uncover the plug until the gas is fully compressed so that a timed spark is not necessary.

A two-speed gear is provided by means of an internally toothed ring meshing with the planet pinions. Lubrication is provided by centrifugal force.

An outside flywheel can be fitted if required, but would not be necessary for speed work owing to perfect natural balance, total absence of reciprocating parts, and almost constant torque.

For certain purposes, cyclecars for instance, two or more complete engines could be coupled on to one shaft, the resulting motor being very compact, and the torque almost equal to that of an electric motor.

The design readily adapts itself to water cooling if necessary. Mr. Gray is anxious to dispose of the patents, and letters may be addressed to him c/o the Editor.

## THE RECORD-BREAKING NORTON— A NEW CARBURETTER.

The Norton motor cycle so successfully ridden by Mr. Emerson on Saturday last was supplied as a standard machine. On careful inspection after the race, we could find nothing about the engine that was not standard, except for strong valve springs. Piston, connecting rod, cams, etc., are all as usual. Those who favour the long stroke will be interested to know that the usual Norton sizes of 79 mm. bore and 100 mm. stroke were used. Mr. Emerson's lap times steadily improved, and the lap previous to the tyre trouble he completed at the speed of 67.94 m.p.h. This speed with the gear used equals 3,022 r.p.m., and a piston speed of 3,380 feet per minute.

The Amac Co., Aston, Birmingham, have decided to market a single lever carburetter which, after prolonged tests, has given excellent results. Outwardly it resembles the standard two lever type except for the absence of one control. It will have six small jets arranged as usual with one main control jet. The single barrel is operated in the usual manner, forming a combined throttle, choke tube, and air lever.

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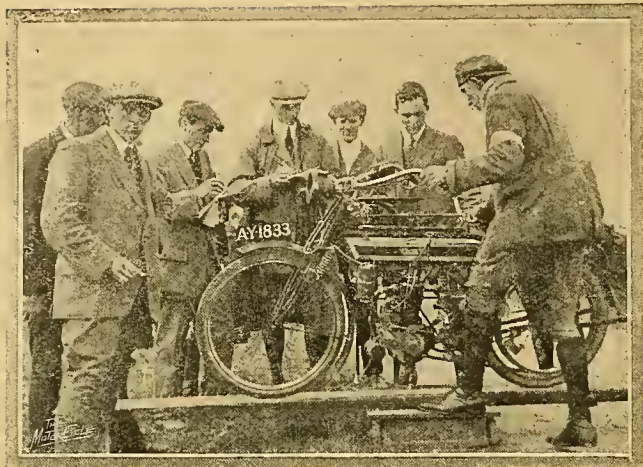
Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS—UNITED STATES: The International News Agency, New York.  
PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRIA: Gordon and Gotch, Ltd.;  
Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.),  
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## HILL-CLIMB AT AMULREE.



Competitors weighing in previous to the start of the hill-climb on Amulree last Monday.

THE Edinburgh M.C.C. held their annual hill-climb on this now famous hill. The bad weather which had prevailed had somewhat lessened the number of entries, but despite this they totalled forty-five. A noteworthy entry was the twin Indian ridden by Oswald G. Braid. It was the identical machine ridden in the 1911 T.T. Race by J. R. Alexander, when it had a capacity of 570 c.c., but when Alexander rode it (as he did) in the 1912 T.T. Race he had shortened the stroke and reduced the capacity to 496 c.c.

Another interesting machine entered was A. H. Alexander's 2½ Douglas with sidecar, in which he had the previous day successfully taken a passenger up the hill, and certainly in the lightweight class, as a solo machine, he played with the corners and made a fast ascent. The timing was electrical and automatic, each competitor breaking a thread which started a stop watch at both ends and breaking another at the finish that stopped both watches. Just at first it gave some trouble, one of the watches refusing to start, but this was soon put right.

Last year the starting point had been at the foot of the hill, and at the start competitors had to cross a bridge at right angles to the road. This, combined with the rough surface, caused the officials to look upon it as too dangerous,

and as a result the starting point was moved about 400 yards up the hill. The corners this year were rougher than last year, and did not appear to have been swept, but the second corner had been slightly more banked, which made it a bit better.

The start was timed for 1 p.m., but the first man did not get away till after half past, and this slight delay just prevented us seeing the last two events, the stopping and starting test and the sidecar class. The classes were eight in number, and were as follow:

Class I.—Novices (abandoned).

Class II.—Lightweights under 350 c.c. (handicap).

Class III.—Single-cylinder (handicap).

Class IV.—Twin-cylinder (handicap, abandoned).

Class V.—Scratch race, single or twin under 550 c.c.

Class VI.—Scratch race, single or twin under 1,000 c.c.

Class VII.—Stopping and starting test. Machines to be stopped after passing a line, wheeled back behind the line, and re-started again (a very good arrangement).

Class VIII.—Passenger machines (handicap).

The first man off in the lightweight class was McGregor (Douglas), but he stopped on the corner. He was followed by A. H. Alexander (Douglas), who made a fine ascent. A. U. R. Downe (2½ A.J.S.) fell, but restarted and finished. As the electrical timing "went on strike" just then he had to have another try and succeeded in making a clean ascent—lucky for him.

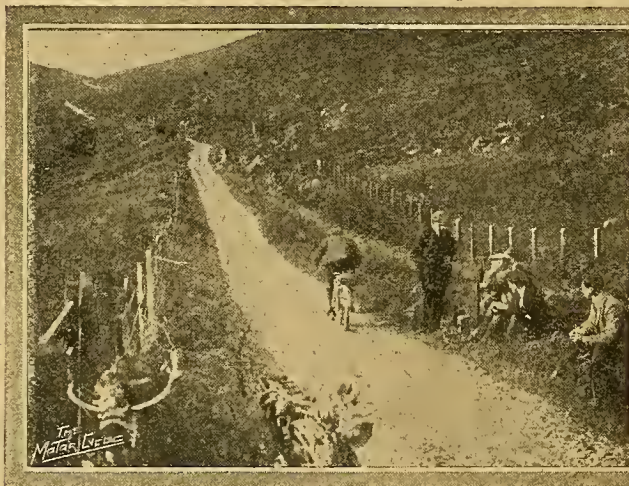
## Class III.

In Class III. all got round the bends without falling, but A. J. C. Lindsay had to dismount at the second bend and run alongside, while Oswald Braid (3½ twin Indian) stopped on the bend.

J. R. Alexander was to have ridden his 7 Indian in the passenger class, but had to content himself with the solo scratch class, as he had broken the low gear. He had some doubts about his possible success on the corners solo, but he managed to get round all right.

Taken all round, the event was a most successful one, the weather, which, till a few days previous, had been wet, decided to change and turned out gloriously fine for the weekend. A head wind did not help the competitors, but it was nothing like the half gale that blew during the same event last year. There is still a dangerous ridge just past the second corner that throws machine and rider off the ground, but otherwise, with a little sweeping, the road is not so bad, except at very high speed, when it becomes dangerous.

The results were not obtainable when we left, as no arrangements were made to work out the results on the spot. A proper list of entries was not available owing to late entries, but among many others might be named the brothers A. H. and J. R. Alexander, the brothers MacMillan on their Scott machines, and McGregor on his 2½ Douglas.



Breaking the tape at the start. The ends can be seen each side of the rider.

A rider of a 7 h.p. Indian, taking the first bad bend on Amulree.



## Torbay and District Open Hill-climb.

**L**AST Saturday the solitude of Halshanger, Dartmoor, was rudely broken by the crackle of many and various exhausts. One hundred and four entries were received for the above event. The weather was all one could wish, the organisation good, and nearly all the entrants faced the starter. The Brooklands postponed race prevented many more men from coming, but the committee regard over a hundred entries as very satisfactory, it being the largest gathering for an open climb held in the West. The hill in places had been washed out by the recent rains, but presented no difficulties on that score, and justified its description as a safe course, the event not being marred by the slightest mishap. There were the usual stops occasionally for traffic. A field was hired at the foot of the hill, and the weighing performed under a large oak. The hill is of rather a deceptive nature, being steeper than it appears to be, gradually approaching a hump half-way up. There is another smaller hump at the foot, over which many of the front wheels jumped yards. Timing was successfully carried out by telephone, a tent being erected at the top of the hill for the timekeepers and instrument. Times were thus known immediately a man passed the tape, and Mr. Coombs was busy working out the formulæ from the commencement, the whole being known very shortly after, except the team results, which will be known later. The men were despatched rather slowly at first, but afterwards went up at intervals of thirty seconds. G. Griffiths, on an 8 h.p. Zenith, secured fastest time of the day in 47s., G. Clarke obtaining the same honour for the singles in 49½s. F. Ball, on his Douglas, made a brilliant ascent in the excellent time of 56½s. R. Holloway only rode his 2½ h.p. Premier, but made good time, winning on formula. Miss May Walker rode in three classes, winning the ladies' class both on time and formula.

A large number of visiting motor cyclists and others were lining the route. The A.A. scouts gave assistance in marshalling the course, and the whole day was made a picnic by many local people. Cinematograph films were taken by Gaumont, to be shown at the Torquay Electric Theatre.

Unfortunately for the secretary, who was acting as starter, the principal members of the club are keen riders, and some were competing in five classes. This reduced the number of helpers somewhat, otherwise everything went well. The Triumph silver medal was won by R. W. Williamson for the best single-cylinder time in the unlimited club event. The Humber silver cup was won by A. Powell for the best lightweight performance.

### RESULTS ON TIME.

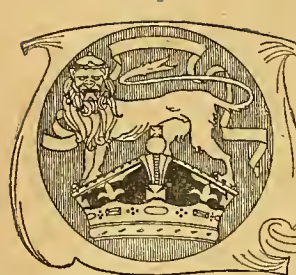
Open Lightweight Class.	Passenger Class.
F. Ball (Douglas) ... 56.5	G. Griffiths (8 Zenith sc.) ... 61.4
J. Dudley (Hobart) ... 63.2	500 c.c. Variably-gear'd Touring Machines.
A. Powell (Enfield) ... 68.4	R. Broadbear (Premier) 53.0
Club Lightweight.	V. Taylor (Rudge) ... 55.0
A. Powell (Enfield) ... 66.4	S. Crawley (Triumph) ... 56.0
W. P. Harding (Douglas) ... 70.0	500 c.c. Fixed Gears.
H. Benny (Enfield) ... 73.0	S. Crawley (Triumph) ... 52.0
Unlimited Racers.	R. Broadbear (Premier) 53.8
G. Griffiths (8 Zenith) ... 47.0	V. Taylor (Rudge) ... 55.2
G. Clarke (Rudge) ... 51.2	Ladies' Class.
R. Williamson (Norton) 52.4	Miss M. Walker (Douglas) 65.0
Club Event—All Comers.	Mrs. Tucker (Premier) ... 70.8
R. Williamson (Norton) 51.4	Mrs. Simpson (Rudge) ... 73.0
E. J. Hancock (3½ Premier) ... 58.2	500 c.c. Racers.
W. Chenoweth (3 Jap) 59.6	G. Clarke (Rudge) ... 49.6
	R. W. Williamson ... 51.0
	R. Broadbear ... 54.0

**RESULTS ON FORMULA.**—Event 1: 1, R. Holloway (Premier); 2, J. Dudley; 3, F. Ball. Event 2: 1, J. Dudley; 2, V. Taylor; 3, W. E. Rootes (Singer). Event 3: 1, A. Powell; 2, H. P. Overmers (Douglas); 3, W. P. Harding. Event 4: 1, W. E. Rootes; 2, V. Taylor; 3, J. Dudley. Event 6: 1, Miss May Walker; 2, Mrs. Simpson; 3, Mrs. Tucker. Event 7: 1, R. W. Williamson; 2, W. Chenoweth (Jap); 3, A. Powell. Event 9: 1, W. E. Phillips (Triumph).



HILL CLIMBING ON DARTMOOR. Incidents in connection with the open hill climb at Halshanger, organised by the Torbay and District M.C.C.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Sept. 19th	...	7.5	p.m.
" 21st	...	7.0	"
" 23rd	...	6.56	"
" 25th	...	6.51	"

## The Cyclecar Convenient.

A writer in *The Sunday Chronicle*, commenting on cyclecars, objects to tandem seating, but says the vehicle should be capable of being kept in the hall or front parlour!

## Police Trap.

A trap is working on the Maidstone Road between Riverhead and Seal, and an elderly motor cyclist on a luggage-laden touring machine, who was crawling along, was made one of the victims.

## Obstructing the Highway.

The landlord of the Gate, Matlock Bath, was fined 10s. and costs for obstructing the highway on the 31st ult. at Smedley Street Crossing. A trial from Liverpool was in progress, and a passing machine had jerked a stone against one of the hotel windows and broken it. This caused the defendant to place a rope across the road and keep it there about four minutes. The Bench considered the defendant had been very foolish indeed and inflicted the above penalty. The breakage was paid for.

## Belgian Race Meeting.

The automobile meeting at Spa, Belgium, September 21st to 24th, has received so far sixteen motor cycle entries. Among the entries are Indian, Rudge-Whitworth, F.N., Sarolea, Alcyon, Triumph and N.S.U.

## Stolen Motor Cycle.

A member of the A.A. has lost his 3½ h.p. Humber motor cycle and sidecar. It is a 1912 model and the frame number is 4251. The machine was stolen from a street in Camden Town.

## Motor Cycle Accident in America.

In our brief report of the sad track accident which took place in New Jersey, when Eddie Hasha rode over the palings on the top of the banking, we stated that it was reported that something went wrong with the engine, so causing the machine to leave the track. This was the general impression on the ground and was cable to us as the supposed cause of the accident. We now understand, from Mr. W. H. Wells, that it was quite a customary practice for Hasha, in endeavouring to overtake the other riders, to get on to the vertical palings at the top of the banking and Hasha (who was only just out of the hospital) might have become dazed, and owing to the speed at which he was travelling miscalculated his distance and ridden over the top.

## SPECIAL FEATURES.

### THE MOTOR CYCLE FOR TWO.

#### OPEN HILL CLIMBS

#### NORTH and SOUTH.

#### NOVEL ROTARY ENGINE.

## Overloading Sidecars—A Warning.

A member of the Croydon M.C.C., S. Hurlbart, sustained a nasty mishap near Bromley on Thursday last. He was driving an overloaded motor cycle and sidecar, when the bicycle broke just above the fork crown.

## Awards in the Six Days.

Mellor Jameson (6 h.p. Enfield sc.), who lost the A.C.U. gold medal, certificates, and silver cups awarded to him through being disqualified by the judges on a technical objection that his passenger had assisted in some slight adjustment of the machine, has been presented by the Enfield Cycle Co. with a silver cup on their own behalf to show their appreciation of his performance as a genuine private owner.

## Motor Cycle Taxation.

On Monday night last a White Paper was issued containing the report of the committee appointed last December to confer regarding the horse-power rating of motor cars. The committee suggest that the schedule of rates of duties should be amended in the case of motor cycles by the addition of a motor car or cyclecar class, not exceeding 5 h.p., to pay £1 per annum. The present taxation for a motor cycle weighing under three cwt. unladen, and with not more than three wheels, is £1. Cyclecars with four wheels, irrespective of weight and engine capacity, are at present liable to a tax of not less than two guineas, and if the cylinder bore exceed 102 mm. for singles and 72 mm. for twins, they are liable to a tax of three guineas. The committee's suggestion would mean that a cyclecar fitted with a single-cylinder engine not exceeding 89 mm. bore, or a twin not exceeding 63 mm. bore, would be taxed £1 irrespective of stroke. Four-wheeled cyclecars with engines over these dimensions would be charged at the usual motor car rates. Of course it must be taken into account that if this become law, and there is every reason to believe that it will, sidecar combinations where the engines exceed 89 mm. bore in the case of a single-cylinder, or 63 mm. bore in the case of a twin, will also be liable for the motor car taxation. The committee contend that the suggested alteration is to put on a fairer basis both the high and the low powered cyclecars and sidecars. Will the Treasury solve the definition of a cyclecar by means of taxation? It looks as though they will.



STOCKPORT M.C.C. SPEED TRIALS.

Two successful machines of a new make, built by J. Woodrow, of Stockport. J. Woodrow (5 h.p. Woodrow-Jap), the rider on the left, made fastest time of the day, while J. Emerson (8 h.p. Woodrow sidecar) was winner of the passenger class.





H. Thompson (3½ h.p. Kynoch) who it is said recently attained a speed of 59½ miles per hour for two miles. The ride was accomplished on a closed road. We should recommend Mr. Thompson to enter for Brooklands events.

#### An A.C.U. Worker.

Victor Hart, a prominent A.C.U. official, is shortly leaving for Johannesburg, where he has accepted the editorship of a leading automobile journal. We wish him success.

#### Preparations for 1913.

We saw F. W. Barnes last Saturday astride an experimental Zenith with a neat kick starter, and also a device enabling a free engine no matter what gear ratio is in use. Details cannot be divulged at present, as the machine has not undergone a sufficiently lengthy test.

#### The A.C.U., the Scottish A.C.U., and the M.C.U. of Ireland.

The reciprocity agreements between the Scottish A.C.U. and the M.C.U. of Ireland are practically complete, and will shortly be ready for signature. This means that members of the Irish and Scottish Unions may enjoy A.C.U. privileges in England, and vice-versa.

#### Auto Cycle Union News.

The following permits have been granted: The Liverpool A.C., hill-climb October 12th, and a reliability trial September 28th; the Manchester M.C., a hill-climb October 5th; the Birmingham M.C.C., a reliability trial September 20th; the Mersey M.C.C., a hill-climb on either 5th or 12th October. These permits for hill-climbs are granted subject to the hills being approved by the A.C.U.

**THE AUTUMN ONE DAY TRIAL.**—This event, which will take place on Saturday, October 26th, will start and finish at Kendal, while the course will be a stiff one in the Lake District. On the previous Friday there will be a council meeting in Liverpool at 2 p.m.

**THE FATE OF "THE MOTOR CYCLE" AND OTHER CUPS.**—It has been suggested that *The Motor Cycle*, *Auto Motor*, and *Motor Car Journal* challenge cups, formerly competed for in the A.C.U. race meeting now discontinued, should be put up for the following races, to be held by the British Motor Cycle Racing Club: One mile time trials, a three mile scratch race for machines up to 350 c.c., and a one hour scratch race for machines up to 500 c.c. This proposal has to come up before the General Committee for confirmation.

#### 1913 Models.

We have heard of a prominent West-country firm who are experimenting

with a four-cylinder air-cooled cyclecar. The machine is reported to be extremely neat in appearance, and as four air-cooled cylinders will keep cool on a motor bicycle, we see no reason why they should not do the same on a cyclecar if the engine be properly designed and fitted in front.

#### Motor Cycle Manager's Supposed Suicide.

It is with great regret that we have to announce the death of Mr. G. Schink, the London manager of the N.S.U. Company. Mr. Schink was a lieutenant of the reserve of officers in the German Army, and every year used to spend his holidays serving with the colours, to which time he used to look forward

FUTURE EVENTS	
Sept. 21.—Herts County A.C. Open Hill-climb.	
" 21.—Birmingham M.C.C. Open 24 Hours' Run to Carlisle.	
" 28.—B.A.R.C. Meeting.	
" 28.—Liverpool A.C.C. Open Reliability Trial.	
Oct. 5.—Edinburgh M.C.C. Open Hill-climb.	
" 5.—Manchester M.C. Open Hill-climb.	
" 12.—B.M.C.R.C. Race Meeting.	
" 26.—A.C.U. Open One-day Trial.	
Nov. 2.—N. Middlesex M.C.C. Open Winter Reliability Trial.	

with the greatest pleasure. He had just returned from his native country, and went straight to his office (Great Portland Street) and there, at the time of writing, appears to have shot himself, dying at once. No reason is known for this sad act. Mr. Schink was well known to the trade and to the many private owners he had to deal with, over whom he took the greatest trouble. He was an exceedingly hard worker, and to his untiring energy the success of the N.S.U. Company in England is due.

#### Arthur Moorhouse Memorial Fund.

The secretary of the Auto Cycle Union, Mr. T. W. Loughborough, writes to say that the above fund must now be closed. Will all holders of collecting cards therefore return them to the hon. treasurer, 22 and 23, Jewin Street, E.C., as soon as possible? Those who wish to subscribe to the fund, and have not yet sent in their subscriptions, are requested to do so without delay to the address given above.

#### The F.I.C.M.

During the Olympia Show week a meeting, at which an attempt will be made to re-found the Fédération Internationale des Clubs Motocyclistes, will be held of delegates from the bodies controlling motor cycle affairs in the various European countries and America, and to which the delegates from the Scottish A.C.U. and the M.C.U. of Ireland will also be invited. The secretary of the A.C.U. is using every endeavour to get into touch with the representatives of the foreign clubs. Curiously enough, the A.C.F. has so far ignored communications.

#### Urban District Council of Penge.

The Urban District Council of Penge, in a courteous letter, write as follows: "Complaints have been made by residents in Anerley that many motor cyclists ascend the Anerley Hill at a great speed, apparently for the purpose of carrying out speed tests, more especially on Sunday afternoons, and that it is not only a public danger, but also causes a nuisance by the noise created by the machines. The committee feel that they will be compelled to make application for speed limits in certain parts of the district if motorists will persist in travelling at such great speed, but they have, however, directed me to communicate with the motoring journals in the hope that they will appeal to those readers who travel through this district to drive slowly through the Anerley Hill and Beckenham Road, which are both busy roads with many sharp turnings, cross roads, and schools." Motor cyclists will do well to heed this warning.

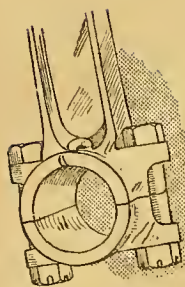


NECK AND NECK IN THE SENIOR T.T. RACE AT BROOKLANDS LAST SATURDAY.

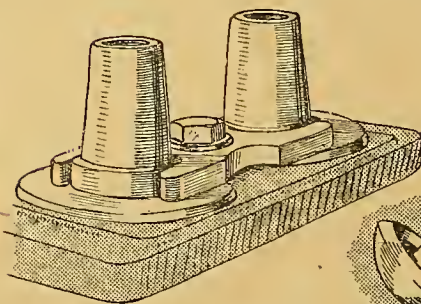
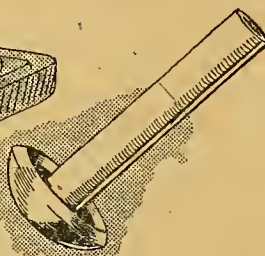
1.—The two competitors are: C. R. Collier (Matchless). 2.—O. C. Godfrey (Indian). The third rider is a competitor in the Junior event.



## NEW MODELS.



The big end.

A NEW CYCLECAR ENGINE.  
Method of holding down tappet guides.

Valve tappet.

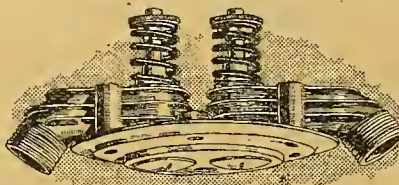
## A New Cyclecar Engine.

A new engine has been specially designed and constructed for cyclecar work by Manly and Buckingham, engineers, of Spon Street, Coventry. The engine, which is a single-cylinder air-cooled of 90 mm. bore  $\times$  120 mm. stroke, includes several interesting features.

The firm have kept two main objects in view—to make an engine which will stand the heavy work imposed by cyclecar usage and to keep the price within reasonable limits—and we may safely say that the latter has not been accomplished at the expense of the former.

The cylinder, which has deep radiating fins, is swelled out at the top to accommodate the separate head fitted with large overhead valves; incidentally the ridge in

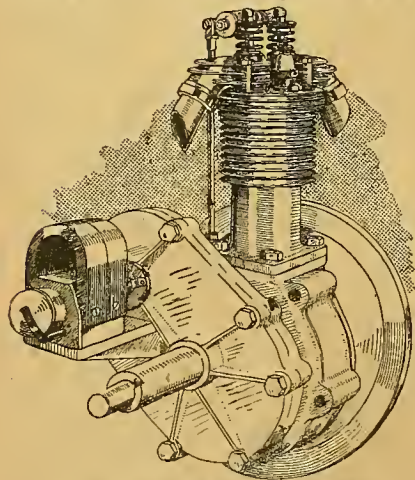
rockers can be removed with rockers and push rods complete. The crank case and timing case are cast in one piece and have a single cover plate, which carries the magneto, bolted on. Only two gear wheels are employed and the magneto is direct driven through



The cylinder head of the Manly and Buckingham cyclecar engine.

a flexible joint, consisting of a circular leather disc, to which are attached a pair of arms on the camshaft and a corresponding pair (at right angles) on the magneto-shaft.

The crankshaft, which is a solid forging of 1 1/4 in. diameter, is mounted in very long, plain bearings, and carries at one end a 15 in. outside flywheel weighing 28 lbs. The unit has a neat but solid appearance, and the engine without flywheel weighs well under 50 lbs. The firm are building a cyclecar to which this engine will be fitted; it has a pressed steel frame and a double chain drive to a counter-shaft, from which the drive is continued by belts. A two-speed gear is obtained by clutching either one or other of the chains to the counter-shaft.



The general arrangement of the new cyclecar engine.

the combustion chamber prevents the valves falling into the cylinder unless they should break off just below the seating. They are, however, well designed and made of carefully selected material, and should give little trouble in this way. As will be seen from the sketch, the cylinder head is flat and projects slightly into the combustion chamber, a broad flat face making the joint compression tight. A particularly sound piece of design is incorporated with the overhead valve rockers, which are supported on a double row of adjustable ball bearings, thus preventing the rattle which is so common with this type of valve gear. By undoing a single nut the arm which carries both

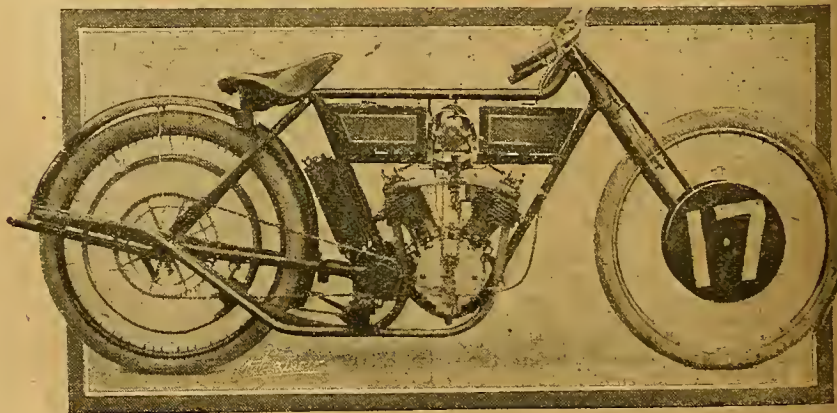
The engines will, however, be built and supplied without the cyclecar.

The Premier Motor Co., of Birmingham, who manufacture the Rex-Jap and the P.M.C. voiturette, are at present experimenting with a four-wheeled cyclecar. Details are not yet publishable, but the machine will probably be listed for 1913.

We inspected last week a useful little refinement which Rudge-Whitworth, Ltd., will fit to their 1913 models. Riders of these machines know that the magneto timing adjustment is one of the simplest. It will be further simplified for next year, as there will be no necessity to remove the timing gear cover. On the side of this latter, and opposite the end of the armature spindle, is a small gunmetal inspection cover plate. When this is removed, the magneto can be retimed with the greatest ease.

The Arden Motor Co., of Berkswell, Warwickshire, have made several improvements to the cyclecar which we recently described and illustrated. The magneto is now carried on a special bracket above the twin cylinders of the J.A.P. engine, and not down below as previously arranged. A new fan bracket has been designed which allows for adjustment of the belt. A large cylindrical exhaust box is now fitted in front of the engine just behind the starting handle; the J.A.P. automatic carburettor is used. This is connected to the cylinders by a flexible piece of armoured hose. Twenty-eight inch wheels are now fitted as standard. A recent inspection of several of these machines which are going through the works confirms our good opinion of this runabout, which is a sound practical job fitted with an upholstered body of reasonable width. The complete turnout presents a very smart appearance.

The latest firm to enter the motor cycle industry is the Monopole Cycle and Carriage Co., Ltd., Coventry. This firm has previously confined its attention to pedal cycles, but at Olympia, Stand No. 56, two motor cycles will be shown, namely, a 3 1/2 h.p. three-speed and a 2 1/2 h.p. F.E. lightweight. The name of the firm was omitted from our plan of the Show, published on September 5th, because this is the first intimation we have received that the Monopole Co. was marketing a motor cycle for 1913.



The 1913 twin Enfield. This new model has a 54  $\times$  76 mm. engine, overhead valves, and forced feed lubrication. It was ridden by H. V. Colver at Brooklands last Saturday.



# MORE WORLD'S RECORDS SMASHED—September 14th, 1912—BY

British Motor Cycle Racing Club Meeting,  
Brooklands Senior T.T. Race, 150 Miles,

Mr. J. L. E. Emerson on a 79 x 100 — 490 c.c.

## NORTON

(the smallest engine in the field)

WON, setting up the following

### WORLD'S RECORDS:

**100 MILES—**

1 hour, 33 min., 25.4 sec.

**150 MILES—**

2 hrs., 20 min., 27 sec.

**2 HOURS—**

127 miles,  
645 yards.

The  
marvellous  
regularity  
with which  
the NORTON can  
be appreciated  
from the fact that each  
of these records represent  
an average speed  
of about 64 miles per hour.

REMEMBER—

The NORTON holds the  
**1 MILE WORLD'S RECORD**  
**73.57 MILES PER HOUR**

made by Mr. P. Brewster. July 20th, 1912.

## NORTON MOTORS,

LONDON AGENTS: Harrod's  
Stores, Brompton Rd., S.W.;  
Robertson's Motor Agency, 157,  
Great Portland Street, W.

Sampson Road North,  
:: BIRMINGHAM. ::

*In answering this advertisement it is desirable to mention 'The Motor Cycle.'*



## IMPORTANT PUBLISHERS' ANNOUNCEMENT

During the two years "THE AUTOMOBILE ENGINEER" has been in existence, it has proved remarkably successful. We feel, however (and the impression is confirmed by the opinions expressed by many readers), that its scope and usefulness are curtailed by the restrictions which are necessarily imposed through publication only once a month.

The prime interest of "THE AUTOMOBILE ENGINEER" has all along been centred upon internal combustion engineering, but it has been found impossible, in a monthly paper, to treat the subject as broadly as was intended originally, and as is desirable in view of the enormous increase in the applications of the internal combustion engine.

It has therefore been decided to broaden the scope of the paper considerably by dealing also with other and larger internal combustion engines, their construction and application; in fact, to make the paper the authority on the subject of modern prime movers.

To render this enlargement of scope possible the paper will be published fortnightly, on and after October 2nd next, and the title will be altered to

## INTERNAL COMBUSTION ENGINEERING

incorporating "THE AUTOMOBILE ENGINEER."

The size, style and price of the paper will remain as at present, and the features which have established "THE AUTOMOBILE ENGINEER" will be retained, but the greater frequency of publication will permit exhaustive treatment of a far wider range of subjects than hitherto has been possible. Fuller details will be published later.

THE AUTOMOBILE ENGINEER PUBLISHING CO., LTD.

(PROPRIETORS: ILIFFE & SONS LTD.)

20, Tudor Street, LONDON, E.C.

— THE —

### 'Mon-Aero' Mudguard

YOU WANT cleanliness of rider & machine.

" " engine efficiency.

" " every ounce of power.

AS DO

**Mr. HARRY LONG.** 20,000 miles Sidecar record holder. He uses the M.A. Guard, and says—"the advantage gained against head wind is enormous, would not be without it."

**Mr. G. E. STANLEY.** The Singer Crack Track Rider. He uses the M.A. Guard, and says—"should be fitted to every motor cycle."

**Mr. A. J. DIXON.** The well-known Gold Medallist (the only man to climb Porlock), who, in expressing his appreciation, says—"the 'Mon-Aero' Guard is a very necessary part of the equipment of all motor cycles."

Note result in Coventry and Warwickshire  
— Club Hill Climbing Competition. —

**6 Firsts. 2 Seconds.**

The 'Mon-Aero' Guard fitted—gave that little extra power and did the trick.

These men know their work and requirements. Do you? Send at once and hold your own in all weathers.

For Competitions—for Touring—for Sidecar work  
**YOU WANT IT .. .. 12/6**

See your local agent—if not in stock write direct.

All remittances to be crossed London City and Midland.

**THE COVENTRY AUTO-AERO CO., LTD.,**  
**Priory Street, Coventry.**

## AMAC=====AMAC

**STREATHAM & DISTRICT  
OPEN HILL CLIMB.**

**5 FIRSTS.**

**2 SECONDS.**

**6 THIRDS.**

◆◆◆◆◆  
**INTERNATIONAL CUP RACE  
IN FRANCE.**

BAILEY on a DOUGLAS, First in Lightweight Class, and THIRD amongst a whole field of Heavyweights.

◆◆◆◆◆  
**BROOKLANDS.**

**SENIOR AND JUNIOR T.T. RACES.**

Senior Race, Second, HASWELL on a TRIUMPH.  
Junior Race, Second, MASON on a N.U.T.

**Successes everywhere.**

**Too numerous to advertise.**

**ASTON MOTOR ACCESSORIES CO., LTD.,**  
**TALFORD STREET, ASTON, BIRMINGHAM.**

## AMAC=====AMAC





### Cumberland M.C.

Results of this club's hill-climb, which was run off on September 12th, at Warrnell Fell, on the knock-out system, are as follows: Motor bicycles—1, L. Pierce (3½ Corah-Jap); 2, J. W. Moffat (3½ Singer); passenger class—1, Eric Longden (8 Jap); 2, —. Payne (7 Indian).

### Cork and District M.C.C.

The results of the reliability trial, which took place on September 11th, are as follows: 1, H. Flannagan (3½ Zenith); 2, L. Dobbin (8 Matchless); 3, R. S. Russell (3½ Matchless). The course included two severe hills, and the chief award was a prize presented by the Rover Company.

### Cape Peninsula M.C.C.

A slow speed test was held on August 24th. A deserted level road was chosen and 176 yards measured off. Competitors were not allowed to exceed two miles an hour, and the best performances were put up by the following: 1, Rev. S. B. Priston (3½ P. and M.), time 3m. 58½s.; 2, Dunean McMillan (3½ Bradbury), 3m. 53½s.; 3, A. Douglas (3½ Triumph), 3m. 18½s.

### Bristol M.C.C.

The members' hill-climb was run off on September 14th on the final portion of Blagdon Hill. The course was straight, about one mile long, and not steeper in any place than 1 in 10. The various classes were run off on the "knock-out" system. Results:

Up to 345 c.c.: W. B. Gibb (2½ Douglas).

Up to 500 c.c., touring class: W. H. Moxley (3½ Rover).

Unlimited: P. H. A. Mathews (3½ Ivy-Precision).

Passenger class: F. P. Davies (3½ Rudge Multi).

Best performance by member who had not previously won a prize in any hill-climb: H. Hutchinson (3½ Rudge).

### Portsmouth M.C.C.

A hill-climb took place at Gravel Hill, Shedfield, on the 11th inst. Results:

#### SOLO CLASS.

	Time.	F.M.
1. Bleach (3½ Bat) ... ..	26½m.	27
2. Kiln (2½ New Hudson) ... ..	44m.	26
3. Pearson (3½ Premier) ... ..	32½m.	25

#### SIDECAR CLASS.

	Time.	F.M.
1. Kiln (3½ New Hudson) ... ..	44½m.	30
2. Tappenden (3½ Premier) ... ..	50m.	28
3. Pearson (3½ Premier) ... ..	52½m.	27

The surface of the hill was fair, and the length about two-thirds of a mile.

### Sheffield and Hallamshire M.C.C.

The results of the recent reliability trial, Sheffield-Pickering-Sheffield, are as follows:

	Marks lost.
1. S. Sawyer (3½ Premier) ... ..	2
2. D. Bradbury (3½ Norton) ... ..	6
3. J. Haslam (6 Zenith) ... ..	6
4. F. Dover (3½ Premier) ... ..	7

Qualified for bronze medals: E. Cross, G. Carter, C. S. Squire, N. Newton, and J. A. Stacey.

The reliability trial on Saturday last proved a great success. The course embraced some of the most beautiful moorland country which surrounds Sheffield, and was quite off the beaten track. There was one test hill and the usual checks. Official results are not known until the arrival of the secret check times, but the following competitors completed the course in the allotted time: Sawyer (3½ Premier), Dover (3½ Premier), Durant (3½ Norton), Parker (2½ Douglas), Lambert (3½ Kerry-Abingdon), Dudley (3½ Precision), Eardley (3½ Premier), Carter (3½ A.J.S. sc.), Stacey (3½ Rudge), Donovan (3½ Zenith), and A. Carter (3½ A.J.S.).

### Herts County A. and Ae.C. (Motor Cycle Section).

Owing to the gratifying support promised, the third quarterly trial will be held on October 5th.

### Luton and South Beds. M.C.C.

The non-stop reliability trial at 20 m.p.h., held on September 7th, proved a great success. The course, which was a severe one of sixty-four miles, included Sharpenhoe, Pulloxhill (check), Liddlington, and Offley. Extra marks were awarded for quiet driving through villages and good ascents. Result: 1, Terry (New Hudson); 2, Gutteridge (Rudge); 3, Mussell (Rex 5 h.p.).

### Manchester M.C.

A hill-climb was held at Heyden Bridge on Saturday last. The various classes were run off on the "knock-out" principle with handicap, and the results were as follow:

Single-cylinder motor bicycles: 1, H. Taylor (3½ Bradbury); 2, J. Smith (3½ Triumph); 3, H. Reed (3½ Dot).

Twin-cylinder motor bicycles: 1, H. Reed (8 Dot); 2, J. McCann (7 Indian); 3, A. H. Cowap (7 Indian).

Sidecars: 1, H. Bottoms (3½ Triumph); 2, A. H. Cowap (7 Indian); 3, W. Houghton (3½ Bradbury).

H. Reed (8 Dot) made fastest time of the day.

### Cowbridge and District M.C.

A hill-climb was held at Ewenny on September 11th, the length of the hill being seven-tenths of a mile. Results:

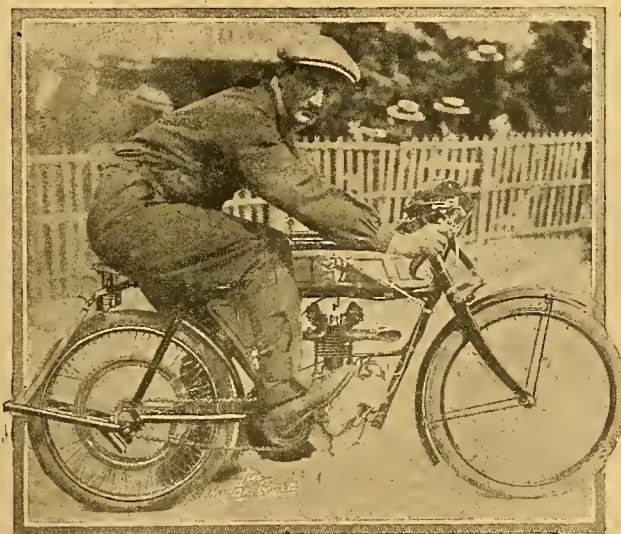
Class I. (Machines with capacity up to 350 c.c., club members only).—1, J. R. Homfray (2½ h.p. Enfield); 2, D. J. Evans (2½ h.p. Enfield).

Class II. (Machines with capacity up to 560 c.c., club members only).—1, E. Clissett (3½ h.p. B.S.A.); 2, J. R. Staiens (3 h.p. James).

Class III. (Handicap for machines of any capacity, open to members of the Bridgend and Cowbridge Clubs).—1, E. Clissett (3½ h.p. B.S.A.); 2, A. Sanders (3½ h.p. Triumph).

Class IV. (Sidecar handicap, club members only).—1, J. R. Staiens (3½ h.p. James).

Apart from the programmed events, an open class was arranged. In the final H. Wessendorf (3½ h.p. T.T. Premier) beat E. Clissett (3½ h.p. T.T. B.S.A.).



M. Stoeffel (Alcyon). This machine was used in the International cup race in France. It is interesting to note this "pocket edition" of a motor cycle. We are surprised the organisers allowed such an obviously racing mount to compete against touring machines.



## Club News—

## Dewsbury M.C.

A hill-climb was held near Dewsbury on the 10th inst. Result: 1, F. Eastwood (6 Enfield); 2, H. Hainsworth (3½ Triumph).

## North-west London M.C.C.

The annual race meeting and gymkhana will be held at the Stadium on the 28th inst. The programme will consist of sixteen events, handicap and scratch races, cyclecar time trial, relay race, and five fancy events. An open permit has been granted for the scratch and handicap races. Light-weights are limited to 300 c.c. Entries close on the 24th and should be sent to Mr. H. J. Pooley, 23, Clifton Avenue, Finchley, N.

## Scottish A.C.

A class for motor cycles is included in the closed hill-climbing competition which is being arranged by the Scottish Automobile Club to take place at Tummel Bridge, Perthshire, on September 28th, commencing at noon. Entries close on September 24th, 11 a.m., to the secretary of the club, Mr. R. J. Smith, 163, West George Street, Glasgow.

## Western District (London) M.C.

A petrol consumption trial will be held on September 21st, starting at 4 p.m. A course sixteen and a half miles long has been selected, starting from the Bull Hotel, Gerrard's Cross, and passing through Slough. The results will be calculated by the A.C.U. formula, i.e.,  $\frac{W \times M \times X}{P}$ . Entries should be sent to the hon. sec., Mr. M. G. Tweedie, 1, Baldwyn Gardens, Acton, W., at once.

## Ipswich and District M.C.C.

Speed trials over a measured course of one mile took place on September 7th, and resulted as follows:

Single cylinders up to 500 c.c.—1, D. W. Popplewell (Triumph); 2, K. Portway (Rudge); 3, R. Fenn (Triumph).

Lightweights up to 360 c.c.—1, K. Portway (Humber); 2, D. W. Popplewell (Singer).

Touring models up to 500 c.c.—1, W. E. Sneežum (L.M.C.); 2, D. W. Popplewell (Triumph).

Any machine up to 1,000 c.c.—1, D. W. Popplewell (Triumph); 2, K. Portway (Rudge).

## Leicester and District M.C.C.

The results of the third reliability trial for the Edwards Cup, held on the 5th inst., over a fifty-six mile course, are as follow:

	Total error.
1. T. Nedham (3½ Champion-Jap) ...	1m. 12s.
2. H. Petty (3½ Singer) ...	2m. 19s.
3. A. L. Barker (3½ Singer) ...	2m. 41s.
4. N. Mee (3½ Bradbury and sc.) ...	3m. 3s.
5. R. G. Wainwright (3½ Champion-Jap) ...	3m. 8s.
6. E. Folwell (3½ B.S.A.) ...	3m. 10s.

## North Staffs M.C.C.

Results of the knock-out hill-climb held at Winkhill, near Leek, during the week-end are as follows: Fastest time, J. A. Prendergast (3½ Ivy); final of handicap, A. Miller (3½ Rudge).

## Derby and District M.C.C.

Results of the hill-climb held recently have been declared as follows: 1, G. S. Hall (3½ Scale-Jap); 2, F. A. W. Greeves (3½ Triumph). The winner of the petrol consumption trial held on Saturday last was A. L. Spriggs (3½ Bradbury).

## Walthamstow M.C.

A non-stop and reliability trial from Clacton-on-Sea to Woodford was held recently. The following made non-stop runs: J. W. Percival (2½ Douglas), F. W. Applebee (2½ Centaur), F. Picken (3½ Rudge), W. S. Low (3½ Scott), H. Chambers (3½ Humber sc.), D. Fairhead (5 Indian sc.), and L. Pullen (10-12 Waverly, car).

## Leicester County M.C.C.

A successful hill-climb was held at Ab Kettleby on Thursday last. The following are the results:

## LIGHTWEIGHTS.

	Results on time.	Results on formula.
H. J. Woodgate (2½ Douglas) ...	1	2
H. Petty (2½ Singer) ...	2	1
O. R. Pratt (2½ Premier) ...	3	3

## STANDARD SINGLES.

M. Simpson (3½ Rudge) ...	1	2
F. Snowden (3½ Rudge) ...	2	1
W. Lee (3½ Singer) ...	3	3

## T.T. SINGLES.

H. Petty (3½ Singer) ...	1
E. Folwell (3½ B.S.A.) ...	2
M. Simpson (3½ Rudge) ...	3
F. Snowden (3½ Rudge) ...	3

## STANDARD MULTI-CYLINDER MACHINES.

J. Pass (6 Clyde) ...	1	1
W. P. A. Chapman (6 Champion) ...	2	2
W. G. Glover (6 Rex) ...	3	3

## OPEN CLASS.

J. Pass (6 Clyde) ...	1
W. G. Glover (6 Rex) ...	2
H. Petty (3½ Singer) ...	3

## SIDECARS.

W. P. A. Chapman (6 Champion) ...	1	2
W. G. Glover (6 Rex) ...	2	3
F. Snowden (3 Rudge) ...	3	1

Ab Kettleby is on the main road from Nottingham to Melton Mowbray. The surface is very good, the bends are not severe, and the steepest gradient is about 1 in 6.



A group of competitors and spectators at the start from Sheffield of the Sheffield and Hallamshire M.C.C. trial on Saturday last.



Club News.—

**Manchester M.C.**

An open hill-climb will be held on October 5th. Full particulars may be obtained from Mr. C. E. Kettle, 31, Market Street, Manchester.

**Bournemouth and District M.C.C.**

A special run to North Devon will take place at the end of the month, starting on the 28th inst. A prize will be awarded to any member climbing Porlock, Beggar's Roost, or Lynton hills.

**Liverpool A.C.C.**

An open reliability trial will take place over a circular and sporting course in North Wales for the Reliance Challenge Cup on the 28th inst. The start will be from Hamilton Square, Birkenhead, at 8.30 a.m. There will be numerous classes and awards for both amateur and trade riders.

**Belfast and North of Ireland M.C.C.**

A successful hill-climb was held on the 7th inst. at Lisnabreeny Hill, Castlereagh. There was only one event on the card, which was run off in the presence of a large crowd of spectators on the time trial principle. The competitors started singly, and the handicap of each was determined by a preliminary run over the course; the time was taken on a stretch of about 600 yards. Result: 1, T. M. Cluny (Chater-Lea Peugeot); 2, W. Dunbar (Swallow Jap); 3, T. Brown (Brown). R. McKibbin (O.K. Precision) gained special prize, fastest time 25½s.

**Newcastle and District M.C.**

The Bevan-Gould reliability trial and hill-climb will take place on the 22nd inst. Route: Heddon, Corbridge, Hexham, Brunton Bank, Stagshawbank Top, West Woodburn, Elishaw Bridge, Otterburn, Elsdon, Thropton, Rothbury, Lakeside, Corby Hill, Alnwick, Eglingham, Wooler, Millfield, Cornhill, Coldstream, Kelso, Jedburgh, Hawick, Langholm, Longtown, Brampton, Greenhead, Chollerford, and Newcastle—a distance of roughly 220 miles. The hill-climb will be held on Corby Hill, which is about seven miles from Rothbury, and no competitor will be allowed to dismount after leaving Rothbury until he has reached Alnwick, where a stop will be made for weighing.

**Bedford and District M.C.C.**

A hill-climb took place on the 5th inst. The fastest time of the day was made by C. W. Jamieson (8 Matchless). Results:

Touring Class.—1, Woods (3½ Triumph); 2, Murkett (3½ Rover); 3, Allen (3½ Triumph).  
Tourist Trophy Class.—1, Crump (3½ Triumph); 2, Few (3½ Triumph); 3, G. Crawley (3½ Triumph).  
Unlimited Class.—1, C. W. Jamieson (8-10 twin Jap); 2, Few (3½ Triumph); 3, G. Crawley (3½ Triumph).  
Touring Sidecar.—1, Allen (3½ Triumph); 2, G. Crawley (3½ Triumph); 3, Kell (3½ New Hudson).  
Unlimited Sidecar.—1, Jamieson (8-10 twin Jap); 2, Allen (3½ Triumph); 3, G. Crawley (3½ Triumph).

**North Staffs M.C.C.**

A flexibility hill-climb was held at Aston, by Stone, on the 1st ult. The hill was almost half a mile in length. The climb was timed electrically by a device belonging to Messrs. Ashton and Madeley, the joint trial secretaries—the rider breaking a thread at the start started the watch, and breaking a thread at the finish stopped the watch. Results: 1, R. H. Attwood (3½ Bradbury), 39½s. fast, 2m. 58½s. slow, gold medal; 2, G. Tagg (4½ Regal), 42s. fast, 2m. 42s. slow, silver medal. Fastest time, J. A. Prendergast (3½ Ivy), 29½s.

**Dublin and District M.C.C.**

The markings in the open sidecar competition held on the 31st ult. are as follows:

	Marks.
G. Roche (3½ Rover) ... ..	*100
T. E. Greene (3½ Rudge) ... ..	*100
S. Allan (3½ Rover) ... ..	98
J. D. Weir (7 Indian) ... ..	97
E. W. Armstrong (3½ Rudge) ... ..	95
R. A. Latchford (3½ Humber) ... ..	92
F. J. Walker (3½ Rudge) ... ..	70

\* Tie for trophy.

It will be remembered that Roche, Greene, and Armstrong secured full marks at the open controls, and the two former secured full marks at the secret controls as well, and, therefore, tie for the Indian trophy.

**Essex M.C.**

The results of the run to York and back have now been worked out and passed by the committee, and are given below. Of a total entry of forty-five there were forty-two starters, of whom thirty-six finished within schedule time, twenty-three gold medals being awarded, seven silver, and four bronze, while one award was left over until the next meeting.

Gold medals.—Motor cycles: G. T. Gray (3½ Rudge), W. Cooper (3½ Bradbury), A. A. Lilley (3½ Singer), F. Roberts (3½ Rudge), J. A. Campbell (3½ Rudge), W. E. Rootes (3½ Singer), P. D. Walker (3½ Rudge), A. E. Uffelman (6 Rex-Jap), N. C. Dear (2½ Douglas), L. G. Brown (3½ Triumph), H. J. Beal (3 N.S.U.), H. Karslake (3½ Rover), and A. H. Gold (3½ Ariel). Sidecars: A. T. Stanton (3½ Bradbury), B. A. Hill (7 Indian), E. Frasetti (7 Indian), D. S. Kapadia (8 Rex-Jap), W. H. Wells (7 Indian), C. E. Mitchell (6 Bat-Jap), A. J. Sproston (3½ Rover), and W. C. Hemy (3½ Service). Cyclecars: D. S. Parsons (8 G.W.K.).

Silver medals.—Motor cycles: A. V. Deacock (6 N.L.G.). Sidecars: A. E. Brassington (6 Rex sidette), G. E. Revill (6 Zenith), W. K. Smith (7 Indian), and R. Lord (6 Rex sidette).

Bronze medals.—Motor cycle: J. H. Kerr (3½ N.S.U.). Sidecar: V. Garland (5 Clyno). Cyclecar: C. H. Corfield (6 C. and H.).

Special prizes.—Triumph Cup, G. T. Gray (3½ Rudge); best amateur sidecar, E. Frasetti (7 Indian); second motor cycle amateur, W. Cooper (3½ Bradbury); second sidecar amateur, held over.



A group of members of the Luton and South Bedfordshire M.C.C. on the occasion of one of their club runs.



## A DAY ON A W.D.

**D**URING a chat with Mr. Draper at the recent Coventry and Warwickshire hill-climb, he suggested that we should have a machine for a day's trial. Accordingly one day last week we took over a 3½ h.p. fixed gear model for a business trip in the Midlands. This sort of run tests a machine thoroughly, for though we encountered no really severe hills, yet the traffic conditions in large cities such as Birmingham and Coventry often necessitate a quick pick up on an up grade, and of this the W.D. proved itself fully capable. On our run over to Birmingham we had plenty of opportunities of testing the paces of the machine, and found that it would throttle down to a crawl and pick up quickly to a good speed. The engine had the silky feel of a well-balanced well-run-in engine, but had plenty of power. This silkiness is probably due, to a large extent, to the system of forced lubrication employed, which necessarily keeps the crankshaft and big ends floating on a film of oil.

This forced lubrication gives one a pleasant sense of freedom from trouble, as one has only to glance at the pressure-gauge and note that the needle indicates about 10 lbs. pressure to be assured that all is well. This was especially pleasant in the thick Birmingham traffic, as there was no need to bother about lubrication. In spite of the fact that the roads were up in many parts of the town, with the consequent congestion of traffic, the machine ran so slowly that only once did we have to dismount. Our readers will remember that the W.D. engines have a force-feed system through the crankshaft and up a copper

pipe in the connecting rod, and having leads to all the main bearings. Oil is forced through this system by a small "Albany" type pump, which may be bodily removed from the engine without letting out the oil from the sump. The pressure used may be varied by means of an accessible adjustment, but for touring purposes about 7 lbs. is found to be correct. The pressure on the gauge remains practically constant, for sufficient oil is pumped to maintain this pressure at quite low speeds, the surplus merely returning to the sump through a release valve.

We found the valve gear particularly quiet, and the crank case was as clean when we returned as at the start. Few people yet realise the advantages of forced lubrication, though in a short time it will probably become as universal on motor cycles as it is on cars, as its advantages are extremely numerous.



The W.D. connecting rod.

### LOST AND FOUND.

We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.



"STUDYING THE MAP."



## Some Consideration on Silencers.

IT is evident from the suggestions that appear from time to time in *The Motor Cycle*, that a great deal of misconception exists on the subject of silencers.

When the exhaust valve opens, the explosion of the charge is not completed, and the sound of the explosion and the hot gases travel down the exhaust pipe to the silencer. The sound of the explosion, however, travels at a much higher speed than the exhaust gases, and, unlike the latter, is not confined by the exhaust pipe and silencer until the exit is reached. The sound impinges on the walls of the exhaust pipe and silencer, and is transmitted through them to the air outside. Of course only a portion of

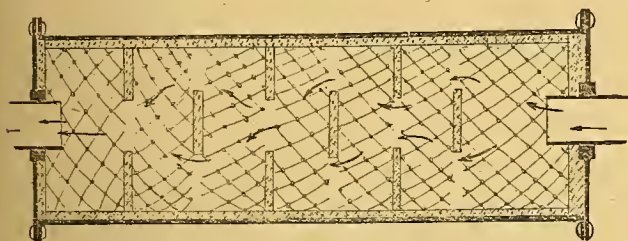


Fig. 1.

the original sound escapes in this way; some of it is absorbed by the metal walls, but most of it is reflected back to the interior and finally escapes to the outside through the same openings as the exhaust gases. These gases travelling at a fairly high velocity are also noise producers, and if allowed to escape through the cut-out, help in making the familiar "barking," or if broken up by passing through a number of small holes cause a more or less "spitting" sound. In the latter case, slight back-pressure is inevitably produced as the gases escape comparatively slowly.

### Two Kinds of Sound.

The conditions described are those which obtain in most standard makes of motor cycle, and the two kinds of sound can be clearly distinguished by listening carefully. The sound which comes through the silencer walls has a "chugging" nature, while that which leaves with the gases has a spitting bark.

It may be thought that the sound which passes through the silencer walls is quite insignificant, but such is by no means the case. If the ordinary silencer holes are stopped up and a long pipe is taken from the silencer barrel to the rear of the machine and there connected to one of the various special silencers on the market, it is found that the exhaust gases leave almost inaudibly, but the "chugging" sound passing through the exhaust pipe and silencer barrel is now very evident, as it is no longer masked by the usual "barking." The only way to eliminate this noise is to absorb it. The ordinary standard silencer and exhaust pipe consist of thin metal, and are ill adapted for keeping in sound. It is a matter of everyday knowledge that some kind of padding is necessary to protect any space from noise, a common instance being seen in the case of a telephone box. If it were practicable some soft substance, such as putty, would form a perfect exhaust box. Such a substance being out of the question, one of the solutions of the problem

is to use some lining, such as asbestos cloth, in a metal case, and further, to ensure that the entering sound gets reflected backwards and forwards before getting a chance of leaving the silencer. At each reflection some of the sound will be absorbed, and eventually the whole of it will be dissipated.

It is quite possible to arrange such a thing without at all obstructing the exhaust gases, and the author has made a sidecar silencer on this principle which is extremely quiet, and having no hole smaller than the diameter of the exhaust pipe is found to give no back pressure. This silencer has for the shell a piece of iron stove pipe, 2ft. long and 3in. in diameter, with end plates bolted on. It is lined inside with a double thickness of asbestos cloth which is kept in position by a series of loosely rolled coils of coarse iron wire netting. A series of asbestos baffles are arranged to absorb and reflect the sound, the whole arrangement being clearly shown in fig. 1.

A small amount of sound penetrates the walls of the long exhaust pipe, but no doubt even this could be absorbed by an outer covering of asbestos cloth.

### A Fallacy.

One of the most frequent suggestions for silencers is the adaptation of the "injector" principle, and diagrams such as fig. 2 are given in illustration. In all such cases the high velocity of sound is not taken into account. When the sound from the exhaust pipe reaches the bend, it will travel both left and right with a velocity of 1,090 feet per second, or 723 miles an hour. An air current of this speed would have to be set up at the point of the funnel in order to prevent sound escaping out of its mouth. The bicycle

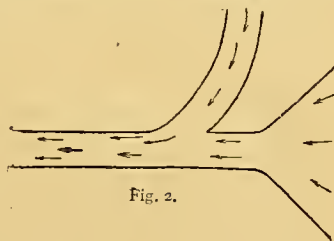


Fig. 2.

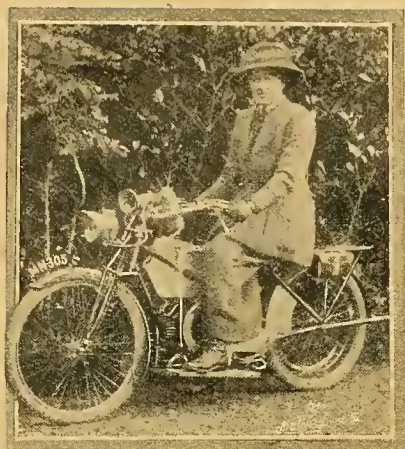
speed necessary to produce such an air current would be exceedingly high, and even when produced the roaring torrent of air would need a great deal of silencing on its own account, besides creating a big back pressure.

### Some Experiments with an Open Exhaust Pipe.

An open exhaust pipe does not of necessity mean lack of back pressure. On several occasions the writer has set his engine running comfortably on the stand with the exhaust pipe open, and then has placed a tall-form empty carbide tin over the pipe with the mouth of the exhaust a few inches away from the bottom of the tin. The tin was then gradually removed with remarkable effect on the engine; at one point, when the end of the pipe was some inches outside the carbide tin, the "back pressure" set up was so great that the engine was stopped. A factor of similar nature may be present in the standard type of silencer where the exhaust pipe enters through the side of a barrel. Different makers adopt different positions of entry for the gases, the most usual patterns being where they enter radially or tangentially, with the idea of avoiding reflection of the pressure wave back up the exhaust pipe and of imparting a spinning motion to the gases.

A. F. GIRVAN, B.Sc.





#### ANOTHER MANX LADY MOTOR CYCLIST.

Miss C. Gerard, of Glen Heien Hotel, the second lady motor cyclist in the Isle of Man. Her mount is a 1912 model two-speed open frame Douglas, which has proved a great success, having covered upwards of 2,000 miles without any trouble.

#### Trade Announcements.

Noble and Co., 115, Blackfriars Road, have opened premises expressly for the storage of motor cycles, which, in their opinion, will be of the greatest convenience for business men who ride to the city per motor cycle.

We have received particulars of a machine which is being marketed by the Cleveland Motor Cycle Co., Douglas Street, Middlesbrough. As it is made of everything of the best and is apparently a well-built machine, judging by the illustration, local readers will be interested to examine this machine at the address mentioned.

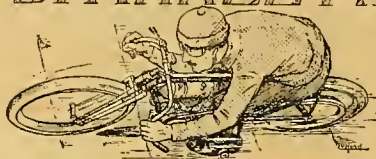
#### Spare Wheels for Cyclecars.

The Stepney Spare Motor Wheel Co., Ltd., have introduced a spare wheel specially made for the G.W.K. and other light cyclecars. Although the cyclecar is a light form of four-wheeled motor cycle, there is no reason why owners should not relieve themselves from the worrying annoyance of repairing air tubes while *en route*. The enterprise therefore of this firm of introducing a spare wheel so early for this machine is very commendable. The spare wheel in question is carried on the G.W.K. running board, slightly abaft the seating.

#### A Week in Waterproofs.

Several readers have written to ask for details of the waterproof outfit worn by our contributor during the Six Days' Trials. "The goloshes and the Flixxon cloth helmet were procured from a branch depot of Chas. Macintosh and Co., the well-known rubber providers. Good oilskins are procurable from several firms. Many motor cyclists imagine that the cheap, sticky yellow and black abominations sold by some outfitters are the only oilskins obtainable. Such should procure a catalogue from either John Barbour and Sons, South Shields, or Parker's, Lancaster. The outfit described in the article is genuinely waterproof, and less expensive than the average Paramatta suit, though possibly it is a shade more liable to tear."

## SPARKLETS



#### Tyre Successes.

At the Streatham and District M.C.C. hill-climb (Titsey), Hutchinson tyres gained no less than twelve firsts, and the makers point out that it is their proud boast that they have never constructed a special tyre for competition purposes.

#### Trade Notes from Manchester.

E. Woods, a well-known Manchester rider, has been appointed manager to the Manchester Motor Supply Co. at their new depot, 30, Deansgate. The firm has the sole agency for several different makes of motor cycles and cyclecars.

C. E. Kettle, trials hon. sec. of the Manchester M.C.C., informs us that he has severed his connection with Messrs. Lookers, Ltd., Hardman Street, Deansgate, and will shortly be opening show rooms, garage, and repair works in the Manchester district, specialising in motor cycles and cyclecars.

#### Catalogues Received.

To compile a complete parts list in the case of a firm which has made motor cycles since 1909 is rather a big order. One of the most complete price lists of motor cycle parts which we have ever seen emanates from the Hendee Manufacturing Co., 178, Great Portland Street, W. The book is carefully indexed so that no trouble should be occasioned in finding the price of any part of an Indian dating from 1909 to the present year. One has merely to turn up "oil tank" and

"hand oil pump," for example, and refer to page 58, when one finds all the details for the various parts under one heading, and one has merely to order by number. If the part be enamelled, the colour must be stated. Several of the more important parts are illustrated with thumb nail sketches and half-tone blocks. The book can be obtained from the Hendee Manufacturing Co., 178, Great Portland Street, W.

#### The Senspray Carburetter.

During a recent reliability trial a rider rode his Rudge machine, fitted with a Senspray carburetter, from Weston-super-Mare over Dartmoor to Plymouth, Torquay, Weymouth, Brighton, London, and Bristol, thence to Cardiff by train. He started from Cardiff with half a gallon in the tank, and purchased threequarters of a gallon at Taunton, one gallon at Plymouth and Weymouth, threequarters gallon at Frighton, and half gallon at London. The distance according to Cowey speedometer was 579 miles, and as there was over a pint of petrol left in the tank at Bristol the consumption works out at 132½ m.p.g.

#### Motor Cycle Exports.

The Premier Motor Co., Ltd., Aston Road, Birmingham, inform us that they are now exporting about twelve Rex-Jap machines per week to South Africa. The firm have just heard from Messrs. Gibson Bros., their Kimberley agents, that they are perfectly satisfied with the results of the sample machine imported. This South African firm enquired for particulars regarding the sole agency for Kimberley and Johannesburg, and were advised to have one machine out first to see whether it would suit the severe conditions of the Dominion. As the result of the behaviour of the sample machine they are now enquiring if the agency is still open.



#### 20,000 MILES IN FIVE MONTHS.

Harry Long, who recently completed a "Round the Coast" ride on a 4 h.p. two-speed Singer sidecar, covered 20,000 miles in five months. From many out of the way spots Long has been snapped by readers who have kindly sent us copies of the photographs.



# ONE WEEK-END'S SUCCESSES ON "ZENITHS" FITTED WITH THE WORLD RENOWNED PATENT GRADUA GEAR.

(Infinitely variable.)

## Streatham and District M.C.C. Open Hill Climb, Sept. 7th.

Class 4.	A. R. Hunter ..	5 h.p. Zenith	1st on formula, 2nd on time.
Class 7.	F. W. Barnes ..	8 h.p. "	1st.
Class 8.	F. W. Barnes ..	" "	1st on time, 1st on formula.
"	G. F. Hunter ..	" "	2nd on time, 2nd on formula.
"	G. Griffiths ..	" "	3rd on time, 3rd on formula.
Class 10.	F. W. Barnes ..	2½ h.p. "	1st on formula.
"	G. Griffiths ..	8 h.p. "	1st on time.

Fastest time of the day, F. W. Barnes.

Winner outright of Greig Cup, F. W. Barnes. Three consecutive years.

## Cardiff Motor Club Hill Climb, Sept. 7th.

Class 1.	E. Chapman ..	6 h.p. Zenith	2nd and fastest time of day.
Class 3.	E. Chapman ..	" "	1st.

## Sheffield and Hallamshire M.C. v. Leeds M.C. Speed Trials, Sept. 7th.

Class 5.	J. Haslam ..	6 h.p. Zenith	1st
"	F. R. Roberts ..	" "	2nd.
Class 6.	F. R. Roberts ..	" "	1st.
"	J. Haslam ..	" "	2nd.
Class 8.	J. Haslam ..	" "	2nd.

Fastest time of the day, F. R. Roberts. 6 h.p. Zenith.

## Leven and District M.C.C. Open Hill Climb, Scotland.

Class 1.	A. H. Alexander ..	3½ h.p. Zenith	1st.
Class 2.	A. H. Alexander ..	" "	1st on formula
"	A. H. Alexander ..	" "	1st on time.
Class 4.	A. H. Alexander ..	" "	1st.

**ZENITH MOTORS, LTD.,** { Phone—No. 4. } **WEYBRIDGE.**  
 { Telegrams—"ZENITH." }

Contractors to War Office.

Spares stocked in London by ROBERTSON'S, 157, Gt. Portland St., W.

## A.C.U. SIX DAYS' TRIAL.

# PALMER TYRES

Fitted to Mr. F. Smith's 5-6 h.p. Clyno and Sidecar  
 WON THE "MOTOR CYCLING" CUP for

## BEST TYRE PERFORMANCE.

6 out of 7 Riders of Palmer Tyres gained Gold Medals. The 7th failed through mechanical trouble.

Our booklet tells you why Palmer Tyres are so wonderfully durable and safe. Write for a copy to-day.

**THE PALMER TYRE, LTD.,**

119, 121, 123, Shaftesbury Avenue, London, W.C.

Motor Cycle Tyre Dept.: 103, Gt. John St., Clerkenwell, E.C.

In answering these advertisements it is desirable to mention "The Motor Cycle."

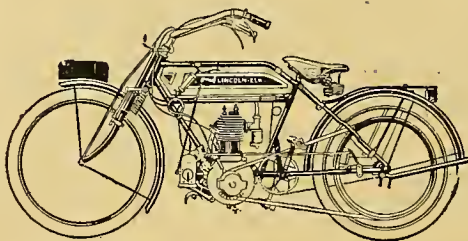


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Manufactured Completely by  
**J. KIRBY,**  
 Broadgate, LINCOLN.

Telephone: 2Y5.      Telegrams: "ELK," LINCOLN.

Wholesale Agents for Scotland:  
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 56 & 58, Great Clyde Street, Glasgow.



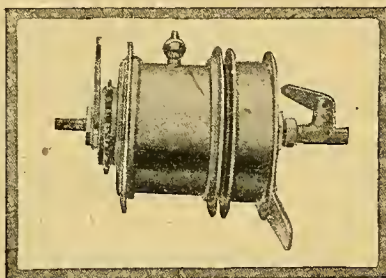
3½ h.p., £34 - 0 - 0.  
 3 h.p., £30 - 10 - 0.  
 2½ h.p., £28 - 10 - 0.

All Models fitted with Palmer Tyres, Bosch Magneto, and Footrests. "Druid" Spring Forks.

Sole London Agent:  
**REY,**  
 Heath Street Motor Works,  
 5, Heath Street,  
 Hampstead, London, N.W.

## THE THORNTON 2-SPEED AND FREE ENGINE HUB.

Combining—  
 STRENGTH,  
 SIMPLICITY,  
 AND  
 EFFICIENCY  
 Price £3.



Particulars from  
 THE LEICESTER GEAR CO., THORNTON LANE, LEICESTER.

## The Guest Decompressor.

PATENT.

THE little article illustrated herewith makes motor cycle starting simplicity itself, and not an athletic feat as heretofore.

EASY TO START THE ENGINE, AND GOES DEAD SLOW IF REQUIRED.  
 SIMPLE TO FIT.  
 SUITS ALL STANDARD MACHINES.  
 FITS INTO EXHAUST CAP.  
 NOTHING TO GET OUT OF ORDER.

Price **12/6** each.  
 Postage 4d.

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at end of Season.

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**HAZLEWOOD.**  
**A.S.L.**  
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ACCESSORIES.

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THE  
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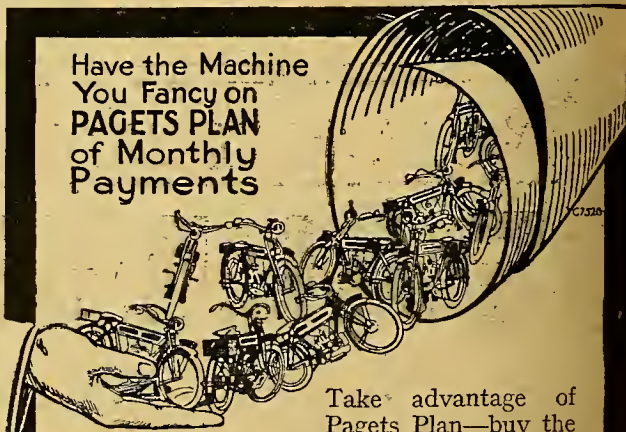
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you prefer—and use it whilst paying for  
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Could you imagine a more commonsense,  
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 Then purchase your new machine on Pagets  
 Plan, and secure

**EARLY DELIVERY OF BEST-KNOWN MAKES.**

Let us post you full details.

**PAGETS LIMITED, 10 & 11, Jermyn St., London, S.W.**

# PAGETS PLAN



# MOTOR CYCLES BY EASY PAYMENTS

Whiteleys can supply ANY MAKE OF  
MOTOR CYCLE or CYCLECAR on the  
EASIEST OF EASY TERMS.

Interest Charge from 2 per cent.  
(Carriage Paid.)

## A TEN POUND NOTE

secures delivery, and you can pay the balance  
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WHY WAIT 6 WEEKS WHEN WE HAVE IN STOCK

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Bradburys  
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New Hudsons  
A.C. Sociables  
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Bats  
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Clynos  
P. & M.'s.  
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Special agents for Rollo cars.

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## End of Season CLEARANCE SALE.

We have a quantity of machines left,  
comprising the following makes:—

Scott,  
P. & M.,  
Matchless,  
Douglas,  
Clyno,  
Lincoln Elk,  
G.W.K. & A.C.

Rex-Jap,  
Bradbury,  
Bat-Jap,  
Premier,  
Motosacoche,  
Morgans,  
Rudge, etc.,

and we shall be pleased for you to enquire  
our prices for same. You can have on

Cash, Deferred, or Exchange Terms.

*Lists of new and second-hand Accessories and  
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Morecambe Covers 10/6, Studded 13/6

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The standard Handbook of the Motor Cycle.  
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FOR  
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In the Mersey Motor Club's  
200 miles Reliability Trial,  
Mr. V. E. Horsman was  
awarded Gold Medal for  
Non-Stop run: also secured

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He was using "Sternol" Standard Quality Oil on  
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*Write for particulars and prices.*

STERNOL 56, Royal London House,  
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## JUST THE TIME OF YEAR

when protection is required  
against wet and mud.

Extra mudguards may keep  
the rider clean, but they  
certainly do not prevent water  
carrying grit from working  
havo in unprotected hubs  
and other bearings.

HUB LUBRICANT is recognised as an ideal  
lubricant for ball bearings. Its special value  
however, is in the protection that it affords  
against the ingress of wet and mud.

The Judges in their Report  
on the 1912 A.C.U. Six Days'  
Trial emphasize the need for  
adequate lubrication of the  
hubs and other ball bearings  
to protect them from the disas-  
trous effects of wet and grit.

1912 Lists detail other uses of Hub Lubricant—

PRICE'S PATENT CANDLE CO. LTD.,  
BATTERSEA, LONDON, S.W.

Hub Lubricant—post free—½lb. tins, 9d. : 1lb. tins, 1/-



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

ADVERTISEMENTS in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

### SECTION II.

York and Lancashire.

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

### SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

### SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

### SECTION X.

Scotland.

### SECTION XI.

Ireland and Isle of Man.

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5983.	3 1/2 h.p. 1911 2-speed	BRADBURY	£37 10
5984.	3 1/2 h.p. 1911	PEUGEOT	£22 10
5986.	6 h.p. 1911 2-speed	CLYNO	£35 0
5987.	6 h.p. 1911 2-sp.	CLYNO and s'car	£50 0
5989.	3 1/2 h.p. 1912	ZENITH-GRADUA	£45 0
5993.	3 1/2 h.p. 1912	SCOTT and sidcar	£66 0
5994.	3 1/2 h.p. 1912 F.E. B.S.A.		£42 10
	3 1/2 h.p. 1912 F.E. RUDGE		£42 10
	3 1/2 h.p. 1912 2-speed	ALLDAYS	£42 10
5953.	3 1/2 h.p. 1912 2-speed	HUMBER	£45 0
5957.	3 1/2 h.p. 1912 2-speed	BRADBURY, chain drive	£47 10
5961.	3 1/2 h.p. 1911 Standard	TRIUMPH	£35 0
5968.	8 h.p. 1912 2-sp.	BAT, chain drive	£62 10
5975.	3 1/2 h.p. 1912 Free-eng.	BRADBURY and sidcar	£42 0
5977.	3 1/2 h.p. 1912 3-sp.	QUADRANT	£42 10
5979.	5 h.p. 1910	REX DE LUXE and sc.	£40 0
5980.	5-6 h.p. 1911 4-cyl.	F.N.	£28 0
5981.	5-6 h.p. 1912 A.C. Sociable		£85 0
5930.	2 1/2 h.p.	KERRY	£8 0
5931.	5 h.p. 1909 2-speed twin	REX DE LUXE	£30 0
5934.	3 1/2 h.p. 1909	TRIUMPH, Roc 2-sp.	30 Gns
5944.	3 1/2 h.p. 1911	SCOTT and sidcar	£42 10
5947.	2 1/2 h.p. 1909	DOUGLAS	£20 0
5882.	2 1/2 h.p. 1910	ENFIELD	£20 0
5883.	3 1/2 h.p. 1911 Free-engine	PREMIER	£35 0
5901.	5 h.p. 1911 Cone Clutch	REX	£32 10
5904.	6 h.p. new 1912 Speed King	REX	£40 0
5908.	3 1/2 h.p. 1910	CENTAUR	£18 10
5910.	3 1/2 h.p.	GHATER-LEA-J.A.P.	£17 10
5875.	6 h.p. 1912	ZENITH and Millford sidcar	£65 0
5880.	5-6 h.p. 1911 2-sp. 4-cyl.	F.N. and sc.	£37 10
5861.	7 h.p.	BAT-J.A.P.	£25 0
5850.	4 1/2 h.p. 1908 4-cyl.	F.N.	£18 0
5840.	3 1/2 h.p. 1912	BRADBURY, Sturmev-Archer gear	£50 0
5834.	5 h.p. 1911 Tourist	REX	£30 0
5812.	2 1/2 h.p. 1911	MOTOSACOCHE	£25 0
5809.	2 1/2 h.p. 1911 T.T.	J.A.P.	£29 0
5799.	3 1/2 h.p. 1911 T.T.	BRADBURY	£30 0
5788.	3 1/2 h.p. 1912 2-speed	HUMBER	£45 0
5786.	2 1/2 h.p. 1912 3-sp.	NEW HUDSON	£40 0
5776.	5 h.p. 1911	Twice REX DE LUXE	£35 0
5767.	3 1/2 h.p. 1912 Free-eng.	ROVER	£45 0
5742.	3 1/2 h.p. 1910 T.T.	TRIUMPH	£32 10
5732.	2 1/2 h.p. 1912 2-sp.	ROYAL ENFIELD	£45 0
5621.	2 1/2 h.p. 1912 3-sp.	HUMBER, T.T. model	£39 0
5606.	5-6 h.p. 1908 2-speed	F.N.	£25 0
5600.	2 1/2 h.p.	GRIFFON	£15 0
5596.	3 1/2 h.p. 1910	KERRY-ABINGDON	£32 10
5559.	3 1/2 h.p. 1908	TRIUMPH	£26 0
5543.	2 1/2 h.p. 1911 3-sp.	Lady's HOBART	£35 0
5504.	3 1/2 h.p. 1910	PREMIER, free eng.	£24 0
5441.	3 1/2 h.p. 1911 Standard	BRADBURY	£35 0
5420.	2 1/2 h.p. 1911	ROYAL ENFIELD, 2-s.	£37 10
5333.	2 h.p. 1910	MOTO-REVE	£20 0
5332.	5-6 h.p. 1911 4-cyl.	F.N.	£33 10
5055.	3 1/2 h.p. 1911 L.M.C.	variable gear	£35 0
4903.	5 h.p. 1911 Tourist	REX	£27 10
4885.	1 1/2 h.p. 1910	MOTOSACOCHE	£18 10
3965.	2 h.p. 1909	MOTO-REVE	£17 10
3931.	5 h.p. 1910 Tourist	REX	£30 0

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Includes lower prices for later models of most famous makes and a selection of over 300 machines of New and Second-hand 1912 makes only slightly used, overhauled, fully repaired, and guaranteed.



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## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

PEUGEOT, 5-6 h.p., Bosch, P. and M. 2-speed, Rom 2 1/2 tyres, in excellent condition; £23.

FAFNIR, 3 h.p., N.S.U. 2-speed, B. and B., Druids, Shims mag., excellent condition; £21.—Thorne, Maitland St., Houghton-le-Street, Co. Durham. [5408]

SCOTTS, 1912, the ideal motor cycle, ready for immediate delivery; £65.—Walker, Fishburn, Ferryhill. [X4628]

P. and M., 1910, 3 1/2 h.p., 2-speed, fine order, £38; 4 h.p. 2-speed 1911 Quadrant like new, £33; 2 1/2 h.p. 1909 Douglas, new tyres, £17; 4 h.p. free engine Roc, fine order, £16; 2 1/2 h.p. J.A.P. accumulator machine, £5.—Walker's, Fishburn, Ferryhill. [X4629]

1912 2 1/2 h.p. Singer, good as new, plating and enamel unscratched; £32.—Howkins, Rocknurest, Hartlepool. [X4591]

TRIUMPH, 3 1/2 h.p., 1908 model, mag., in good condition; £22/10, or exchange with good push cycle and balance cash.—19, Victoria Place, Carlisle. [X4586]

1909 N.S.U., 4 h.p., mag., Whittle belt, in good condition, bargain, £20; also Montgomery flexible sidcar, £4/4.—Wm. Kerr, Edentown, Carlisle. [5416]

2 1/2 h.p. Rex Lightweight, mag., Amac, h.b.e., perfect condition, lamp, horn, tools, spares; £17; wanted, sidcar machine.—East View, Haughton, Darlington. [X4331]

RUDGE, 3 1/2 h.p., free engine, 1912 model, just out of crate, not been used, cannot take delivery; cost price £55; best offer secures.—A. Halsay, tobaccocon, English St., Carlisle. [X4585]

NEW Hudson, 2 1/2 h.p., T.T., overhead valve, J.A.P. 3-speed and free engine, very hot, done 200 miles; cost £54/12, first reasonable offer.—Thompson and Edwards, West Hartlepool. [X4626]

T.T. Rover, special competition model, record breaker, just delivered; £50.—Thompson and Edwards, West Hartlepool. [X4627]

MOTOSACOCHE, spring forks, Shamrock and Palmer, Whittle and round bolts, tubular carrier and stand, newly enamelled, perfect; £12, or offer.—Burton, 95, London Rd., Carlisle. [5453]

### SECTION II.

York and Lancashire.

END of Season.—To clear, at best offers, only 3 left. Humbers, the 1912 machine.

2 h.p. Lightweight.

2 1/2 h.p. Twin, 3-speed.

3 1/2 h.p., 2-speed.

ALL above new and unsoiled, packed in crate.—Write at once, with offer, to Hy. Whitlock and Co., official Humber agents, Liverpool. Manager, S. W. Philpott. [5052]



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Largest Rex Dealers,

16, WESTGATE, HALIFAX.

Phone: 766. Telegrams: "Perfection."

## NEW REX BARGAINS.

Maker's Price. Our Price.

11-12 3 1/2 h.p. Tourist	£45 3	34 guineas.
11-12 3 1/2 h.p. 2-speed de Luxe	£59 17	46 guineas.
11-12 5 h.p. 2-speed Twin de Luxe; special price	51 Gns	
12 2 1/2 h.p. 2-speed Rex Junior de Luxe	£45 0	
12 4 h.p. Tourist, 8 1/2 bore x 95 stroke	£46 0	
12 4 h.p. 2-speed de Luxe handle starting	£56 0	
12 6 h.p. 2-speed Twin de Luxe	£62 10	

SOLD UNDER MAKER'S GUARANTEE.

## SECOND-HAND REXES.

EX, 1912, 4 h.p., tourist, nearly new	£36 10
EX, 1912, 2-speed, Junior de Luxe, 100 miles	£32 10
EX, 3 1/2 h.p., 1909, Tourist, very smart	£23 10
EX, 1912, 4 h.p., 2-speed, de Luxe	£49 10
EX, 5 1/2 h.p., twin, spring forks	£16 10
EX, 1912, 4 h.p., Tourist, done 200 miles only	£30 0
EX, 3 1/2 h.p. magneto, free engine, 1909 model	£26 10
EX, 3 1/2 h.p. magneto, spring forks	£19 19
EX, 2 1/2 h.p. magneto, lightweight, h.b. control	£16 10
EX, 1910, 3 1/2 h.p., plate clutch model	£32 10
EX, 1910, 5-6 h.p., twin, very fast	£29 10
EX, 1911, 3 1/2 h.p., 1912 magneto, shop-soiled	32 Gns
EX, 5 1/2 h.p., light and low, h.b. control	£14 10

# LIBERAL EXCHANGES

## SIDECAR COMBINATIONS.

DE LUXE, 6 h.p., chain drive	£70 0
DE LUXE (new), 4 h.p., 1912, and new sidecar	£61 0
U., 3 1/2 h.p., 2-speed, and sidecar	£25 10
DE LUXE, new 3 1/2 h.p., 1911, 2 speeds, and new sidecar, great bargain	49 Gns.
DIAN, 1911 Twin, clutch, new sidecar	£44 10
DE LUXE, 1911-12, new £10 10s. sidecar	£63 10

## MISCELLANEOUS MACHINES.

TRUMPH, 1910, clutch, splendid	£35 0
UMBER, 1911, clutch model; cost £55	£42 0
UMBER, 1912, 3 1/2 h.p., 2-speed, new	£47 10
EMIER, 3 1/2 h.p. magneto, spring forks	£25 0
U., 4-cylinder, 1911 late model	£29 10
VAL ENFIELD, twin lightweight, magneto	£19 10
IC, 5 h.p., 2 speeds, free engine	£29 10
ATOINE, 6 h.p., magneto, Saxon forks	£21 10
CYMPIC, 3 h.p., vertical engine	£10 0
RRY, 2 1/2 h.p., vertical engine	£9 10
DIAN, 1911, 5 h.p., twin clutch model	£39 10
TO-REVE, 1911, single, good	£23 10
4 h.p. Twin MINERVA, h.b. control, spring forks	£16 0
NOCH, 3 h.p., Chater-Lea frame	£8 10
RRY, 2 1/2 h.p., footboards	£8 10
CATER-LEA-MINERVA, 2 1/2 h.p., Nala 2-speed, spring forks, Model de Course tyres	£16 10
ECLESIOR, 3 1/2 h.p., cheap and good	£12 10
GBE, 3 1/2 h.p., vertical engine, h.b. control	£9 10
3 p. REX and 2 1/2 h.p. KERRY, want attention, each £3 5	
WITE & POPPE, 3 1/2 h.p., magneto, spring frame	£16 10

Easy Payments quoted on any machine.

## 1912 SIDECARS.

Illustrated List on application.

exchange," with Continental motor cycle tyre	£5 5 0
"de Luxe," with best tyre, apron, footmat	£6 6 0
"de Luxe" with reversible child's seat	£7 7 0
"de Luxe," with best coach-built body	£7 12 0
Improved quick-detachable joints, cranked extra strong axle and spindle, tip-up body, and caged ball race-tail models. Prompt delivery to suit Rexes, Triumphs, M.U.'s, Indians, and any other make.	

Discount to trade. Exchanges entertained.

## MOTOR BICYCLES FOR SALE.

SCOTT, 1911, overhauled at makers and in perfect condition, new spare tube, spare links, punctureproof band, lamp horn, tools, etc.; any examination: £44.—30, Edmund St., Bradford. [5565]

EXCEPTIONAL Offer.—1912 Rex, 4 h.p., with new Goodrich tyre, X1 all 50/- saddle, cyclometer, lamp, horn, mirror; cost £52 recently, accept £42.—Walker, Wales, Sheffield. [X4312]

LATE 1910 Rex. new Dunlop back, new Dunlop in. belt, fast machine, take sidecar, had little use; £32; would exchange good 2-speed lightweight Douglas, or Enfield preferred; trial.—Smith, Hall Green, Upper Holland, Wigan. [5593]

BRAND New 1912 Free Engine James, £47, bargain, usual £55/15; nearly new Red Indian, £35; 3 1/2 h.p. Rex-Jap, a beauty, £25; S.H. sidecar, £4; 3 special torpedio wicker sidecars, usual 8 gu., to clear £26/10; plain black sidecars, £4/10, to clear.—Anderson, Gorsehill, Stretford, Manchester. [X4503]

THE Following Latest 1912 Models (new), to be cleared at bargain prices: 3-speed Rover, 3-speed Colonial New Hudson, 2-speed Bradbury, clutch 4 h.p. Rex-Jap, standard Kerry-Abingdon, 2 clutch Kerry-Abingdons.—Apply immediately, Northern Depot, Ltd., Everything Motorish, Lece St., Liverpool. [X4529]

GREAT Sale 2nd-hand Motor Bikes, must be sold.—2 1/2 h.p. J.A.P., £8/10; 2 1/2 h.p. Rex, mag., £12; 3 1/2 h.p. Triumph, mag., £17; 2 h.p. Moto-kete, free engine, 1910, £14/10; 3 1/2 h.p. 4-cyl. F.N., with 2-speed gear, £18/18; 1910 Triumph, new condition, £26; 1909 P. and M., 3 1/2 h.p., with 2-speed and sidecar, new condition, £36; 1910 Douglas, £26; 1910 Rex, with 2-speed gear, £20; 1912 Rex and Sidecar, practically new, £50.—Motor Cycle Exchange, 160, Young St., Sheffield. [0100]

## SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

NEW Rudge Multi, with free engine; £60, list.—Marston's, Grange Rd., Birkenhead. [X4494]

NEW Free Engine Rover; £55, list price.—Marston's, Grange Rd., Birkenhead. [X4495]

NEW Standard Triumph; £48/15, list price.—Marston's, 97, Grange Rd., Birkenhead. [X4496]

NEW 8 h.p. Zenith-Gradua; list price £72/9.—Marston's, Grange Rd., Birkenhead. [X4497]

NEW Clyno and Sidecar; list price £85.—Marston, Grange Rd., Birkenhead. [X4498]

HUMBER 2 1/2 h.p. Twin, with 3-speed, almost new; will take £38 for quick sale. We are open to cash offers for above, or will consider exchanges at reasonable prices.—H. J. Marston, 97, Grange Rd., Birkenhead. [X4499]

SCOTT, new 1912 model, in stock, with special X1 all saddle; £65.—Moss, Wem. [X4504]

PHELON and Moore, new 1912 standard touring model, just arrived from works.—Moss, Wem. [X4505]

2 1/2 h.p. Douglas, splendid condition, tyres and belt good as new; £25.—G. Pettit, Pied Bull, Chester. [5363]

TRUMPH, 1908, new tyres, cylinder, and belt; £22.—Apply, Stephenson, Rectory, Cheddle, Cheshire. [5460]

3 1/2 h.p. Minerva, reliable, fast, 95; sidecar complete, £50/-; lamp, tyre, cheap.—Isen, flemaker, Bloxwich. [X4458]

1910 Humber, 2-speed, free engine, perfect, powerful. Bosch, B. and B.; £35.—Freeborough, 77, Macklin St., Derby. [5588]

DOUGLAS, K., 1912, new May, special tyre, perfect order, as new; cash offers.—Griffiths, chemist, Kildale, grove, Staffs. [X3896]

RUDGE, 1912, T.T., large tank, all accessories, speedy, reliable, guaranteed; £36/10.—Bishop, Brynham, Wednesfield. [X4408]

TRUMPH, 1907, sound condition, any trial; £18 for quick sale.—Lloyd, The Central, Church-street, Salop. [X4492]

1911 2 1/2 h.p. Enfield, chain drive, beautiful condition, little used; sacrifice £27.—R. Else, Lea-wood, Matlock. [X4488]

PREMIER, 2 1/2 h.p., 3-speed, done 1,200, perfect, powerful, unscratched; great bargain, £33.—Glennurquhart, Ludlow. [5522]

REX, 3 1/2 h.p., fast, reliable, good tyres, new belt, engine overhauled by makers month ago; £20.—Palace, Winstford. [X4334]

NEW Hudson Motor Cycle, 3-speed, 2 1/2 h.p., latest model, new; special price to clear.—Hawley Garner, Ltd., Cheapside, Halifax. [5368]

BAT-J.A.P., 6 h.p., just overhauled by makers, Jones speedometer, Lucas Lamp; £40.—Lester, 274, Dudley St., Wolverhampton. [X4491]

1910 F.E. Triumph, new engine and clutch, spares, including tubes, belt, and accessories; £34.—J. Vernon and Sons, Wolverhampton. [X4607]

5 h.p. Twin Sarcola, mag., Binks 1912 carburettor, splendid going order, good number; £21; or with sidecar £25.—Plant, 86, Otter St., Derby. [X4490]

# REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.  
Tele.: "Rey, Hampstead." Tel.: 2678, P.O., Hampstead.

Terms: Cash, Exchange, or Extended Payments.

## SALVAGE STOCK

only a few left, for CASH ONLY.  
A few Brand New 1912 Machines, slightly soiled in recent fire, to be offered at great reduction, as below:  
SINGER, 4 h.p., 2-speed, 1912 ..... £54 0  
BRADBURY, free engine, 1912 ..... £43 0  
RUDGE, T.T. Roadster, 1912 ..... £39 10  
BRADBURY, T.T., 1912 ..... £39 0  
RUDGE, Multi-speed, 1912 ..... £52 0

## IMMEDIATE DELIVERY

OF 1912 MACHINES AND IN STOCK TIME OF GOING TO PRESS:

BRADBURY, Standard, T.T., and F.E.	£73 0
BAT, 5-6 h.p., chain drive, 2-speed	£75 0
BAT, 7-8 h.p., 2-speed, chain drive	275 0
MATCHLESS, 8 h.p., 2-speed, No. 5	67 Gns.
MATCHLESS, 8 h.p., 2-speed, No. 7	70 Gns.
CLYNOS, 5-6 h.p., 2-speed, chain drive	65 Gns.
ZENITHS, 3 1/2 h.p.	53 Gns.
ZENITHS, 6 h.p.	67 Gns.
ZENITHS, 8 h.p.	69 Gns.
F.E. TRIUMPHS	£55 0
T.T. RUDGES	£48 15
F.E. RUDGES	£55 0
Multi RUDGES	£60 0
RUDGE, 2-speed	£55 0
BRADBURYs, all models, from	£48 0
SINGERS, 4 h.p., 2 speeds	£65 0
DOUGLAS, all models including K and L	£52 10
HUMBERS, 3 1/2 h.p., 2-speed	£65 0
SCOTT, 2-speed	£65 0
P. & M., Colonial Model	£65 0
P. & M., 2-speed	
Standard A.C.'s for Immediate Delivery	£87 10
MORGAN Runabout	85 Gns.
G. & N. Runabout, immediate delivery	95 Gns.

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES.

LIBERAL DISCOUNTS ALLOWED.

## SECOND-HAND

228. F.N., 4-cylinder, 5-6 h.p.	1911
225. F.N., 4-cylinder, 5-6 h.p.	1910
226. F.N., 4-cylinder, 5-6 h.p., with clutch	1910
228. TRIUMPH, F.E. Model	1910
238. RUDGE, T.T. Roadster	1912
246. ZENITH, 8 h.p., and sidecar (Millford)	1911
237. TRIUMPH, T.T. Roadster	1911
237. REX, 6 h.p., clutch, speedometer and sidecar	1911
267. ZENITH, 6 h.p., with sidecar, as new	1912
245. MATCHLESS, 6 h.p., 2-speed, and sidecar	1911
220. REX, 3 1/2 h.p., good order	1910
239. BRADBURY, 3 1/2 h.p., as new	1912
230. HUMBER, 3 1/2 h.p., 2-speed, like new	1912
227. LINCOLN-ELK, 3 h.p., as new	1912
243. MATCHLESS, 6 h.p., 2-speed, nice order	1911
241. DOUGLAS, Model H, 2-speed, as new	1912
2230. F.N. Car, 10-14 h.p., bond and screen, accessories, as new	1912
2180. BAYARD, 8 h.p., 4-cylinder, 3 weeks old, quantity of spares	1912
2280. F.N. Car, 10-14 h.p., as new	1912

All Accessories included on S.H. at the price advertised.

## THE FAMOUS "REY" SIDECARS.



£6 5s. £5 5s.

Side-entrance Models, Wicker, £7. Coach-built, £9 10s.  
2 Elegant Cane Models, Side-entrance, £10 10s.  
All complete with Hutchinson or Michelin 26 x 2 1/2 in. tube and tyre, and quick detachable joints.

LIBERAL DISCOUNTS TO THE TRADE.

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

# REY

5, HEATH STREET, HAMPSTEAD.



## OUR REED CANE BODIES

have undoubtedly hit the mark.

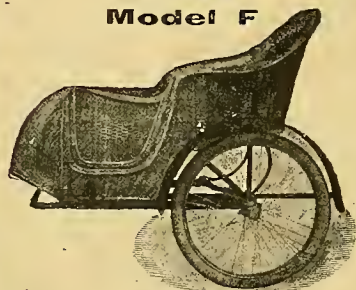
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wickerwork, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

### Model G



£7 10s.

### Model F

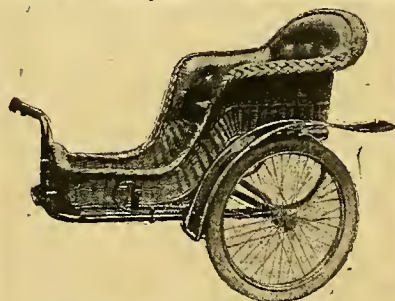


£8 8s.

Complete as above and carriage paid.

## SMART, LIGHT, AND STRONG.

Our Model de Luxe Sidecar is admitted to be the finest all-round value ever offered. Cranked axle, quick detachable joints, caged ball races, with extra stout wheel spindle. Guaranteed 12 months.



£6 - 5 - 0

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for List.

### MISCELLANEOUS BARGAINS.

New Rubber-studded Covers, 26 x 24	17/6
Water Circulating Pump	5/-
Small Tricar Radiator	5/-
Triumph pattern Handlebar, new	6/6
Mahon Clutch, 6ts Rex	35/-
Pair Druid Spring Forks, light model	£1
1912 B 104 padded Saddle, new	16/6
New Prested Accumulators	7/6
New Prested Trembler Coil	15/-
Lyett's "Top Tube" Toolbags	7/-
2 b.p. Stationary Engine, water-cooled	£4 10
Albion Clutch, 6ts Triumph	£7 6
New Screw-cutting Lathe, 4in. centres	£26 10

**Farrar's Motor Exchange**

19, 21, 23, 25, Hopwood Lane,

**HALIFAX** (Two minutes from G.P.O.)

Telephone 019.

## MOTOR BICYCLES FOR SALE.

**PREMIER** Motor Cycles, with or without 3-speed gear; special price to clear; full particulars on application.—Hanley Garage, Ltd., Obeside, Rugby. [X4493]

£9.—F.N., 2½-h.p., new B. and B. carburettor, adjustable pulley, b.b.c., accumulator, splendid running order, new pedals, coaster hub, new tank.—Mitchell, Wem. [X4493]

F.N., 1912, 5-6-h.p., 2-speed, free engine, perfect order, as new, and sidecar, spares, tyres and tubes unpunctured; trial: cost £75, cash offers.—Griffiths, chemist, Kidsgrove, Staffs. [X3895]

1910½ Triumph, Mahon clutch, unscratched, used pleasure only, any trial or examination, tyres good, new Dunlop belt; 29gns. lowest.—Rose Cottage, Newhall, Burton-on-Trent. [X4471]

1912 James, 2-speed model, chain drive, back wheel fitted Rom tyre, Canoelet sidecar, apron, and wind screen, all nearly new, perfect order, not done 500 miles; cost £79, accept £65; buying runabout.—Holden, Bridge St., Belper. [X4516]

**TRIUMPH**, 1909, 1912 Bosch, engine rebushed, new timing gear, piston, cylinder by Triumph Co., new back wheel and Dunlop heavy tyre unpunctured, new Dunlop belt, new spares; £32; expert inspection invited.—Hopkins, 33, Willowbank Rd., Birkenhead. [X4631]

**CLEARANCE** Prices, following brand new 1912 motor cycles: Zenith 248, Premier 3-speed 248, Enfield 2-speed 242, Calcotts 227; also 2nd-hand 1912 Triumph T.T. (500 miles) £45, 1911 T.T. £30, Bradbury and sidecar £27, twin Bat £24, Rex mag. £13.—Oswald Parker, Melbourne, Derby. [X4474]

**JAMES**, late 1911, 3½-h.p., T.T. model, recently overhauled by makers, C.A.P. carburettor, Biumfield pulley, Jones speedometer, Gaulois covers, Palmer belt, Whittle lamp, horn, spare valve, covers, tool kit complete, sidecar fittings; cost £55, sacrifice £38; must sell; expert advice invited.—Rev. Owen, Hope [X4265]

1912 Scott, brand new, £65, from stock; 1912 3½-h.p. N.S.U. twin, with 2 speeds and free engine, only ridden 250 miles, just like new, £38; 2 Rudge Multis, absolutely like new, £55 each; 1910 free engine Triumph, new back tyre, £38; 1911 3½-h.p. Rex Speed King, fine order, £28; 5-h.p. Vindee, twin, Bosch mag., b.b.c., bargain, £20; 1911 3½-h.p. free engine Singer, a beauty, £35; 1912 Clyno and sidecar, very little used, £75; Motosacoché, accumulator, good tyres, perfect order, Druid spring forks, £9; 3½-h.p. Rex, spring forks, accumulator, trembler, £10; 3½-h.p. V.S. Bosch mag., 2 speeds and free engine, a bargain, £14; exchanges are our speciality. Write at once.—The North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283. [X4597]

## SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

### BIRMINGHAM.

**CLEARANCE** of New and 2nd-hand Stock.

**DOUGLAS**, 1910, standard, 2½-h.p., good order; £22.—Colmore, 49, John Bright St., Birmingham. [X4543]

**DOUGLAS**, 1911, 2-speed, free engine, good running order, useful machine for business man; £35.—Colmore, 49, John Bright St., Birmingham. [X4544]

**DOUGLAS**, 1912, model H., 2½-h.p., 2-speed, only used a few times; £43.—Colmore, 49, John Bright St., Birmingham. [X4545]

**MOTOSACOCHE**, 1910, good order; very cheap, £18.—Colmore, 49, John Bright St., Birmingham. [X4546]

**PREMIER**, 1911, 2½-h.p., fixed engine, splendid condition, every working part, and also enamel and plating good as new; £24.—Colmore, 49, John Bright St., Birmingham. [X4547]

**SINGER**, 1911, 3½-h.p., overhauled, fast, powerful machine; £30.—Colmore, 49, John Bright St., Birmingham. [X4548]

**BRADBURY**, 1911, 3½-h.p.; £30.—Colmore, 49, John Bright St., Birmingham. [X4549]

**PREMIER**, 1912, 2½-h.p., complete with Armstrong 3-speed gear and free engine, fine condition, cost £46/10 recently, £35.—Colmore, 49, John Bright St., Birmingham. [X4550]

**ZENITH**, 1911, with Gradua gear, everything in good order; £35.—Colmore, 49, John Bright St., Birmingham. [X4551]

**MOTO-REVE**, 1910, overhauled, etc., good; for £16.—Colmore, 49, John Bright St., Birmingham. [X4552]

**ENFIELD** 1910 2½-h.p. Lightweight, very suitable for town riding; only £19.—Colmore, 49, John Bright St., Birmingham. [X4553]

**N.S.U.**, 1912, 3½-h.p., 2-speed, free engine; a bargain for £28.—Colmore, 49, John Bright St., Birmingham. [X4554]

**NEW Hudson**, 1912, 3½-h.p., 3-speed, £59/17 model, slightly soiled; only £48.—Colmore, 49, John Bright St., Birmingham. [X4555]

**LADY'S** Douglas, 1912, complete with 2-speed gear, free engine, perfect running order; £42.—Colmore, 49, John Bright St., Birmingham. [X4557]

**CLYNO**, 6hp., 2-speed, free engine, good order, £45; or complete with new Clyno coach-built sidecar, £58.—Colmore, 49, John Bright St., Birmingham. [X4555]

**HUMBER** 2½-h.p. Lightweight, 1911, in good order; £20.—Box No. 1,369, The Motor Cycle Offices, Coventry. [X4542]

## NOTHING EXTRA FOR

EASY PAYMENTS!!!

# 1/4 DOWN

Secures any of these NEW 1912 machines. Balance payable in Twelve Equal Monthly Payments.

6 h.p. GLYNO, 2 speeds	£68 6
3½ h.p. NEW HUDSON, 3 speeds	57 Gns.
2½ h.p. NEW HUDSON, 3 speeds	47 Gns.
6 or 8 h.p. REX-J.A.P., 2 speeds	List Prices
3½, 6, or 8 h.p. ZENITH, multi-speed	List Prices
3½ h.p. RUDEGE, standard model	£48 16
3½ h.p. RUDEGE, multi-speed	£60 0

All New. All guaranteed by makers.

## MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known makers Price 32/6 each.

Rigid forks, 7/6 extra, Druid forks, 45/- extra. Enamelled and plated in first-class style.

### ONE ONLY

1911½ 3½ h.p. PREMIER, Armstrong 3-speed gear, brand new; £46

### ONE ONLY

1912 8 h.p. MORGAN Runabout, 2-seater, ready for delivery, brand new; 85 Gns.

### SECOND-HAND BARGAINS.

1910 SCOTT, a beauty	£32 0
4-cylinder F.N., magneto, spring forks	£16 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, magneto, Druids, 26in. wheels	£16 0
3½ h.p. TRIUMPH, 1907, magneto	£24 0
4 h.p. 1911 QUADRANT, Roc, 2-speeds	£30 0
3½ h.p. 1910 L.M.C., Bosch, h.b. control	£22 0
3½ h.p. 1910 TRIUMPH, beautiful order	£23 0
3½ h.p. HUMBER, 2-speed model, Bosch	£39 0
1911 (Nov.) 3½ h.p. RUDEGE, free engine	£39 0
2 h.p. WOLF magneto	£15 0
1910 8 h.p. BAT, M.O.V., 2 speeds	£45 0
1911 Lady's HOBART, Armstrong 3-speed	£36 0
3½ h.p. Twin PREMIER, fine machine	£25 0

### SINGLE-CYLINDER REXES.

3½ h.p. 1908 Tourist, 1909 engine	£23 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

### TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£46 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0

### SIDECAR COMBINATIONS.

8 h.p. BAT, 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 REX and sidecar	£33 0
7-9 h.p. 2-speed REX and sidecar	£53 0

**£4 DOWN SECURES ANY OF THESE. BALANCE 25/- MONTH.**

2 h.p. WOLF, magneto, 26in. wheels, A.J.S. engine	£15 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, magneto, Druids	£16 0

**£5 DOWN SECURES ANY OF THESE. BALANCE 30/- MONTH.**

4-cylinder F.N., magneto, spring forks	£16 0
3 h.p. 1908 REX, Bosch magneto	£17 0
5 h.p. Twin REX, spring forks, h.b. control	£18 10
3½ h.p. WOLF Tricar, 2 speeds	£19 0
4½ h.p. HUMBER Tricar, 2 speeds, wheel steering	£19 0

### MISCELLANEOUS BARGAINS.

3½ h.p. Rex engine, two-stroke	£4 15
Powell's 2-speed, free-engine back wheel	£4 15
New Basket Body, upholstered green	£1 0
One ditto, upholstered red	£1 0
1912 B. and B. Carburettors, variable jets	28/6
1912 B. and B. Carburettors, single jet	27/6
1912 Senspray Carburettors	28/6
Camel rin. Rubber Belting	per foot 1/3
Trailer, 26in. wheels	25/-
Sidecar Aprons, green or red, with studs	4/11
New Lyett's Tubular Carriers	4/11
Bosch V Twin Magneto, 48 degrees	£3 13

**Farrar's Motor Exchange**

19, 21, 23, 25, Hopwood Lane,

**HALIFAX** (Two minutes from G.P.O.)

Telephone 919.



# MOTOR BICYCLES FOR SALE.

**SINGER.** early 1912. chitch model, just renovated at Siger Works, belt and tyre as new. lamp, horn, and accessories included; bargain, £42.—Apply, Cocker, 2, Addicton Hall Rd., King's Norton. [X4313]

**WANTED.** prompt offers for 1911 Service-Jap, 3½ h.p., Bosch, B. and B. Druids, Millennium hub, 2-speed, with Service sidecar, very low, tyres nearly new, pure valve, plugs, etc., fine condition throughout, very shabby.—Francis, 6, Bertha St., Treforest, Glam. [X4508]

## SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

1910 Triumph, £26.

1910 Twin Moto-Reve; £16.

3½ h.p. Bradbury, mag.; £16.

1½ h.p. Lightweight, with Motosacoche engine, free engine; £6.

**ALL** the above in perfect running order, and warranted in good condition; trials invited.

**WANTED.** 6-7 h.p. A.C. twin power unit, suitable cyclocar.—Kellow, Laverstock, Salisbury. [5525]

**DOUGLAS.** 1911. 2½ h.p., 2-speed and free engine; £30.—Layton's, Bicester, Oxon. [X4589]

**TRIUMPH.** 1912, free engine, new, £55; Motosacoche, 1911, 2½ h.p., £18.—Pitt, Fordingbridge. [X4621]

**BAT-J.A.P.**, 5½ h.p., twin, new June, 1911, perfect condition; £35.—Roberts, Park St., Windsor. [4428]

**CLEARANCE** Sale of new 1912 model motor cycles, only slightly shop-soiled; deferred payments accepted.

**SINGER.** 2½ h.p., 2-speed, control-wire covers; list £49/2/6, price £44.

**SINGER.** 3½ h.p., 3-speed; list £58/15, price £53.

**M.C.**, 3½ h.p., adjustable pulley; list £48, price £44.

**S.L.**, 3½ h.p. Precision engine, complete h.b.c.; list £52/10, price £42.

**WIFT.** 3½ h.p., free engine, var. gear, spring saddle pillar; list £56/5, price £48.

**MUNN** and Underwood, motor cycle agents and repairers, Junction Garage, 165, Above Bar, Southampton. [X4608]

1912 T.T. Triumph, done 1,800 miles, touch 65; bargain, £40.—R.-Coupe, 36, New Rd., Basingstoke. [5454]

**DOUGLAS.** 1911, in perfect order throughout, all accessories; £27/10; only requires trying.—Gibb, Gloucester. [5308]

**SPEED** 1912 Rover Motor Cycle, not ridden 300 miles, Rashmore lamp, horn, etc.; £55.—Scott and Co., Dunstable. [5405]

**ENTH.** 6 h.p.; 1912, excellent condition throughout; lowest, £56; with accessories.—Heybourn, Motors, Maidenhead. [5383]

**UMBER.** 1912, 2½ h.p. twin, practically new, perfect; first reasonable offer, cash or exchange.—Heyburn, Motors, Maidenhead. [5384]

**J.S.**, 1912, 2½ h.p., 2-speed, chain drive, splendid condition, go anywhere; £30; guaranteed.—Heyburn, Motors, Maidenhead. [5385]

**BRADBURY.** 1911, good condition, back tyre nearly new, Garner, P. and H. lamp, spare valve, tools; guns.—Hunt, Ascot. [5189]

**DELIVERIES** from stock Bradbury, chain-driven, 2-speed, £58/10; Douglas, model K, £50.—Gough's Motors, Gloucester. [X1789]

**DOUGLAS.** 1911, Model E., free engine, 2-speed gear, just thoroughly overhauled by makers; £35.—Vicar, at, Melksham, Wilts. [5518]

**DOUGLAS.** 1910, late, lamp, horn, good tyres, perfect condition; any trial; £23.—G. Holland, 360, Aterside, Chesham, Bucks. [5412]

**ADRIANT.** 3 h.p., accumulator, new belt, just overhauled, good condition, including tyres; £12.—amp, Farrington, Alton, Hants. [X4332]

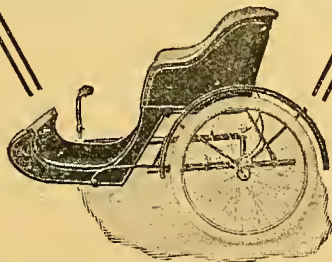
1912 Douglas, K model, kick start, 2-speed, free engine, perfect condition; £41, or nearest offer, 11, St. Nicholas House, Gloucester. [5549]

**TRIUMPH.** 1909, excellent condition, new back tyre and tubes, mag., just overhauled, all accessories; £5.—Apply, Lowe's Garage, Aldershot. [5569]

1½ h.p. Minerva, mag., B. and B., h.b.c., Whittle, ad-justable pulley, thorough good running order; £3, or nearest offer.—Webb, 26, Broad St., Swindon, Wts. [5362]

**UMBER.** 3½ h.p., 2-speed, new Whitsuntide, 1912, Kennshall back tyre, new belt; good opportunity bargain; £42/10.—S. J. Fair, 201, Cheltenham Rd., Cheltenham. [X4605]

1912 T.T. Triumph, only done about 1,000 miles, £41; 3½ h.p. Zenith, £30; 1911 P.E. Rudge, in good condition, £33.—H. E. Steel, Ltd., High St., Cheltenham. [X4442]



# A TIMELY TALK

to winter riders.

The weather is miserable, and if you appreciate real comfort awhile during the winter months, ensure it by the fitting of a P.M.C. Sidecar—with this Sidecar, you will be absolutely immune from side-slip, even upon greasy tram lines and stone sets—and the ease with which the machine can be manipulated in traffic without taking the feet off the foot-rests gives added comfort and confidence of control. The ease of attachment, light weight, and scientific construction, make the P.M.C. the most practical and efficient Sidecar on the market.

Price, Coachbuilt, £7 12 6

„ Wicker, £5 17 6

Our 1912 Catalogue, containing a complete range of Sidecars will be of interest to you. Copy sent post free on application.

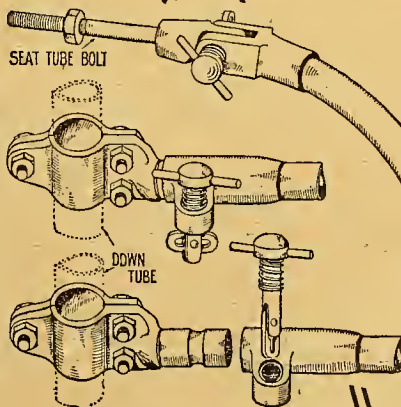
**THE PREMIER MOTOR**

**COMPANY, LTD.,**

**ASTON ROAD, BIRMINGHAM.**

Telegrams—"Primus, Birmingham."

Telephone—Central 430.



With our Quickfit Couplings any sidecar can be attached in sixty seconds, and detached in forty seconds. **SINGLE-HANDED. NO TOOLS REQUIRED.** SAFER than ordinary fittings—no nuts to come off or bolts to "strip". The strain on frame tubes is greatly reduced. Price 30/- the set of three couplings, to fit any make. 5/- allowed on old fittings (any make).

# MOTOR BICYCLES FOR SALE.

**CLEARANCE** Sale of Motor Cycles.—Triumphs, Douglas, Zenith, A.J.S., Enfields, etc., etc. Send for list.—Julian, 84, Broad St., Reading. [X4361]

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## MOTOR BICYCLES FOR SALE.

1912 2½h.p. 3-speed New Hudson-Jap, little used, speedometer, horn, lamp; cost £55/12, sell £42; without speedometer and lamp, £38; no offers.—Raynham, Cirencester. [5579]

1912 Free Engine Triumph, run 2,600 miles, speedometer, F.R.S. lamp, horn, etc., complete, as new; first cheque £47.—Box L8,752, The Motor Cycle Office, 20, Tudor St., E.C. [5543]

DOUGLAS 2½h.p., free engine, 2-speed, absolutely perfect; any examination; new extra heavy back Dunlop; cash £33/10.—Apply, Keith-Murray, Tynley Hall Estate Office, Winchfield, Hants. [5532]

DOUGLAS Model K Motor Cycles in stock, ready for immediate delivery; £50.—The Motor Cycle Depot, 43, Palmerston Rd., Boscombe. Tel.: 1248 Bournemouth. Telegrams: Alsford, Boscombe. [2119]

ROVERS.—Two latest 1912 models, must be cleared immediately at greatly reduced prices, one free engine type, single speed, and one 3-speed model; write immediately to secure.—Grosvenor Garage, Bournemouth. [X4272]

TRIUMPH, 1912 model, T.T. roadster, only run 1,600 miles, absolutely unscratched, and engine better than new; cost, complete with accessories, £54, accept £46.—Reynolds, The Lodge, Cosham, Hants. [X5716]

1911 3½h.p. Clutch Model Rex, new May, 1912, mileage 2,000, new rear Palmer cord, new Dunlop 1½ in. belt, with sidecar, Chater-Lea attachments, all in new condition; £40, or near.—Green, East Ilsley, Berks. [5535]

3½h.p. Precision, B.B., 26x2½ Dunlop back, and belt, 4 only run 500 miles, £35; Rex 3½h.p. engine, in Hummer frame, low, 26x2½ wheels, £14; Chater-Lea-Fafair, 3½h.p., low position, £10/10.—Palmer, Newent, Glos. [5400]

NEW Hudson-Jap, 2½h.p., 1912, 3 speeds, free engine, fast, perfect condition, with lamp, horn, speedometer, tools, done about 1,000 miles; £40, or nearest offer.—Yorke, 2, The Chalets, Upper St. Michael's Rd., Aldershot. [X4268]

1912 3½h.p. Peugeot, Drnids, B. and B. var. jet, Bosch mag., Kerry 2-speed and free engine clutch, handle starting, in excellent condition; £36.—Col. Sgt.-Maj. Adshead, Garrison Gymnasium, Blackdown, Hants. [5618]

FOR Sale, Hummer, 1912 2-speed motor bicycle, new 6 weeks ago, not done 400 miles, and fitted with lamp and horn, also Cowey speedometer; good reason for selling; price £42/10.—Apply, J. R. Walker, Oldbury Works, Tewkesbury. [4781]

INDIAN, 1912, 7½h.p., 2-speed, free engine, splendid condition throughout, had careful use, run 2,000 miles, Kempshall tyre back, Entelinson front lamp, generator, and horn, lot of spares; open to any examination; £65.—Morris Garage, Oxford. [X4569]

PREMIER, 1912, 3½h.p., 2-speed, free engine, with sidecar, excellent condition throughout, lamp, generator, and horn, perfect passenger combination, not run 2,000 miles; cost £65, accept £45.—Seen at Morris Garage, Oxford. [X4570]

SCOTT, 1912, 2-speed, free engine, only run 1,600 miles, perfect condition throughout, Palmer cord tyres; exceptional opportunity; £54, lowest.—Morris Garage, Oxford. [X4571]

TRIUMPHS, 1912, free engine models in stock; cash or easy payments.—Morris Garage, Oxford. [X4572]

MORRIS Garage, Oxford.—New showrooms, Queen St. Largest stock of new and 2nd-hand machines in the country; large stock of accessories and spare parts always carried. [X4573]

## SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

## TOTTENHAM

F.E. Triumph, £55; 3½h.p. 2-speed Humbers, £52/10; F.E. Bradbury, £54/10; 1911 F.E. Bradbury and F.E. Rudge, quite new, best offers; Motosacoche, £22; our own sidecars, £5/5, complete; Millford sidecars, £6/6; 12/12; Michelin tyres, 1912 stock. Write for list.—The Stamford Hill Motor Co., 128, High Rd., Tottenham. 'Phone: 1982. [X4457]

WALKER'S, Harwich.

BARGAINS.—New, but shop-soiled.

TRIUMPHS.—Latest 1912 clutch model; £50.

DOUGLAS.—Latest 1912 K models; £46.

DOUGLAS.—Latest 1912 G models; £37/10.

DOUGLAS, 1911, 2nd-hand, fixed engine; £26.

MOTO-REVE, 1911, as new, free engine, twin; £28.

REX, 1910, 2nd-hand, 6½h.p. twin; £24.

DON'T Miss the Above Guaranteed Bargains; write for details at once.—Walker's, Motors, Harwich. [5374]

ESTABLISHED 20 YEARS "IN THE HEART OF THE TRADE"



## COLMORE-DOUGLAS

You want success, quality, reliability; the best all-round results obtainable in a motor cycle; get at once a Douglas, a Colmore-Douglas, from the best Douglas agents, the Colmore Depot of Birmingham, Manchester, Leicester, and Liverpool.

Delivery is prompt and certain, machines are fresh and new, attention is careful and experienced.

We have supplied Douglas machines, Colmore-Douglas machines, to many of the most successful of the riders of the day, for instance:—

## MR. MACNAB,

who weighs 16 stone and stands six-foot-three, yet he wins hill-climbs on time against men half his size, upon his Colmore-Douglas.

Aug. 28. Surrey M.C. Climb .. Fastest and first on formula.

Aug. 3. Mersey C.C. Climb .. Fastest time on a lightweight.

## MR. BAILEY,

another Colmore-Douglas rider, has astonished the Frenchmen (and the Englishmen, too) by riding 246 miles at 47 miles an hour, on the road. The most wonderful long ride ever accomplished, and upon a Colmore-Douglas supplied by Colmore Depot.

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35, Colmore Row, Birmingham.  
18, Renshaw St., Liverpool.  
261, Deansgate, Manchester.  
62, High St., Leicester.  
45, John Bright St., Birmingham.

## MOTOR BICYCLES FOR SALE.

F.E. Triumph, new; must sell; what offers?—48, Walford Rd., Stoke Newington. [X456]

£15.—3½h.p. Minerva, Bosch mag., B. and B.—Collier 26, Compton Av., Brighton. [5491]

3 h.p. Rover, m.o.v., good running order; £8/15, or offer.—Speechley, 45 Church Rd., Acton. [550]

3½h.p. 1911 Triumph, perfect condition; cash £29/10 32 —91, Melbourne Rd., Eastbourne. [5601]

WRENCH'S, 344, Easton Rd.—Clearance of motor cycles; good selection; send for list. [551]

SPLENDID 2½h.p. Zedel-Griffon; £10; exchange higher power.—30, Eglinton Rd., Bow, E. [551]

DOUGLAS, G, 1912 new condition; any trial; £34.—Capel Curig, Nether St., North Finchley. [557]

J.A.P. Motor Cycle, 2½h.p., B.S.A. frame, a.i.o.v., good valve; £10.—31, Centurion Rd., Brighton.. [539]

TRIUMPH, 3½h.p., all accessories, running order £15.—7, Vale Terrace, King's Rd., Chelsea. [X458]

1912 Rudge Multi, new June 18th; accept £50.—Elliott, 15, Woodstock Rd., Bedford Park. [544]

WANDSWORTH.—F.N., latest 1912, 6½h.p., 4-yl. clutch model, as new; sacrifice £47/10.—Below

WANDSWORTH.—N.S.U., 5½h.p. twin, mag., speeds, free engine, very powerful, perfect £22/10.—Below.

WANDSWORTH.—F.N., 1909 lightweight, 1½h.p. mag., spring forks, var. gear, good order £12/19/6.—Below.

WANDSWORTH.—Moto-Reve 1911, 2½h.p., twin mag., Druids, grey finish, as new; £18/18.—Below.

WANDSWORTH.—Hammer, 1909½, mag., 2 speeds handle starting, Drnids; £28/10.—Below.

WANDSWORTH.—Rex, latest 1911, T.T., 6½h.p. twin, m.o.v., mag., fast, new condition; £32/10.—Below.

WANDSWORTH.—Indian, latest 1910, T.T., 5½h.p. twin, m.o.v., mag., very fast, perfect; £18/10.—Below.

WANDSWORTH.—V.S., 1910, genuine, 7-9h.p. mag., twin, 2 speeds, cream finish, perfect; £38/10.—Below.

WANDSWORTH.—N.S.U., 4½h.p., m.o.v., mag., speeds, free engine, runs well; sacrifice £19/18.—Below.

WANDSWORTH.—Rex, 3½h.p., Drnids, perfect £7/15; exchanges.—Wandsworth Motor Exchange Ebner St., Wandsworth Station. [X461]

TRIUMPH, clutch model, 1910½, good condition; see any time; £34.—Edge, 123, Holloway Rd., N. [558]

ZEDEL, 2½h.p., Brown and Barlow, h.b.c., Helleseu low; £9.—R. Hillman, High St., Cuckfield, Sussex [544]

3½h.p. Rex, new Peter-Union, horn, lamp, running order; £7/10.—620, High Rd., Leytonstone. [X461]

3½h.p. Moto-Reve, good order, tyres nearly new; £12 24 —Smith, Swanbourne, Browning Rd., Worthing. [546]

F.N., 5½h.p., 1910, in perfect order, no use for same having bought car; £25.—Allen, Elstead, Godalming. [X436]

ZENITH, 1911, 6½h.p., Lucas head light, horn, Whittall all accessories; £42.—235, Battersea Park Rd S.W. [553]

2½h.p. Minerva, m.o.v., Amac carburettor, Dunlop 4 tyres and belt; £8/10.—224, Wood St., Walthamstow. [X448]

DOUGLAS, 1911½, nearly new, new Palmers; bargain, £29/10.—Nash, 155, Goldhawk Rd. Shepherd's Bush. [558]

PREMIER, 1912, free engine model, nearly new; must sell—bargain, £36.—Seen, 155, Goldhawk Rd. Shepherd's Bush. [558]

ZENITHS, all models, immediate delivery guaranteed.—Wimbledon Motor Cycle Co., 1, York Rd., Wimbledon. [X459]

MATCHLESS-J.A.P., 1911, 6½h.p., £45; or with sidecar £50.—Holden, West Wickham, Beckenham Kent. [550]

3 h.p. Chater-Fafair, 1911 Amac, Helleseu, good order; £12, offers.—198, Eglinton Hill, Plinthead. [556]

DOUGLAS, late 1910, everything right, £23; exchange for Triumph.—Alma, 52, Streatham Hill London. [565]

MOTO-REVE, twin, mag., just overhauled, perfect fine engine; £12; trial.—Duke, -17, Jewin St. London. [554]

3 h.p. Quadrant, spring forks, h.b.c., Brown and Barlow, new tyres; £14.—M.M., 9, Palace Rd., Streatham Hill. [X426]

3½h.p. Minerva and Sidecar, tyres nearly new, must sell—new spares; £16.—R. Bridger, 58, Baker St. Brighton. [X388]

SINGER Moto Velo, 2½h.p., with accessories, good as new; £25 cash.—Apply, Rayner, 20, Windmill St. Gravesend. [436]



## MOTOR BICYCLES FOR SALE.

**R**UDGE Motor Cycle, brand new, 1912, taken for debt; take £40.—Seymour, 10, Mansfield Rd., Hampstead. [X4366]

**3**1/2 h.p. Bradbury, 1911; model, everything in new condition; £25; or near offer.—G. White, The Warren, Guildford. [X471]

**5** h.p. Rex, Bosch Kempshall, B.B., free, perfect; trial with sidecar; £22/10.—410, Rotherhithe St., Rotherhithe. [X5404]

**3**1/2 h.p. Zenith, 1911, perfect condition throughout, fast and reliable; £34.—John Mills, Faircroft, Hersham, Surrey. [X5604]

**3**1/2 h.p. Kerry-Abingdon, 1911, thoroughly overhauled, splendid running order; £29.—Edmonds, Station Rd., Chingford. [X4483]

**R**OVER, been thoroughly overhauled and renovated, like new, fast, good hill-climber; bargain, £25.—Edwards, Station Rd., Chingford. [X4484]

**19**11; Bradbury, Kempshall, horn, lamp, new belt; £28, or exchange higher power.—85, Lavender Grove, Dalston. [X5430]

**19**10 Standard Triumph, beautiful condition, Palmer o. rds.; £30.—Box L8.769, The Motor Cycle Office, 20, Tudor St., E.C. [X5647]

**8** h.p. Minerva, F.E., handle starting, too powerful, best offer, or exchange good 3 1/2 h.p.—Nix, Meadow View, Southend, Cufford. [X5403]

**Z**ENITH, 6 h.p., March, 1912, tools and spares, perfect; any trial; £55.—Snell, 35, Cottenham Park Rd., Wembley. [X5409]

**3**1/2 h.p. De Dion, 1911 B. and B. carburettor, Dunlops, good condition; £10.—Haydon, 175, Wanstead Park Rd., Ilford. [X5387]

**19**12 3 1/2 h.p. Rudge Multi, and 3 1/2 h.p. Rudge standard, free engine, quite new; what offers?—Philpott, Motors, Kamsgate. [X5357]

**T**RIUMPH, 1908, quarter down and 12 equal payments.—Donald Cheers, Hericdene, Waldegrave Park, Twickenham. [X5366]

**19**12 Calcott, 2 1/2 h.p., £23; Bat, 2 1/2 h.p., splendid condition, £6/10; Druid light forks, 15/-.—F. Clayton, Wallington. [X5478]

**19**12 2 1/2 h.p. Premier, free engine, 3 speeds, 200 miles, as new; £39, no offers; seen any time.—Turner, 4, Alfred Rd., Acton. [X5451]

**2** h.p. Longhurst, Amac h.b.c., Chater-Lea frame, low, 26 wheels, new tyres; £6.—87, Bexhill Rd., Crayford, Brackley, S.E. [X5551]

**E**NFIELD, 2 1/2 h.p., 1911, 2-speed, new condition, lamp, horn; £32; appointment.—Clark, 102, Central St., St. Luke's, E.C. [X5354]

**R**UDGE T.T. Roadster, 1912 brand new, with accessories; £39, great bargain.—Green, Walside, Holder's Green Rd., N.W. [X4365]

**3** h.p. Hobart, h.b.c., Amac carb., low, tyres good, in good running order; £12/15.—Stern, Cintra, Cumberland Rd., Bromley, Kent. [X5378]

**3** h.p. Peugeot, Truffault works, mag., new saddle, fast and powerful; lowest £19/19.—No. 1,357, The Motor Cycle Office, Coventry. [X4321]

**D**OUGLAS, late 1911, excellent condition, numerous spares, including new belt, lamp, horn; £26.—Hbsfleet, Ashley Rd., Epsom. [X5398]

**T**RIUMPH, 1909, complete, with spares, just paid £10 for thorough overhaul; bargain, £28; any examination.—53, Highgate Hill, N. [X5560]

**9**08 Triumph, perfect condition and running order, recently overhauled; any reasonable trial; £25.—35, Romford Rd., Forest Gate. [X5575]

**3**11.—3 1/2 h.p. Bat, low, fast, reliable B. and B., footboards, splendid climber.—Wheeler, 85, The Venue, Bruce Grove, Tottenham. [X4392]

**X**ERRY, 2 1/2 h.p., new tyres, number new accessories, very smart appearance; £14, great bargain.—Francis, 7, Francis Terrace, Highgate. [X5506]

**9**11 2 1/2 h.p. A.J.S., 2-speed, free engine, chain drive, in perfect condition, lamp, generator, good tyres; 30.—Tartie, North End, Croydon. [X5602]

**3** RADBURY, 1912, 3 1/2 h.p., lamp, generator, horn, 3 valves, plug, accessories, new condition; £25.—Adgell, 1, Church Path, Mitcham. [X5446]

**3** RADBURY, 1912, T.T. model, very fast, new condition, brand new tyres, head lamp and generator, 33/10.—Seen, Purley Motor Garage. [X5485]

**M**OTO-REVE, 1911, twin, 2 1/2 h.p., just overhauled, engine like new, tyres good; bargain, £24, or nearest.—73, Shepherd's Bush Rd., W. [X5546]

**9**12 Hammer, 3 1/2 h.p., 2-speed, lamp, horn, spare tube, belt case, and spares; low price for quick sale.—Hers to Read Bros., Tunbridge Wells. [X5492]

**T**RIUMPH, 1911, F.E., everything absolutely perfect, new back tyre, all spares; for quick sale 36/10.—Squire, Broadway, Weybridge. [X5439]

**N**EW 1912 2 1/2 h.p. Free Engine Motosacoche, cash £32; also 3 1/2 h.p. Precision-Dot, very low, fast, 26.—Rhodes, 242, Brockley Rd., S.E. [X5445]

**A**TE 1909 Free Engine Triumph, 1911 improvements, long exhaust pipe, etc., in excellent condition; any reasonable trial; £28/10.—Alderton Lodge, Staines. [X4319]

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The Service Co., 292, Holborn, W.C.

East London Rubber Co., Gt. Eastern St., E.C.

## MOTOR BICYCLES FOR SALE.

**T**RIUMPH, 1911 model, fitted with Mabco free engine clutch, horn, lamp and generator; £34.—Moss, 1, St. George's Mews, Primrose Hill. [X5561]

**K**ERRY, 2 1/2 h.p., in good condition, B.B. carburettor, belt, and accumulator, all quite new, adjustable pulley; £8/15.—14, Clapham Rd., S.W. [X5607]

**R**UDGE, 1912, free engine, 300 miles, lamp, horn, spares, £46; also 1910 1/2 Triumph, horn, lamp, bargain, £32.—239, Broadway, Cricklewood. [X5603]

**3**1/2 h.p. M.M.O. Amac, h.b.c., new Clipper back, 32 Palmer front, in splendid order; £16, offer.—Cooper, 15, Webb's Rd., Battersea Rise, S.W. [X5426]

**2** 1/2 h.p., Chater-Lea frame, new tubes, good covers, in 24 splendid order; offer.—Cooper, 15, Webb's Rd., Battersea Rise, S.W. [X5427]

**T**RIUMPH, 1912, 3 1/2 h.p., free engine model; instant delivery; £55, cash, or deferred payments.—John Barker and Co., Kensington High St., W. [X5623]

**E**AGLES.—N.S.U., 3 1/2 h.p., popular model, new last June, as new, mag., 1911 spring forks, adjustable pulley, new Dunlop belt, Palmer cord tyre; £24/10.

**E**AGLES.—N.S.U. 3 1/2 h.p. Twin, latest pattern model, spring frame, Bosch, m.o. valves, 2 speeds, free engine, nearly new; £34.

**E**AGLES.—Motosacoche, 1910, Bosch, free engine, Druid forks, Whittle belt; £16.

**E**AGLES.—N.S.U. 4 h.p. Twin, 1910, Bosch, m.o. valves, N.S.U. 2-speed gear and free engine, nearly new; £28.

**E**AGLES.—Bradbury, 1912, belt, 2 speeds and free engine model, new, slightly soiled; £50.

**E**AGLES.—Excelsior, Chater-Lea, 3 1/2 h.p., low built, vertical engine, h.b.c., adjustable pulley; £9/10.

**E**AGLES.—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engines, from £5/15, for Triumph £6/15, for Bradbury £7; trade supplied.

**E**AGLES.—We have a few brand new 3 1/2 h.p. 1911 N.S.U. 65x88 Model de Luxe, just delivered, fine machines for sidecar work, Bosch mag., 1912 spring forks and other improvements, finished in latest style, complete with stand, carrier, tool case, full set of tools, £37; N.S.U. 2-speed gear £5/15 extra; Millford Herald sidecar with No. 1 torpedo body, £7/15 extra; deferred payments, exchanges entertained.

**E**AGLES and Co., High St., Acton.—N.S.U. West London District Agency. Liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X4451]

**F**.N., 1911, 4-cyl., perfect condition; £30, or near offer, or would consider exchange 2 1/2 h.p. lightweight same make.—Hall, 9, Arden Rd., Brixton Hill. [X5596]

**D**OUGLAS, 1911, 2-speed, free engine, splendid condition, new lamp, spare belt, tyres excellent; £30.—Wood, 13, St. German's Rd., Forest Hill, S.E. [X5539]

**£**30.—New lightweight torpedo Precision, with all accessories, fully guaranteed; must sell before Friday.—George, 4, St. Michael's Terrace, Wood Green. [X4323]

**N**EW Hudson, 1911, 3-speed, 3 1/2 h.p. J.A.P., as new; cost over £60; will accept £45/10 for quick sale.—Capt. Duke, 65a, Rosendale Rd., West Dulwich. [X4618]

**19**11 5 1/2 h.p. Twin Rex, free engine, handle starting, splendid condition, lamp, horn, speedometer; seen any time; £30.—Crampton, 137, High St., Acton. [X5450]

**I**NDIAN, 7 1/2 h.p., 1911, 2 speeds, foot clutch pedal, accessories, absolutely perfect; £47/10; owner purchased car.—Day and Day, 114, Long Acre, W.C. [X5499]

**P**HELAN and Moore, Ltd., 4, Percy St., W., have several 2nd-hand P. and M.'s for sale; party offers on application, or can be seen at above address. [X4772]

**H**UMBER Lightweight, late 1911, like new, splendid machine; owner going abroad; what offers over £20.—F. Keasterton, 13, Priory Park Rd., Kilburn. [X5395]

**2** 1/2 h.p. Twin Moto-Reve, mag., tyres and tubes new, 24 perfect running order; £20, or near offer.—Brett, c/o Eaton Garage, 3, Elizabeth St., Victoria, S.W. [X5406]

**I**NDIAN, 7 1/2 h.p., 1911, 2 speeds, foot clutch pedal, accessories, absolutely perfect; owner purchased car; £50.—Day and Day, 114, Long Acre, W.C. [X4924]

**D**OUGLAS, 1911, new condition, Lucas lamp and generator, horn, mirror, 9 months unexpired Motor Union policy; £30.—The Brewery, Larkhall Rise, S.W. [X5622]

**F**OR Sale, 1912 3 1/2 h.p. Bradbury, 2-speed and free engine, perfectly condition, nearly new; £48; only ridden 300 miles.—Pether, 75, Shuen Lane, Mortlake. [X5493]

**5**—6 h.p. twin Algon, accumulator, spring forks, low, perfect, £12/10; 3 1/2 h.p. Ascot, mag., practically new, £22/10.—B., 47, Sandringham Rd., Willesden. [X5449]

**B**ARGAIN—3 1/2 h.p. Brown, very low position, take away; £14.—Cobbold, c/o Blomfield, watchmaker and jeweller, 127, Leytonstone Rd., Stratford. [X5532]

**M**INERVA, 2 h.p., upright, 26x21, just enamelled, plated, splendid condition; £9, or near offer, genuine bargain.—Peters, 18, Barchard St., Wandsworth. [X5532]

**B**RADBURY, 1911, free engine, speedometer, lamp, horn, belt and tyres nearly new; £35, or near offer; cash wanted.—Fox, 5, Charleotte Rd., Worthing. [X5555]

**T**RIUMPH, 1912, F.E., new Aug. 25th, used once, selling through illness; first offer £49/15 accepted.—Box L8,660, The Motor Cycle Office, 20, Tudor St., E.C. [X5455]



## MOTOR BICYCLES FOR SALE.

**BRADBURY**, 1912, free engine, new July, only run 250 miles, in perfect order, plating and enamel unmarked; £40. — Lambert Thornycroft, Richmond, Surrey. [5567]

**24** h.p. Minerva, good running order, spring forks, B.B. carburettor, Whittle belt, 26in. wheels, h.b.c. accessories; £9/10. — McCreath, The Grove, Egham, Surrey. [5541]

**19** 10<sup>1</sup>/<sub>2</sub> h.p. Scott, 2 speeds, free engine, all accessories, excellent condition; £30, or exchange combination. — Lauremount, Churchfield Rd., Walton-on-Thames. [X4469]

**TRIUMPH**, 1912, free engine, Cowey, P. and H. lamp, horn, mirror, watch, mudshields, 2 extra tubes, spare valve, Whittle; 48gns.—127, Harbord St., Fulham. [5446]

**12** 11 T.T. Triumph, special machine, very fast, in first-rate order, with max. hand Cowey, 2 handlebars; only wants seeing; at £36.—Pond, 349, West End Lane, London. [X4516]

**19** 09 P. and M., just overhauled by makers and new Kempshalls fitted, lamp, tube case, all spares; £30; running perfectly.—E.V., 113, Hotel Rembrandt, Kensington. [X4407]

**HUMBER**, 22h.p., running order, accumulator, £5. — Shaw-Crawley forecarrage and motor bicycle, 3<sup>1</sup>/<sub>2</sub> h.p. motor, in good condition, £3.—Lawson, Moy, Steyning, Sussex. [5517]

**TRIUMPH**, 34h.p., Mabon var. gear, free engine (1912), Lucas lamp set, horn, etc. tyre hanger, overhauled, spares; £33.—21, Atheldene Rd., Earlsfield, S.W. [X4425]

**ANTOINE** 6h.p. Twin, Bosch, R. and B. car, h.b.c., spring forks, tyre new, £18; with Montgomery sidecar, castor wheel, £14/14 model, £23.—49, George St., Camberwell. [5467]

**MOTOSACOCHE**, 1910<sup>1</sup>/<sub>2</sub>, mag., Whittle, Druids, free engine, h.b.c., 160 m.p.g., guaranteed perfect mechanically, carefully used; bargain, £18.—2, Colonnade Rd., Eastbourne. [5329]

**19** 12 7h.p. Chitch Model Indian, perfect, very fast; any trial; £53/10; or with Millford sidecar, £58; can be seen at Clarke's Garage.—Searle, 66, Victoria St., St. Albans. [5624]

**TRIUMPH**, Sept., 1909, 34h.p., standard except Whittle belt Dreadnought Clancher back tyre, re-bushed April last, excellent condition; £24.—76, Cromwell Av., Highgate. [5501]

**31** h.p. Triumph, late 1911, free engine model, Lucas lamp, horn, 6 fitted solid leather bags, spare tyre, perfect condition; £40.—Apply, Lyons, 25, Woodford Rd., Watford. [X4368]

**32** h.p. Triumph, late 1910, recently overhauled, Kempshall and Michelin tyres, almost new, lamp, horn and accessories; £30.—R. Urquhart, 2, Elwell Way, Park Langley, Beckenham, Kent. [5554]

**ZENITH**, 1912, 8h.p., all spares, perfect condition, take sidcar anywhere; offers, or consider 1912 2-speed Douglas and little cash; Surrey.—1308, The Motor Cycle Offices, Coventry. [X3653]

**31** h.p. Tourist Rex, late 1910, perfect condition throughout little used; 25 gns., or cash balance for modern higher powered twin.—2, Lovelace Villas, Portsmouth Rd., Sarbiton. [5318]

**RUDGE**, 1912, Aug., free engine, complete with P. and H. lamp, etc., 3-note horn, etc., ridden 500 miles, absolutely in new condition; accept £48.—Peacock, 274, High Rd., Balham. [5481]

**F.N.** 21h.p. Lightweight, spring forks, Bosch mag., Palmer tyres, stand, carrier, lamp, horn, complete, perfect order; bargain, £15.—Peacock, 274, High Rd., Balham. [5482]

**F.N.**, 22h.p., 1908 model, had little use, complete with lamp, horn, etc., perfect order; £12. — Peacock, 274, High Rd., Balham. [5483]

**SPECIAL Bargain**—24h.p. Chater-Brutus, Amac, absolute h.b.c., splendid condition, re-enamelled and overhauled; only wants seeing; £8/10, offer.—29 Broughton Rd., West Baling, W. [5617]

**MOTOSACOCHE**, 24h.p., Oct., 1911, free engine, B. and B. carburettor, adjustable pulley, Cowey speedometer; £19. — A.B., c/o Cass's Motor Mart, Warren St., Tottenham Court Rd. [5536]

**MORMAN** and Bliss, London Rd., Hounslow. Phone: 227.—Prompt deliveries of New Hudsons, Radesingers, or Bradburys; our allowance on 2nd-hands will surprise you, all carr. paid U.K. [X4523]

**5**-6h.p. Antoine, Chater-Lea, spring forks, footboards, dry battery, 1912 Mabon free engine clutch, new Palmer cord, P.H. lamp, Dunlop belt; £17/10, or offer.—35, Colwell Rd., E. Dulwich, E.C. [5539]

**DOUGLAS**, late 1910, exceptional condition, enamel, plating excellent, Palmer cord, Rom unpunctured, all accessories and spares, speedometer optional; £24.—S. Reeves, Lavender Rd., Wallington. [5455]

**FREE Engine** 34h.p., 2-speed 1912 Calthorpe, absolutely new, in perfect condition; cost £54, will take £45, or best offer.—Apply, J. Edmont, "Utriph Press," 44, Worship St., London, E.C. [X4328]

**PRESTON**—1912 models—end of season, great reductions. —Humber, 34h.p., 2-speed; Premier, 3 h.p., 3-speed; Singer, 24h.p., 2-speed; can deliver from stock.—Baddley and Co., Lancaster Rd. Tel.: 100. [X3610]

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<b>BAT-JAP</b> , 3 <sup>1</sup> / <sub>2</sub> h.p., with P. & M. chain-driven 2-speed gear, large tyre rear, spare exhaust valve, one of the finest machines in the world .....	60	0 54 0
<b>BRADBURY</b> , 24 h.p., N.S.U. 2-speed, with variable pulley .....	56	6 47 0
<b>BRADBURY</b> , 3 <sup>1</sup> / <sub>2</sub> h.p., 2-speed, chain drive .....	58	10 49 0
<b>BRADBURY</b> , 3 <sup>1</sup> / <sub>2</sub> h.p., free engine model ..	54	10 45 0
<b>DOVER</b> , 3 <sup>1</sup> / <sub>2</sub> h.p., free-engine model .....	55	5 46 0
<b>ROUGLAS</b> , 2 <sup>1</sup> / <sub>2</sub> h.p., Model K, 2 speeds, kick starter, and free engine .....	50	0 47 0
<b>SINGER</b> , 4 h.p., 2-speed bracket gear, pedal engine starter .....	65	0 55 0
<b>NEW HUDSON</b> , 3 <sup>1</sup> / <sub>2</sub> h.p., 3 speeds, F.E. model ..	59	17 51 0
<b>PREMIER</b> , 3 <sup>1</sup> / <sub>2</sub> h.p., free-engine model ....	54	17 44 0
<b>PREMIER</b> , 2 <sup>1</sup> / <sub>2</sub> h.p., "the Solo Mount," F.E. ..	43	7 37 0
<b>GENTAUR-HUMBER</b> , 2 h.p., 3-sp. gear mod. ..	47	10 40 0

## SIDECAR COMBINATIONS

<b>ENFIELD-J.A.P.</b> , 6 h.p., and sidecar .....	84	0 75 0
<b>CLYNO</b> , 5-6 h.p., ditto .....	85	5 75 0

The above are the remainder of our 1912 stock, and we want to make room for the 1913 models, for which we are now booking orders.

DON'T FORGET TO WRITE US BEFORE YOU BUY.

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## SECOND-HAND MACHINES

<b>F.N.</b> , 5-6 h.p., 4-cyl., shaft drive, all tools, lamp, etc., very special bargain .....	335	0
<b>REX</b> , 5 h.p., Twin, magneto, 2 speeds, free engine, handle starting, complete with sidecar .....	227	10
<b>V.S.</b> , 5-6 h.p., 1910 model, splendid and fast machine .....	227	10
<b>ENFIELD</b> , 24 h.p., 1912 model, only run 500 miles, 2 speeds, free engine, handle starting, enamelled helio, special long exhaust pipes, XL All saddle, Amac carb., watch, tools, etc., as new .....	240	0
<b>PREMIER</b> , 3 <sup>1</sup> / <sub>2</sub> h.p., late 1910 model, complete with P. & H. lamp, separate generator, horn, sidecar, really good combination .....	332	10
<b>DOUGLAS</b> , 24 h.p., 1910 model, nice order .....	227	10
<b>MOTO-REVE</b> , 2 <sup>1</sup> / <sub>2</sub> h.p., 1910 model, good solo mount, perfect .....	218	0

## SIDECAR

One only Brand New "TURNER" coach-built, painted Lincoln Green, 24in. tyre, luggage grille, hood, screen, fits any standard machine; usual price, £18 ios.; clearance price .....

Owing to the extraordinary low prices quoted above, we are unable to entertain any exchanges. Remember, there can only be one buyer for each of the above. WE CANNOT REPEAT. Come early and avoid disappointment.

## Haslingden.

Telegraphic Address: "Cordingley, Haslingden."  
Telephone: 2Y, Haslingden. w.h.n.

## MOTOR BICYCLES FOR SALE.

**RELIABLE Motor Cycle**, fitted 24h.p. Minerva, 1912 Mabon clutch, B. and B. Bosch, all h.b.c., Palmer cord, Lucas, perfect condition; £18/10.—A.C., 20, Eland Rd., Clapham Junction. [5230]

**BARKER'S** for Motor Cycles.—In stock and ready for instant delivery. —Triumph, Singers, Motosacoches, and the spring frame Barker-Palmer, 1912 model.—John Barker and Co., Kensington High St., W. [0075]

**F.N.** 24h.p. Lightweight, 2 speeds, free engine, shaft drive, ideal little machine, in perfect condition; Jones speedometer, complete with tools and spares; £26. —C. Heron, Dalwood, 180, Beulah Hill, Upper Norwood. [5553]

**LINCOLN** Elk, 34h.p., 1912, only run 600 miles, lamp, horn, mirror, spare belt, valve, plugs, etc.; £26, or nearest offer this week; owner leaving England.—Fenton, 9, Cazenove Rd., Stoke Newington, London, N. [X4584]

**RUDGE**, 1912, speedometer, P. and H. lamp, spare valve, 2 belts, unspractured, unpunctured, perfect in every detail; accept £42, no offers; Kent county.—Box L8,679, The Motor Cycle Offices, 20, Tudor St., E.C. [5311]

**TRIUMPH**, 1912, free engine, delivered fortnight ago, fitted up with Cowey speedometer, Miller oxidized lamp and generator, and all spares, only ridden 40 miles; cash price £55.—To be seen at Erwin, Joiner, Grove Crescent, Kingston. [5358]

**F.N.**, 1911, 4-cyl., 5-6 h.p., 1912 clutch, Stewart speedometer, P. and H. lamp set, horn, tools, spare cover and buffed tube, £35; 2-speed, £42; sidecar and luggage carrier £45; £2/10 insurance transferred; see any time.—955, Fulham Rd. [5543]

**ZENITH**, 34h.p., Nov., 1911, 28/8 sidecar, 2 large Lucas lamps, and large generator, speedometer, extra tube unused, 2 belts, tyres perfect, spare petrol tank, all spares; cost £72, accept £55.—Turner, 9, Albany Rd., Stroud Green, N. [X3901]

**P. and M.** (1909), in excellent condition, 2-speed, free engine, machine just overhauled, and engine lately thoroughly overhauled by makers, tyres new; can be seen by appointment; £30 or near offer.—Haydon, 189, Penton Rd., Vauxhall, London. [5509]

**QUADRANTS**—1912 models supplied by Cass's Motor Mart from stock. 44h.p. passenger model, recognised as the finest combination for solo and sidecar work; exchanges and extended payments; for particulars and latest catalogue apply Cass's.

**CASS'S**—Triumph, 34h.p., 1911, clutch model; any examination; £39.

**CASS'S**—Motosacoches, 24h.p., 1912, brand new, var. gear; £39.

**CASS'S**—P. and M., 34h.p., late 1910, 2-speed; bargain, £58.

**CASS'S**—T.A.C., 4-cyl., 3-speed, gate change, B. and B. var. jet carburettor; any examination; £35.

**CASS'S**—J.A.P., 34h.p., B. and B. carburettor, mag.; bargain, £18.

**CASS'S**—Minerva, 24h.p., B.S.A. fittings, good running order; £9/9.

**CASS'S** for Sidecars.—Torpedo pattern, with side door, apron and mat, 24in. tyre, quick detachable joints; from £6/15; best value obtainable.

**CASS'S** will send complete list of their splendid stock of 2nd-hand and new machines upon application; inspection of stock in situ, exchanges or extended payments arranged.—5, Warren St., W. (opposite Warren St. Tube Station). Tel.: 3624 Mayfair. [5533]

**19** 11 24h.p. 3-speed New Hudson, in first-class condition, J.A.P. engine, 2 speeds, only run 1,200 miles, engine, appearance, and general condition perfect.—Grove Bros., 190, High St., Guildford. [5592]

**FOR Sale**, 24h.p. 1912 Singer, bought end of March, splendid condition; £55, including cycloset, lamp, generator, horn, extra toolbag, new Brooks saddle.—Apply by letter, firstly, M. F. T. Cleaver, 11, Carlton Hill, St. John's Wood, London, N.W. [5542]

**SOUND Bargain**—34h.p. White and Poppe, enamelled grey, like new, plating perfect, h.b.c., 24 inch, overhauled tubes, new rubber belt, lamp, horn, pump, tools, spare cover and tube and valve, 2 accumulators, wipe contact, will hold 14 stone on compression; £12.—Waterman, Chorleywood, Herts. [5520]

**8**h.p. Overhead Valve J.A.P., 85x85, Chater No. 9 frame, No. 2 spring forks, Jones speedometer to 80, Lucas lamp and generator, only done 1,800 miles, perfect condition; £45.—Blake, c/o Bamford's Garage, 42, Providence Place, Brighton. [X4320]

**19** 11 F.N., 5-6 h.p., perfect condition, little and carefully used, enamel, plate, and tyres good order, £32; Jones speedometer, £3/10; 6h.p. twin Rex, free engine, lately overhauled, quick sale £23; ride reasonable distance.—Letters only, Bennett, Woodside Lane, N. [5623]

**19** 12 Phelon and Moore, purchased new July 1st, cost £70, hardly ridden, all spares, tools, Jones speedometer, tyres as new, guaranteed perfect and genuine; honest reason for selling; sacrifice, £58.—Grimaldi, 5, Hillside Mansions, Jackson's Lane, Highgate, London. [5613]

**P. AND M.**, 34h.p., 1910, nearly new 24 back tyre, spare cover and tubes, tube case, extra girders, XL all, Cowey, lamp, watch, mudshields, all spares and tools, the whole in excellent condition; £43; buy-runabout.—Thomas, 30, Narbonne Av., Clapham Common, S.W. [5568]



# THE MOTOR CYCLE

LEADERETTE:

## Motor Cycle Taxation.

**A** BRIEF reference made last week to the recommendation of the Committee which has sat since last December to consider the question of motor car taxation has, as we expected, caused quite a flutter in the motor cycle world. The secretary of the Manufacturers' Union immediately circularised his members, asking them for opinions regarding the suggestion that motor cycles with engines over 89 mm. bore should pay two guineas, the Treasury rating this as 5 h.p. If a majority of the members think that a protest should be entered, the Treasury will be approached and asked seriously to consider this recommendation. Our view is that the suggestions are fair only so far as they apply to cyclecars, *i.e.*, four-wheeled cyclecars fitted with single-cylinder engines under 89 mm. bore should not be expected to pay more than the motor cycle tax of £1. Even this is 5s. too much while two-wheeled horse-drawn carts pay 15s.

It will be seen, on reference to the motor car table showing the tax upon any size of motor car and published by *The Autocar*, that the owner of a twin-cylinder cyclecar will, if the recommendation becomes law, have to pay two guineas per annum when the bore of the cylinders exceeds 63 mm., and three guineas per annum when the cylinder bore exceeds 72 mm.

For three guineas a twin engine can have a 98 mm. bore. Four cylinder car engines practically commence at three guineas with a bore of 64 mm., and over 68 mm. they are four guineas. Of course, for two guineas a single-cylinder engine can be fitted up to 102 mm.; this equals by Treasury formula 6.45 h.p.

Where the recommendation will affect motor cyclist owners is in the case of motor bicycles and motor bicycles with sidecars fitted with V twin engines which exceed 63 mm. bore. Now practically all twin-cylinder sidecar machines have engines exceeding this dimension, and the majority of them exceed 72 mm., and they will have to pay a tax of three guineas per annum, which is the same as a 68 mm. four-cylinder motor car. Even the four-cylinder F.N. comes within the two guineas tax, as, although the total capacity of four cylinders  $52\frac{1}{2} \times 57$  mm. only equals 494 c.c., the horse-power by Treasury formula is 6.8.

The formula being  $\frac{52\frac{1}{2} \times 52\frac{1}{2} \times 4}{1613}$ , it will be

seen by this that, although the committee doubtless wishes to separate the cyclecar from the heavy motor car, as regards taxation, its recommendation, although perhaps fair to cyclecar owners, is most unfair to motor bicyclists and sidecarists. In the White Paper recently issued is a printed statement handed in by Mr. Archibald Sharp, representing the Auto Cycle Union. In his statement Mr. Sharp recommended that motor cycles should be taxed in general

on a sliding scale of capacity. Apparently his suggestions have been entirely ignored. He recommended an annual tax of 10s. up to 350 c.c., 20s. from 351 c.c. to 500 c.c., 30s. from 501 c.c. to 800 c.c., and over 800 c.c. 40s. He also pleaded that there should be a reduction on old pattern machines, and, quoting from *The Motor Cycle*, pointed out that in our sales columns the prices of sixty machines varied from £7 10s. to £62, the average being £30 3s. This and the c.c. rating have been totally ignored, which seems strange, considering Mr. Sharp was the only person consulted on the question who, so far as we know, had any practical knowledge of motor cycles.

## A Complicated Position.

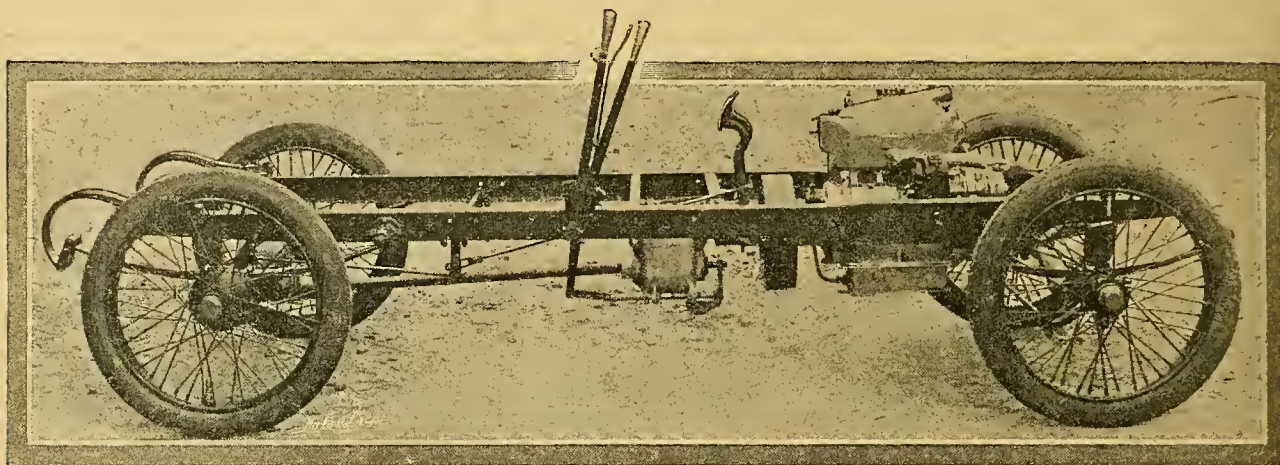
**T**HE position is really very complicated, because on the one hand we have the Treasury formula recommended by the R.A.C., and, on the other hand, we have the definition of the R.A.C. and A.C.U. with regard to cyclecars, where the total cubical capacity of the engine is fixed at 1,100 c.c., the bore and stroke in this instance being both accounted for in the calculation. For example, an engine with a total cubical capacity of 1,100 c.c. allows for a twin-cylinder of approximately 88 x 90 mm. Now a two-cylinder engine of 88 mm. bore on the Treasury formula is over 9½ h.p., and a tax of three guineas is demanded. To quote an example of the iniquity of the suggested taxes, the owner of a four-cylinder motor bicycle of under 500 c.c. would have to pay as much as the owner of a 6½ h.p. motor car, and a twin sidecar engine over 72 mm. bore would pay the same as an 11 h.p. car.

At the moment of writing it is impossible to say whether the recommendation will become law, but we hope it will not—at least, we hope that motor cyclists will be allowed to run two and three-wheeled machines with the present annual payment of £1. We do not say this because motor cyclists, generally speaking, are men who cannot afford more, but because we think that on the lines of general taxation motor cyclists are sufficiently burdened already. We are called on to pay 1s. 6d. per gallon for petrol, and 3d. of this goes to the Treasury. We pay £1 per annum for the use of the roads, and only a portion of it goes to the Road Board for road maintenance and improvement. We pay 5s. for a driving licence each year, or a total of over £2, basing the petrol consumption at 80 m.p.g. and 5,000 miles per annum. This sum from 75,000 riders should satisfy even the most rapacious Chancellor of the Exchequer. What really ought to have been recommended was a taxation by bore and weight combined. Then a light motor cycle fitted with a low-powered engine and incapable of high speed would have got off lightly as it should do, and a light or heavy machine with a more powerful motor would have been taxed in proportion to its higher power and speed.



# ANOTHER FOUR-CYLINDER CYCLECAR.

FEATURES: Motobloc cylinder casting, enclosed valves, worm drive.



Chassis of the latest Aeries 8-10 h.p. four-cylinder cyclecar, which has a channel steel frame and three-quarter elliptical springs at the rear.

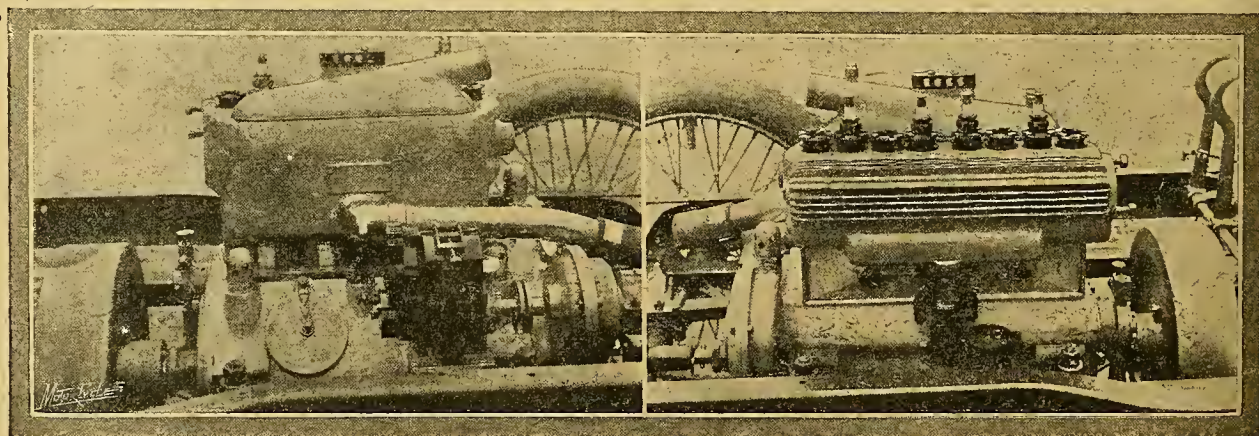
**W**E dealt last year with the Aeries Ponette, and now are able to describe the 8-10 h.p. four-cylinder model, which comes within the cyclecar definition on account of its weight and cylinder capacity. The motive power is a four-cylinder monobloc water-cooled engine, 59 x 100 mm., with chain driven cam and magneto shafts. All the valves are on the near side, and the exhaust chamber is neatly ribbed. The Marvel automatic two-jet carburettor is also on the valve side, only the mag-

neto being on the off side. As regards lubrication, a rotary gear wheel pump delivers oil to the main bearings and keeps a constant level in the troughs, in which the big ends dip. The water circulation is on the thermo-syphon principle.

## Transmission Details.

The clutch is of the leather-covered cone type, while the gear box, which is neat and small, contains three speeds forward and a reverse, the ratios being 4, 7, and 10 $\frac{1}{3}$  to 1. The rear brakes are of

the internal expanding type, and may be put into operation either by a pedal or hand lever. The chassis is of pressed steel, narrowed in front to allow an ample lock. The drive from the gear box to the back axle is by propeller-shaft, the final transmission being by worm. The chassis is suspended on semi-elliptical springs forward and three-quarter elliptical springs at the rear, the latter being of somewhat unconventional design. 700 x 75 mm. tyres are fitted. The neat two-seated body with scuttle dash is clearly shown.



Left and right side views of the Aeries water-cooled engine, which has a monobloc cylinder casting and valves entirely enclosed.

## OPEN RACE MEETING AT BROOKLANDS.

On October 12th at the British Motor Cycle Racing Club open meeting at Brooklands the following Auto Cycle Union Championships will be run off: One hour race for machines with engines of a cylinder capacity not exceeding 500 c.c. for *The Motor Cycle Challenge Cup*, a one hour race for machines not exceeding 350 c.c. for *The Automotor Challenge Cup*, and

a five-mile race for machines with engines not exceeding 1,000 c.c. for the *Motor Car Journal Challenge Cup*. These cups are being put up for these races subject to the consent of the donors for this year only. The winner of the challenge cup in each race will also be awarded the Auto Cycle Union gold championship medal, which will be presented by the B.M.C.R.C.

The second man to finish will be awarded the Club gold medal, the third man the Club silver medal, and the fourth man the Club bronze medal. Earlier in the afternoon there will be a cyclecar and sidecar race. Entries will be 7s. 6d. for members of the A.C.U. and B.M.C.R.C., and one guinea each for those unconnected with either of these bodies.



# Occasional Comments

by "Felix"



## Hub Gears.

I hear that some of the most conscientious firms in the industry have failed to perfect the three-speed bottom bracket gear. It has proved unexpectedly difficult to obtain a design which should be light in weight, proof against the vagaries of non-mechanical clients, and capable of delivering a maximum percentage of the engine power at the road wheels on the lower ratios. (I am at the moment referring to epicyclic counter-shaft or bottom bracket gears; the sliding dog clutch type has long since proved its reliability.) It is therefore probable that many leading firms will fit proprietary three-speed hubs next season for all customers who desire a variably geared model. I sincerely hope that they will include some dodge for making the rear wheel more readily detachable; my chief objection to modern three-speed hubs is the time required for changing a cover. If no such device be incorporated—and beyond contradiction it will tax ingenuity—I advise a heavy and costly cover which may be expected to outlast a season's riding.

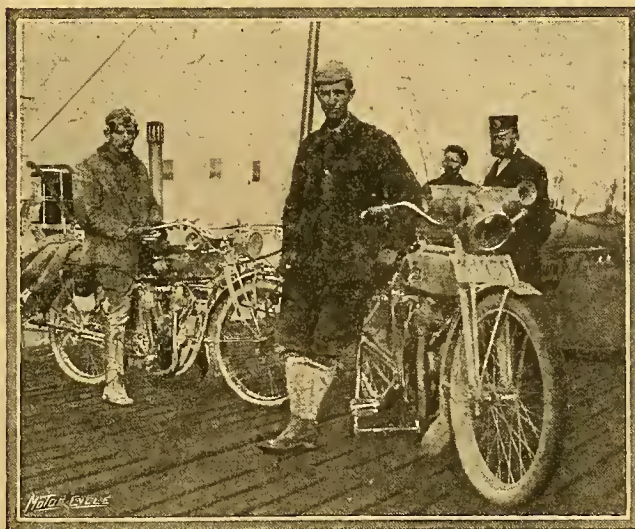
## A Wet Weather Tip.

During the recent long distance trials several riders came through the wettest runs without being soaked, and questions elicited the fact that they wore oilskins under ordinary waterproofs. Since then other riders have adopted the tip. They use fawn Paramatta suits for general riding, these suits making the neatest garb for all ordinary work, and failing only when wind and rain test their proofing to the uttermost. As soon as a real drencher begins, a small roll, consisting of light oilskins of good quality, is unpacked from the usually empty corner between the tail of the carrier and the back mudguard, and these oilies are worn beneath the Paramatta until the rain stops. A suit of good oilies can easily be packed in the corner described; but personally I should prefer to wear them over the Paramatta, rather than beneath it, for two reasons, oilskins dry quickly, whereas Paramatta, once sodden, dries slowly; and why strip off the Paramatta suit, when oilies can be cut loose enough to fit over it? Flixson cloth suits are becoming very popular amongst cyclecar owners. They are not cheap, but their varnished surface shoots away the heaviest rain, and they look neater than the best oilies. By the way, we are still waiting for a durable waterproof glove. Indiarubber gloves are costly and soon perish, owing to their frequent contact with oil. Asbestos gloves are genuinely wetproof, but are rather thick and heavy for use on a motor bicycle, with its small control levers. Most of us continue to use leather gauntlets, which are only temporarily satisfactory.

## Cyclecar Carrosserie.

I notice that some cyclecar makers are committing the same blunder which for years disfigured the productions of most automobile factories, i.e., they fail to provide adequate front mudguarding. Last week

a friend of mine drove 120 miles on a cyclecar which had front mudguards without any down-turned lip and without flaps between guard and bonnet. His machine and person were in an indescribably filthy state when he reached his destination. If a machine possesses running boards, the gap between the boards and the side members of the chassis should also be filled in with leather or waterproofed canvas. These additional guards cost a good deal of money when the work is done by the trade, for patent leather is expensive, and the work takes time. A car catalogue before me as I write charges about seven guineas for these three indispensable extras. I have once or twice made the guards myself for different vehicles at very small expense. Paper templates may be cut, and taken to a shoemaker's supply stores, when the leather can be cut from odd bits at a reduced charge, instead of a whole hide being used. The inside flaps for the front guards may be fitted with brass eyelets, and laced to guard and frame with hide laces; this method is more lasting than rivets. The lip to prevent mud and water blowing back from the outside edges of the front guards may be bent out of sheet iron and riveted *in situ*. The filling pieces to cover the interstices between running boards and chassis require a great deal of leather, and I should be inclined to experiment with some cheap waterproof fabric, such as Willesden canvas. These fillings must be so attached as to avoid leaving a trough in which dirt can collect. If cost be no great concern double glazed leather can be obtained from a good leather shop. Patent leather glazed both sides enables mud, etc., to be more readily sponged or swilled off.



## A LONG TOUR THROUGH EUROPE.

Two American tourists, the brothers Cooleage, of Atalanta City, Georgia, with their 7 h.p. Indian and Thor motor cycles, on which they have just completed a 5,000 miles trip. They arrived at Dover one day last week, and describe their trip in the vernacular as a "nifty" time.



## THE MOTOR CYCLE IN INDIA.

THE photograph herewith may possibly be of interest to some of the readers of *The Motor Cycle* as being representative of the growing popularity of the motor cycle in these parts. The photograph depicts two Triumphs and three F.N.'s, although the first motor cycle brought to this district was a Rex, which, owing to the extreme nature of the roads (sic) at that time—1904—was not very successful, and the engine of the same eventually found its way on to a small 2½t. gauge trolley.

The improvement of the roads—and incidentally the motor cycle—led to the introduction in 1907 of a Triumph, and this was shortly followed by a 1½ h.p. F.N., both of which have done most excellent work and are still running as well as ever. The year 1909 saw another Triumph and a 2½ h.p. F.N., and the latter part of 1910 yet another 2½ h.p. F.N., and more recently a 2½ h.p. New Hudson. It speaks well for the enthusiasm of the sport up here when it is borne in mind that for six months of the year the roads are absolutely un-motorable.

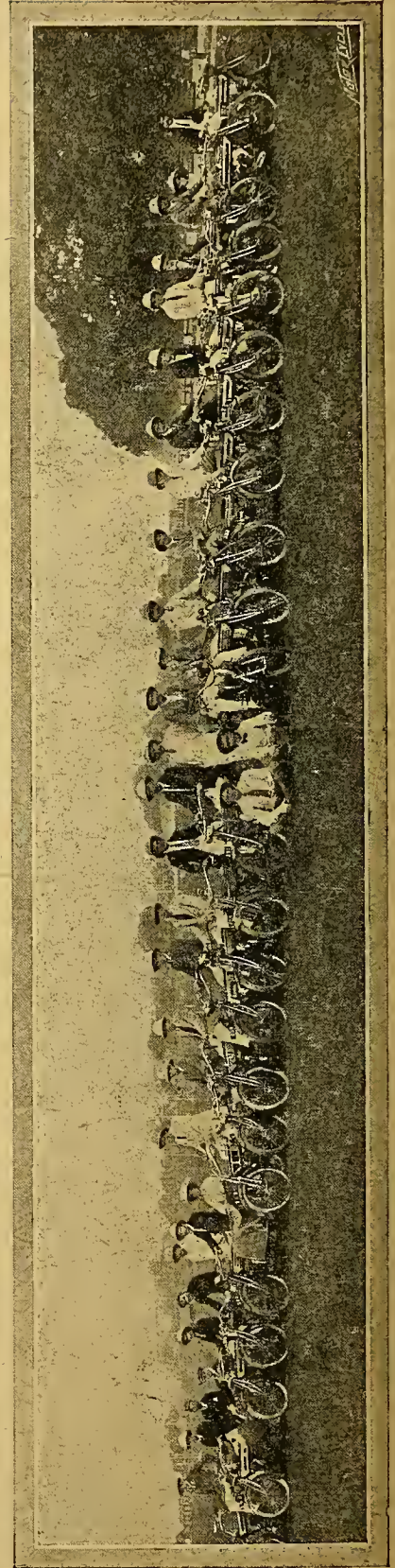
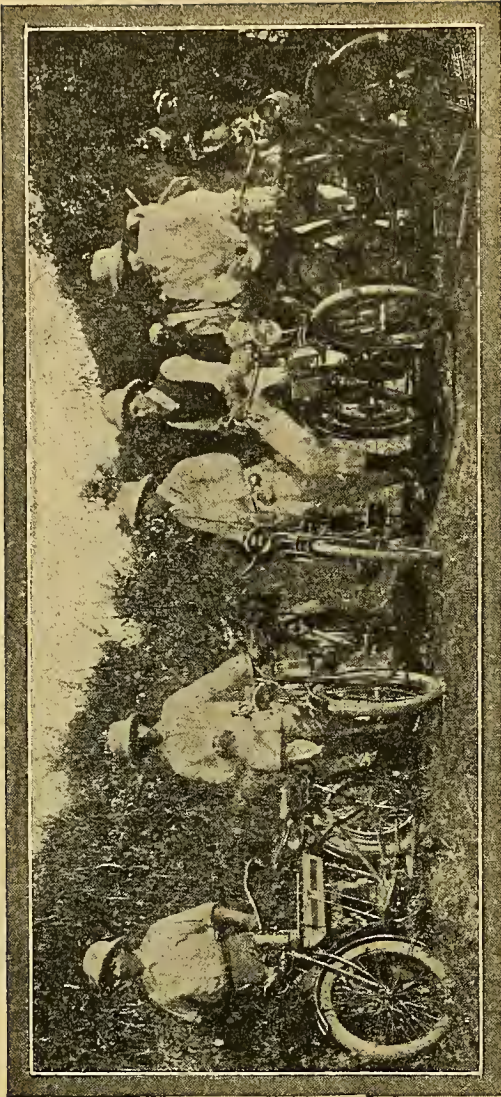
Being in the "jungle," of course we have the usual (I say usual, for it seems that most colonists suffer in the same way) trouble about obtaining spares, etc., and as for repair work, we have to do practically everything ourselves. Our greatest bugbear is undoubtedly the treatment we receive at the hands of the majority of firms in the Old Country. For instance, one of our members sent for a two-speed gear for his Triumph. The gear in question is one extensively advertised "to fit any machine," but after waiting some eight months he was informed that he would require a new rear frame at a cost of £4 10s. extra. He eventually received the gear after nearly eleven months from the time of ordering, and then only to find that the new frame was out by some ¾ in., which threw the wheels out of alignment by inches.

Motor cyclists in the jungle. (See letter on this page.)

The business methods of our nearest motor firms—some 400 miles away—are also in need of a little "tuning up." For instance, some new wheel spokes cost us Rs. 14 (1s. 8d.) each; again, a sparking plug Rs. 7 (9s. 4d.), purchasable in England for 3s. 6d.! The "latest" is an estimate of Rs. 20 (£1 6s. 8d.) for rebushing a Triumph connecting rod, which, compared with the price of a new connecting rod complete from the Triumph Co. at 11s., shows how very anxious our friends are to get rich. Spares, apart from valves and one or two unimportant parts, are unobtainable.

Our experience of motor cycling here points to several desirable features, such as larger tyres, heavier rims and spokes, wider mudguards with more clearance, larger tanks, improvements in carburetter to protect it from fine sand, and, of course, some arrangement of rear springing.

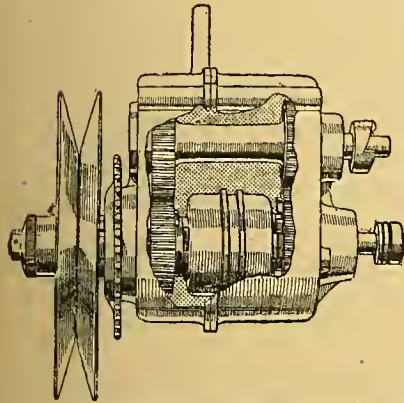
In conclusion, I would like to express our appreciation of the Triumph and F.N. motors, both of which makes have given every satisfaction, and, when fitted with two-speed gear, are eminently suitable for our rough and hilly district.—F. S. LOVICK JOHNSON, A.M.I.M.E., Sylhet, India.



A group of motor cyclists at Eden Gardens, Calcutta, India, who took part in the recent motor cycle race on the Barrackpore Road.



# NEW PREMIER MODELS.



Premier two-speed counter-shaft gear. On the primary shaft are mounted a multi-plate clutch (in the centre), also the engine chain sprocket and the 8in. driving pulley.

**T**WO new Premier models have undergone their preliminary tests and are now under construction for 1913. The first is a special three-speed model, which includes several improvements. The engine is similar to the present  $3\frac{1}{2}$  h.p., and retains all its special features, such as auxiliary exhaust port, gear driven magneto, pear-shaped radiating fins, etc., but it is carried in a new type of frame which allows the cylinder to be removed with ease, and carries a substantial form of bottom bracket and pedalling gear. Druid forks are also fitted to the model we inspected. The tank has a considerably larger capacity, and has neatly rounded corners, which greatly enhance its appearance. The rear wheel is fitted with a 6 $\frac{1}{2}$ in. wide mudguard. A front wheel stand and a neat spring up rear stand are incorporated with the new frame.

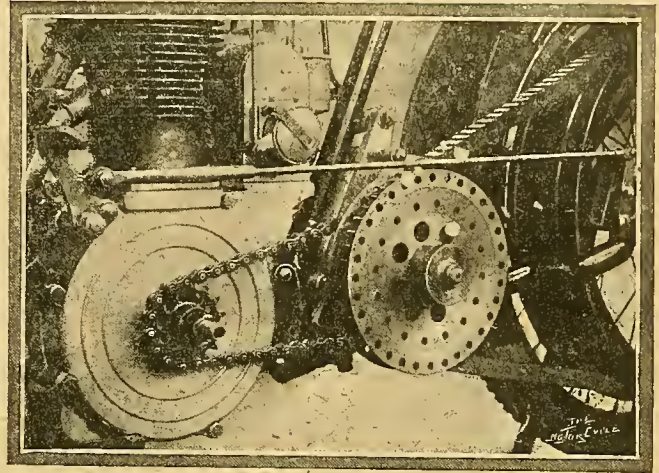
The foot-rests give a choice of three positions, and can be varied to suit the requirements of the rider by detaching the rubber pads and remounting them

on the crossbars in a different hole. The carrier supports a pair of metal covered pannier bags, and, with the mud-guard, swings downwards to facilitate tyre repairs. The Armstrong Mark V. three-speed hub is employed, and our readers will remember that this gear allows the engine to be started with the back wheel on the ground. The drive is by a lin. belt, which is protected at the front by a neat aluminium casting enclosing the pulley. This model should make an ideal touring mount, and the machine on trial has run long distances with a heavily loaded sidecar.

## A New Departure.

Those who prefer the counter-shaft gear will be suited by another new model which is being specially manufactured for sidecar work. This has also the  $3\frac{1}{2}$  engine, and, in most respects, the frame resembles the one described above, except for the fact that footboards replace the adjustable footrests.

The chief novelty lies in the gear itself, which is mounted behind the seat tube, and is capable of being slid backwards and forwards for adjustment of the chain. The chain connects the engine with a sprocket loosely mounted on the primary-shaft. The gearshafts are mounted on ball bearings throughout, and wherever a shaft



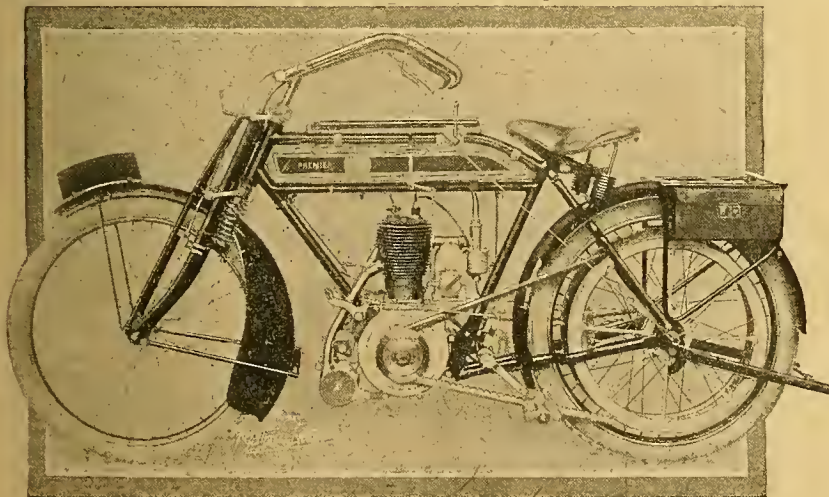
Combined belt and chain transmission is a feature of a new model two-speed Premier.

projects leather washers are fitted to prevent the egress of oil.

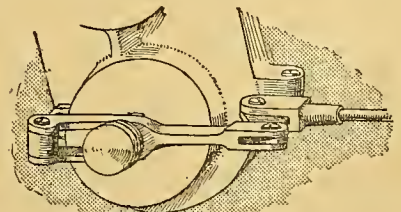
## A Multi-plate Clutch.

Probably the most novel feature of the gear is the clutch, which is of the multi-plate type and lies on the primary-shaft inside the gear box. It is operated by a neat toggle action, and ball thrusts are fitted wherever necessary.

Further than this we are not yet permitted to describe the clutch. The change of gear is effected by sliding dogs, mounted on a shell on the outside of the clutch drum, and moved by means of a striking rod and fork. (This is not visible in the sketch of gear). Outside the chain sprocket on the primary-shaft lies an 8in. adjustable pulley, from which the drive is conveyed to the rear wheel by a lin. belt. A starting dog is fitted to the pro-



**A THREE SPEED PREMIER.** This model has a new design dropped frame, permitting the removal of the cylinder without disturbing the crankcase, also Druid spring forks.



Clutch toggle actuating mechanism on the new change-speed Premier.

jecting end of the layshaft, and thus the starting handle is considerably geared up to the engine, making starting up easy. The standard gear ratios are  $4\frac{1}{2}$  and  $8\frac{1}{2}$  to 1, but by altering the adjustable pulley a low gear of 12 to 1 can be obtained. The operating lever for the gears is placed in a convenient position on the top tube. In future the chain drive will be entirely enclosed in an oiltight aluminium casing, part of which will be cast integral with the crank chamber.



## In North Wales on a 4 h.p. Sidecar.

**W**E recently spent a very interesting and enjoyable week's holiday driving a 4 h.p. Singer sidecar combination round the Wye Valley and North Wales. The outward journey was from Coventry *via* Ross, Hereford, Kington, Rhayader to Aberystwyth, along the coast to Aberavon, back to Dolgelly *via* Aberystwyth, Tal-y-llyn, and Cross Foxes, then to Bala, Corwen, Oswestry, Bishop's Castle, Ludlow, Cleobury Mortimer, Kidderminster, and Stratford-on-Avon to Coventry.

### Wet Monday.

A few notes regarding the roads and incidents of the route may be of interest to readers, also our experiences with the machine may be a guide to prospective purchasers of sidecar combinations. The second day was the never-to-be-forgotten "wet Monday" when Norwich was flooded out. The sidecar being stabled in a fine big coach house with cement floor and plenty of light, opportunity was taken to thoroughly overhaul it, not that it needed it, but it was something to do. How continuously it rained from morning till night! Many lanes in the neighbourhood of Ross were flooded, and one enterprising baker who endeavoured to reach his customers with horse and cart had to turn back when the water came up to the shafts.

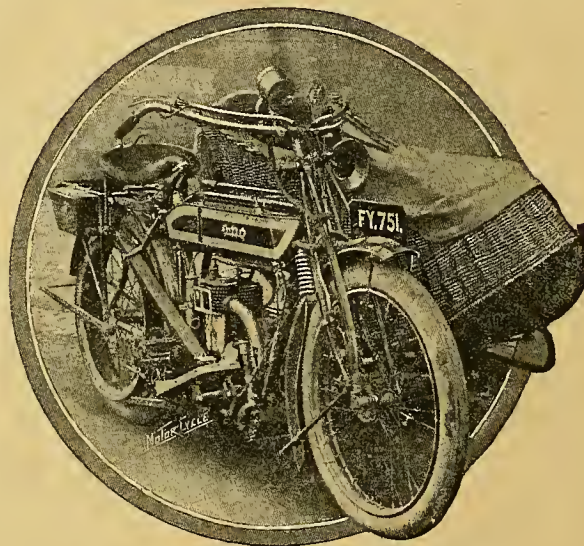
Next day (Tuesday) was beautifully fine, and the run through the Pass of Plinlimmon was most enjoyable. The road surface, except in the neighbourhood of Pen-y-bont and Llangurig, was good. On the road to Devil's Bridge the little stream which crosses the road just beyond Castel Dyffryn was, owing to the rain, converted to a wide swift flowing torrent about eighteen inches deep in the centre. It was not worth wetting engine and magneto to get through this, as the bridge at Pont-Erwyd was only a mile or two further on. The road from Devil's Bridge to Aberystwyth is good, because visitors to the falls usually arrive by rail, but Aberystwyth to Aberavon is a Great Western motor 'bus route, and the surface of the road is execrable as can be imagined. The little port of Aberavon, once of far greater importance than it now is, is specially worthy of a visit.

Thursday's ride included the Corris Pass and the ascent to Cross Foxes from Tal-y-llyn. Both these climbs were easily negotiated on the low speed of  $8\frac{1}{2}$  to 1 with a combined weight of 23 stones—passengers and luggage. Chars-à-bancs run over this road and the surface in places has been badly broken up owing to the heavy traffic, for which the present road surface is quite unsuitable.

The mountain road from Dolgelly to Bala, especially for the first ten or twelve miles, was particularly lumpy, but it improved from Bala to Corwen. Just beyond Bala the road forks: both lead to Corwen, but the right hand is the better of the two. The main Holyhead Road from Corwen to Llangollen was two or three weeks ago in a very bad state. The pot-holes were filled up with loose flints which were scattered in every direction by passing traffic, but, of course, a light sidecar does not scatter the stones, and it is a very difficult matter to dodge these pot-holes, as they are so numerous and dotted about the road.

### A Good Route to Wales.

Friday's run home through Oswestry to Bishop's Castle was without further incident. This is a splendid road either in or out of Mid-Wales. The surface is far better than the Holyhead Road, and the hills are not severe. In addition, the scenery between Welshpool and Bishop's Castle and on to Ludlow is infinitely prettier than the Holyhead Road between Llangollen and Shrewsbury. Between Welshpool and Bishop's Castle the road is a little difficult to find—all signposts apparently point to Shrewsbury, and in Montgomery there are signposts at the cross-roads pointing to every place but Bishop's Castle and Ludlow. As a real matter of fact, the road does not go into Bishop's Castle, but it passes very



The two-speed 4 h.p. Singer sidecar combination.

close to it. As the route is a through one, and one of the best from the Midlands to Mid-Wales, it is surprising it is not better signposted.

At Ludlow we heard that the water was out near Tenbury, and were strongly advised to travel *via* Cleobury-Mortimer.

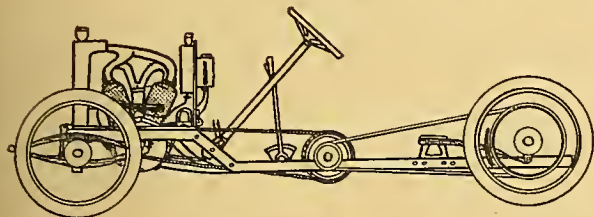
Never having ridden from Ludlow to Cleobury, the long uphill grind to the summit of the Clee Hill came as rather a surprise. However, the Singer combination tackled it successfully, and had it not been for a flock of sheep right across the road within 100 yards of the summit it would have been a non-stop.

Incidentally we may mention that the 4 h.p. Singer sidecar is a machine constructed on sound lines, with single-cylinder engine of  $88 \times 88$  mm., and on this tour no adjustments were required beyond those usually undertaken by tourists who wish to keep their machine in good running order while *en route*. A leaky petrol tank on the last day was the only *contretemps*.

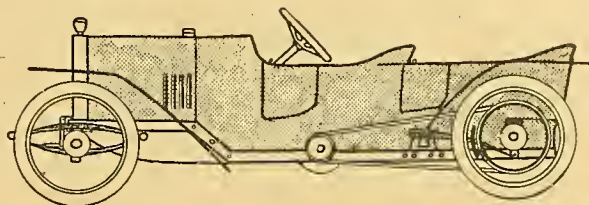
Taking everything into consideration, we found the machine a reliable touring mount, and the air tubes of the Pedley tyres, a set of which were fitted to the bicycle, were never seen. The  $2\frac{1}{2}$  in. back tyre looks as good to-day as when the tour was started.



# CYCLECAR DESIGNS.



Chassis of the Roulette Cyclecar.



La Roulette tandem seated cyclecar.

## An Underslung Model.

THE above line sketches are of a new French cyclecar with underslung frame. The pressed steel frame is of channel section, and the front and back axles are steel tubes. The wheelbase is 7ft. 4in., and the track 3ft. 3in. Wire spoked wheels 650 x 60 mm. (26in. x 2½in.) are used, and ring ball bearings are fitted on the axles. The front suspension consists of double springs, which ensure very comfortable riding. The engine is a twin V-type 8-10 h.p., 85 mm. x 95 mm., with natural water circulation, vertical tube radiator, automatic carburetter, magneto ignition, and

## The Super Cyclecar.

A week or two ago we published an illustration of a useful looking cyclecar, the Super, and we take the present opportunity of giving a few details about this interesting little machine, which is being placed on the British market by E. Jozot, 59-61, New Oxford Street, W.C. Three features deserve particular attention. Firstly, it is designed to be steered and driven from the front seat; secondly, a water-cooled engine is used; and, thirdly, the steering is positive by rods, no wires being used.

The two cylinders of the V-type 8-10 h.p. Anzani engine measure 75 mm. x 120

mm., and are water-cooled by thermosiphon circulation in conjunction with a small tube radiator, and a Clandel Hobson carburetter is used.

From the engine a chain transmits the power to a countershaft, whence from expanding pulleys on each side belts drive rims on the back wheels. The gear ratio of these pulleys is varied by a hand lever working transversely,

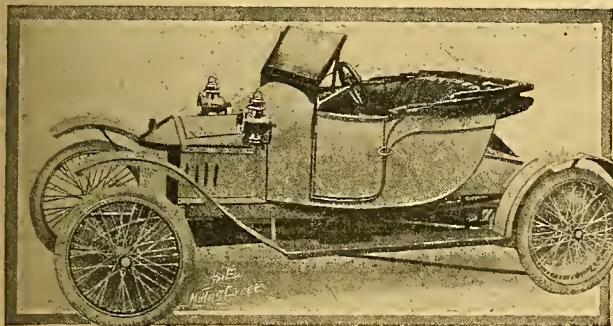
and to allow for the tightening or loosening of the belt as the gear is raised or

lowered, the back axle is secured to the ends of the back springs, which swing at their front ends on shackles, and at the centres are secured to arms by a rocking shaft that is inter-worked with the pulley expansion mechanism. To obtain chain adjustment, the engine setting is so arranged that the complete engine can be moved slightly backwards and forwards by a screw mechanism.

The petrol tank, placed at the top of the driver's seat-back, holds three gallons of petrol, and, while well out of the way, is very accessible. The writer spent a most interesting afternoon on one of these cars, which, while it had good acceleration and speed capacities, showed itself a wonderfully handy vehicle in traffic, the action of the brakes being particularly effective, not only in their powerful effect, but in the total absence of sideslip they caused. The hammock seats too proved exceedingly comfortable, and the body, which affords a very strong form of construction, also offers splendid shelter from the wind. At the moderate price asked, this vehicle ought to meet with instant success.

## A Cyclecar Wicker Body.

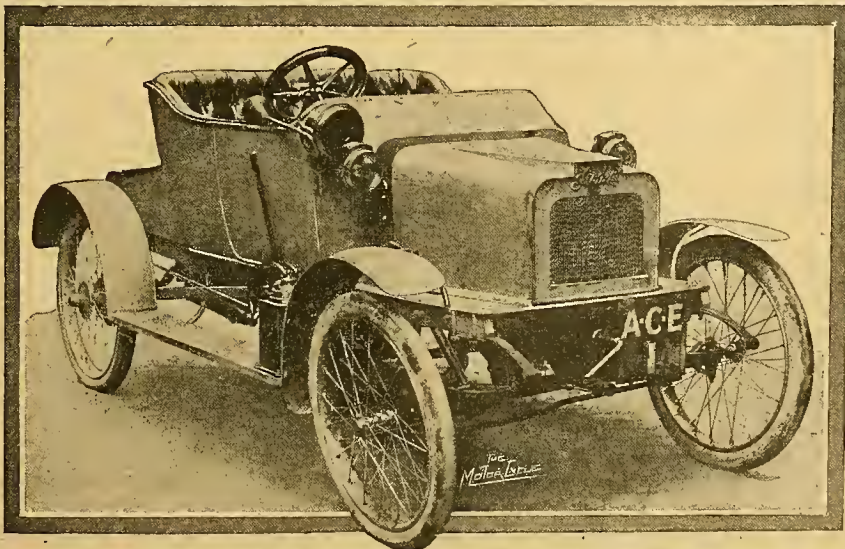
Thos. Mackenzie, of Bath Passage, Birmingham, is manufacturing a neat side-by-side two-seated cyclecar body. It is entirely carried out in basket work, and weighs only half a hundredweight. In spite of this light weight it is very rigid, and in view of the present popularity of cyclecars its future seems assured.



Side view of the Alvechurch cyclecar one of two new models made by Messrs. Dunkley of Alvechurch.

is started by means of a handle in front. The transmission is by chain, the constant tension of which is secured by a movable transverse counter-shaft. Three brakes are provided, one operated by pedal and two by hand lever. The rear brakes are on the lines of the old Bollée and Wolseley cars, viz., the wheels and axle are moved towards the fixed brake blocks. The accelerator is controlled by both foot and hand; the first is used for town driving. A pedal controls the clutch, one brake, and also alters the tension of the belts; finally, the same pedal moves the back axle forward until the brake drums meet the brake blocks on the frame. The body is furnished with a seat for the driver in front, and either one or two rear seats. If the driver's seat be at the back the two passenger seats are placed forward. The passengers' seats can also be placed side by side in front of or behind the driver. The total weight of this cyclecar, which is called La Roulette, is 3 cwt. 3 qrs. 20 lbs., and it is made by Monsieur Mazette, 45, Rue du Chemin de Fer à Courbevoie (Seine), France.

The French are particularly smart in designing these light belt-driven cyclecars, and there are a number on the road in the neighbourhood of Paris which have not yet been seen in this country.



Latest model of the 8 h.p. Arden cyclecar which has a new flush sided body, the magneto arranged above the cylinders, twenty-eight inch wheels, and other less important improvements.



## ABOUT TYRES.

By B. H. DAVIES.

I WANT to lay before economically-minded readers two or three considerations about tyres which several seasons of experimenting have impressed upon me. The first is the fact that costly tyres are the most economical in the long run. Most manufacturers fit as standard a light 26in.  $\times$  2¼in. type, which is listed at about 35s. per cover. These covers are so thin that they puncture very frequently on the back wheel; a pin, a tack, a bit of wire goes clean through, and stoppages are fairly numerous. Further, in hard go-anywhere work they sustain gashes; a sharp stone, a piece of glass, a large nail, a heel-iron, a sharp edge on a tramline or a level crossing, will cut the cover right through. These gashes do not admit of any lasting repair. They can be faked by inserting a gaiter, by internal patching, and the like, but the first gash sounds the knell of the cover. The rip extends, water enters and rots the fabric adjacent to the cut, and the tyre ceases to be trustworthy. If it be kept on the wheel there is danger of trouble at every succeeding mile. My experience with these tyres is that they are well enough on a front wheel, but that 1,000 miles about represents their average life on the driving wheel of a solo 3½ h.p.

### Heavy Covers.

Should the rider so elect, he can order his machine with a heavy cover costing upwards of 50s. on the driving wheel. My experience of such covers is that their average life on the back wheel of a 3½ h.p. solo is not less than 3,000 miles, and with good fortune they may wear for 4,000 miles. During this period they resist all small puncturing instruments, and only large nails find entry to the tube. It is no uncommon thing for such a cover to remain free from puncture for 2,000 miles, which is double the total life of most standard covers. In my experience the 50s. cover should wear, say, 3,500 miles, with, say, four punctures, whereas the 35s. cover wears 1,000 miles, with six punctures. Tabulating the contrast, I should estimate tyre experiences as follows:

Distance, 4,000 miles.

Four light standard covers, twenty-four punctures, three wheel removals—£7.

One extra heavy cover, four punctures, no wheel removals—£2 10s.

### The Question of a Non-skid.

In this connection a second point is vital. The all-weather rider dare not travel on plain treads. Heavy covers are made by some firms with treads excavated in very shallow corrugations. I have at this moment on both wheels of my 3½ h.p. machine a pair of strong and expensive tyres with treads consisting of shallow circumferential grooves. These grooves made admirable non-skids when the tyres were new. The covers have done 1,000 miles, and so far as walls and casing are concerned, they are equal to new, and promise perhaps 3,000 miles further running. But they have already ceased to be non-skids. The back tread is worn perfectly smooth, and my machine skids dangerously on wood paving lightly filmed with grease. The ribs have almost

vanished from the front tyre, and though it still retains slight non-skidding qualities it does not grip enough to correct the gyrations of the back tyre. There are two or three heavy covers on the market which are so deeply corrugated that they act as non-skids for upwards of 3,000 miles. Tyres of this design represent the maximum of economy and satisfaction. Shallow-grooved tyres of heavy construction are only fractionally more economical than the light standard types, since after 1,000 miles work they demand a fresh non-skid tread vulcanised on to the casing.

### Detachable Tubes.

My third point is the value of butt-ended tubes. I am not thinking of the relief from backache, derived from being able to take the tube out and repair it without stooping to the ground level. I find that sooner or later I send all my endless tubes away to be converted into butt-enders. Here is the history of two endless tubes supplied to me this year:

No. 1. During a competition this tube developed a small leak. I never had the chance to test it with water, and grew tired of blowing it up every fifty miles. Finally I cut it out and inserted my butted spare; I found the leak in water, and sent the tube away to be butted. This trouble would have been avoided if a butted tube had been originally purchased, and I should have saved 2s. on the job as well.

No. 2. A second tube behaved similarly, and was cut out. When tested in water I found two minute blowholes, both situated within quarter of an inch of the edge of an old patch. I should have saved another 2s. had I bought a butt-ender originally.



F. Jones, of Liverpool, with his 3½ h.p. Bradbury. The dog jumps on the back of the carrier every morning and goes to business with his master. At night he returns in the same manner and always looks for the chance of a ride during the day. The dog is not in any way enticed on to his insecure seat.

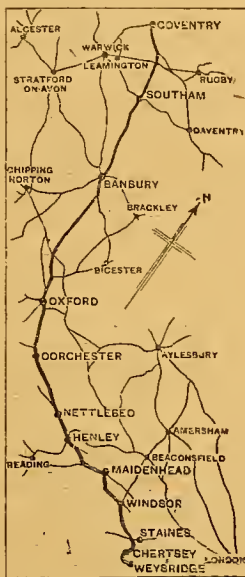


## Birmingham to Coventry and Brooklands.

**M**OTOR cyclists in the Midlands are constantly riding to and from Brooklands track either to compete in races or to witness others taking part in the numerous events which are held on this famous motodrome. I am aware that almost every rider has a pet route of his own, but having found the one described below better than others I have traversed. I have sketched a map of the course followed and append a description, which may interest others. The following may be improved upon, but will be found free from traffic and ten-mile limits, good surface, and fairly easy to find. Distance about 100 miles.

Coventry, Banbury, and Oxford are too well-known to require description. Out over Magdalen Bridge (Oxford) and Iffley Road. Through Nuneham and old-world Dorchester, and on to Benson, where take a very sharp scissors turn right. It is much sharper than a hairpin, and may easily be overshot. Then over Nettlebed, with the well-known golf links, and shoot down into Henley, leaving Arms Hill a few miles to the left.

Cross the Thames and up White Hill. At the top ignore the Royal Society for Prevention of Cruelty to Animals' notice board, and keep straight on over a picturesque and undulating road with many blind corners, where "dead slow" is only judicious. Up over sporting hills and we run through Maidenhead Market, erstwhile beloved of the High Toby man, on to the Bath Road, and keep left for Maidenhead. As we trickle gently down the hill a ten-mile limit post heaves in sight. Almost immediately we turn right and



going under the railway bridge look out for the Windsor turn, left, after a long brick wall. This road has recently been re-made and has splendid surface. In the early morning time can be saved along here; later in the day it is advisable to move circumspectly. Soon Windsor Castle towers in the distance, the last few hundred yards through the meanest of mean streets, which we wonder are tolerated so near a Royal residence. - A sharp turn right and swinging round the castle on a steep hill laid with large but fairly smooth stone setts, we cut across Long Walk. Before long we see the Thames, and a signpost—Egham and Staines Except at High Water—so, keeping right up a long rough hill with a very loose surface, we come out on a pleasant common, and keeping left are soon running down the hill into Egham. The turn right for Thorpe should be enquired for. The twisty and bad surface gravel road is well signposted. Running through the village of Chertsey, we turn sharp right for Weybridge, and are soon riding up the hill towards the track.

When the river is normal keep along the towpath at the high water post. A romantic run past Runnymede and Magna Charta Island brings one out on the Southampton Road a mile out of Staines. Turn right at the bridge and right again down Chertsey Lane—very loose or deeply mired according to the weather, and you pass through Chertsey main street and join the previous route.

On a fine day it is a jolly run, the riverside view being a big change for the Midlands rider. It should be just possible, by making an early start, to get there and back in the day and see the racing, but rather strenuous.

There are, of course, many other ways, but they are anything up to twenty miles further. The main Oxford-London Road should be avoided, as from Wycombe to Uxbridge it is bad surface, towny, and there are ten-mile limits. I have also tried the Holyhead Road to St. Albans, but the suburban roads through Watford, Rickmansworth, etc., are very slow and tiresome.

V.A.H



The winning Bath Motor Cycle Club team in the inter-club trial held recently between this club and the Bristol M.C.C.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### Cornering in Cyclecars.

Sir,—If "Ixion" has still any doubts about cornering on cyclecars, we shall be very glad to give him a trial on a G.N. that will entirely convince him. We will guarantee that we will take him or anyone else in doubt round the worst hairpin he can find at a far greater speed than any motor bicycle will take the corner. "G.N." LTD.

#### Road Shocks.

Sir,—Being a constant reader of your paper I have gained much information therefrom, but I have failed to notice any reference to inconvenience to motor cyclists by reason of "road shock" caused by uneven roads. To me this is the chief drawback to motor cycling. I find that travelling at a fair speed I receive so many bumps and jars that after about thirty or forty miles I have had about enough of it. My machine is a new one—2½ h.p., twin-cylinder, two-speed, and one of the best on the market. I will be thankful to any of your readers who can advise me how to obviate the discomfort I complain of, either by means of saddle or shock absorber or both. SENEX.

#### Warning Signs.

Sir,—I was interested to read the article on "Warning Signs." I have frequently noticed how useless some of them appear to be.

Some months ago I was out for a ride and passed several triangles which seemed out of place; then, when passing another, I nearly came to grief, as the road turned to the left and practically doubled back on itself. As it was, I just got round, but if anything had been coming the opposite way, I should most certainly have collided with it.

During the same ride, if I remember rightly, I came upon some rather similar corners which had no sign at all.

R. A. BATTSON.

#### Petrol Consumption.

Sir,—I believe there was a discussion in *The Motor Cycle* a short while ago about the mileages made by various motor cycles on a gallon of petrol.

It may be of interest to your readers that in August last I left Cardiff with one gallon of petrol in my tank for Fishguard. At Neath I missed the correct road and managed to wander round through Pontardawe and Ammanford to Llandilo. From here I used the road to Carmarthen, through Newcastle Emlyn, Cardigan, Newport, and so to Fishguard. Without refilling here, or having refilled at any point in the run, I returned to Newport, Pem., and even then had a fraction left in the tank. According to Bacon's map this makes up 130 miles. My machine is a 3½ h.p. Triumph, and that day I used a .032 jet. GETHIN DAVIES.

#### The Cyclecar Nothing New.

Sir,—In your issue of the 5th under the heading of "Another New Cyclecar" you gave a description of our new engine with illustration of complete car. It has occurred to us that those who have only recently become subscribers to your valuable paper may be misled into the belief that we have only just commenced manufacturing cyclecars, whereas you may remember that you published a description of our machines in 1910, from which we received about 700 enquiries. We shall be glad if you will publish this to prevent any possible misunderstandings. G.N., LTD.

#### Belt and Chain Transmission.

Sir,—I have followed with great interest the recent correspondence of chain and belt drive. Mr. Wyatt's experiences fill me with alarm, as I am anxious to take a machine out to India, which will not give me the trouble he has experienced with a belt drive.

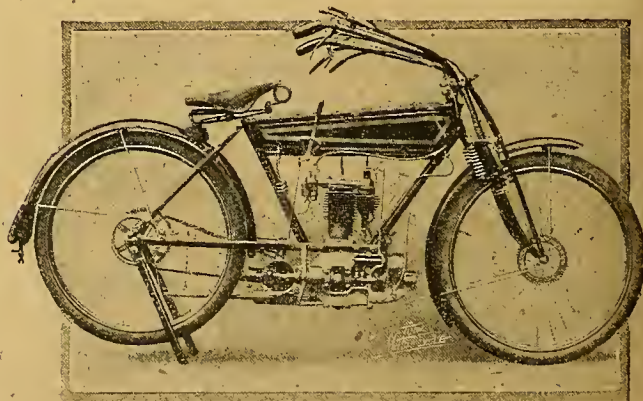
Would a shaft drive be the best for India? An officer at this station (Tralee, Co. Kerry) has a F.N. (shaft drive) which he used for five years abroad without a day's trouble on this score. NOVICE.

Sir,—Re Mr. E. K. Wyatt's letter in your issue of the 5th inst., regarding belt-driven machines.

I have owned seven machines, all belt-driven, and have never experienced any trouble with them. My latest is an 8 h.p. Zenith with Canoelet sidecar, total weight with passenger and self 6 cwt, without luggage. On August 13th we rode to Wetherby from London, thence on successive days to Alnwick, Edinburgh, Ambleside, Chester, Stony Stratford, and back to London. Although it rained for three days I had no sign of belt slip, and during the whole journey broke one fastener only. This I cured by using an Amac. We climbed Kirkstone Pass in pouring rain with full load. The belt used was the 1in. round top Dunlop, the total mileage of which is 1,566. W.C.K.

Sir,—I feel sure that there must be many motor cyclists like myself who have not had such unfortunate experiences with our belts as our friend Mr. C. K. Wyatt. Undoubtedly the method of driving has a lot to do with the life of a belt in the same way that it affects the tyres, the strains having to be put upon the belt before being transmitted to the road via the tyres. Now, I am twelve stones, and ride a machine that scales a little above the average 3½ h.p. standard weight, but up to the present belt troubles have been too slight to worry me.

At the beginning of this year I purchased my present mount second-hand, and on it was fitted a 3in. Whittle belt, with which I had not had any previous experience. This belt had been in use some time before the machine was sold to me, and, although I have done over 1,000 miles on it (in-



A NEW MODEL OF NEAT DESIGN.

The 3½ h.p. Diamond. This machine, as will be seen, has a two-speed gear, overhead mechanically-operated inlet valve, and chain transmission. It is being marketed by the Diamond Engineering Co., Wolverhampton.



cluding some good hills and speeds), the wear is practically nil, and I have never yet been held up with belt trouble.

I take it down every 300 or 400 miles, and apply (after cleaning) the Whittle belt dressing. This operation takes about one hour, and if performed in the evening the belt is ready by the next morning, and I guarantee that there will never be any belt slip if this course is pursued. Before Mr. Wyatt goes in for a plain chain drive machine, I suggest he tries a leather belt, which, given proper attention and fair usage will ensure a pleasant run, free from this trouble.

CHAS. G. HUNTLEY.

#### Motor Cycle Taxation by Horse-power Rating.

Sir,—Seeing the paragraph in the last issue regarding taxation, I feel led to protest against such a proposal as being unfair and out of all proportion. I ride a 7 h.p. motor cycle (and sidecar occasionally with wife and child). In spite of the arguments *re* horse-power rating, it is obvious to me that a two or three-wheeled motor cycle vehicle does not cause the wear and tear on the road as a small motor car, even though the horse-power of the former may be slightly higher. Then again, it must not be forgotten that there has been an increased demand for higher powered motor cycles the last two seasons because of the increasing popularity of the sidecar, and the necessity for higher power is obviously greater in the case of a motor cyclist having a wife and small family. If they are to share in the pleasure, as they naturally should, it must be borne in mind that he is not only put to more expense in having to procure a machine of increased horse-power, but that he is also contributing much more to the national exchequer by the tax on his petrol.

I cannot see anything but selfishness behind the above proposal, and—one thing I am sure it would most certainly do if it were adopted as law—it would deprive my wife and child of what is to them one of the best means of enjoyment and adjuncts to health, for I certainly should be compelled to sell my present mount and purchase a lower powered one, thus having to do away with the sidecar, for I could not stand a three guinea tax.

I trust no time or opportunity will be lost by those concerned in lodging an emphatic protest against what would be nothing less than a most unjust and wicked imposition.

T. ENDERBY.

[The members of the Motor Cycle Manufacturers' Union are contemplating calling a meeting to consider the question of protesting to the Treasury against the proposals of the committee.—Ed.]

#### Sidecar Design.

Sir,—I shall feel obliged if you will allow me a few lines in the interests of my fellow sidecarists to call attention to a, to my mind, unsatisfactory kind of fitting in use, I believe, with many kinds of sidecars, and not entirely confined to the cheap variety either. I refer to the telescopic fitting which slides into a split tube, which is secured at the end by a metal band, tightened, to close the tube, by a bolt and nut.

Unfortunately, I write from experience of the defects of this method of adjustment, having sustained a breakdown recently which might have had very serious consequences. As it was, the passenger (my father) was rendered unconscious, and is still suffering from severe injuries to the head and



J. I. E. Emerson, of Hull, who scored a runaway win in the Brooklands 150 miles T.T. race. He rode a long-stroke Norton, and annexed three world's records during the ride. His average speed was nearly 64 m.p.h.

hands, while the damage to the machine will certainly cost not much less than a £5 note to make good.

In my own case, and probably in others, it appears that the metal band becomes somewhat bent after being used a few times, with the result that the ends of the band meet without thoroughly binding the tube underneath it, and consequently there is a liability for the telescopic tube to slide either in or out, especially when any strain, such as turning a corner, is put upon it.

In the accident mentioned, the back connection came right out and let down the sidecar, causing a similar "list" on the cycle in the opposite direction, which prevented steering, and as a consequence it mounted the pavement, struck a tree and a wall, and threw out both passenger and driver, with the result previously stated.

For the future I shall use a non-adjustable connection (an adjustable fitting being unnecessary after the machines have once been put in true alignment), and if a telescopic fitting be used it will be secured by a screwed bolt passing through both inner and outer tubes and locked by a nut on the other side.

Sidecarists using the first-mentioned type of fittings will do well to see that they are quite firm. Even then, after my experience with them, I would not like to guarantee safety, the connections on my machine having been tested thoroughly only just before starting out.

WALTER S. LEWIS.

[We have always found the clip in question hold well if properly screwed up, but there are clips and clips. Perhaps our correspondent has a poorly made one. His remarks might, and do, apply equally to handle-bar clips, but one seldom hears any complaints regarding well-made ones.—Ed.]



A group of members of the Cowbridge and District M.C. (Glam.) taken on the occasion of the recent hill climb.



### What is a Cyclecar?

Sir,—It is really extraordinary what a distorted idea some manufacturers have of a cyclecar. They produce a vehicle that resembles a 40 h.p. Rolls-Royce viewed through the wrong end of a telescope, and dump it on the market as a cyclecar!

The very presence of the adjective "cycle" seems to me to demand that the car be built on cycle lines, therefore I hold that the machine should have a tubular frame, four cycle wheels, and usually an air-cooled engine, which should not exceed 8 h.p. The nature of power transmission should be such that a differential gear is excluded, and, above all, the price of the complete turnout must be kept lower.

The present tendency to overdevelop the cyclecar will inevitably cause its disappearance, and that would be a pity.

CHAS. H. GOULDEN.

[Most people hold different views on the subject, but, while the R.A.C. and A.C.U. definition remains what it is, a cyclecar is any vehicle weighing under 7 cwt. unladen; many alleged cyclecars weigh more. Our correspondent seems to lose sight of the fact that some manufacturers prefer to build their vehicles on well-tried lines, others prefer to experiment. The whole question resolves itself into one of price, and time alone will show the correct lines to be followed. In the meantime, he who pays the highest price will probably get the best article.—Ed.]

Sir,—In answer to Mr. Rowland's letter of September 12th, I see no reason why the Singer machine should not be termed a cyclecar. One can make a cyclecar either by working backwards from a car or else forward from a motor cycle. It will be a case of the survival of the fittest, and that type will succeed which best fits the demand. Until then let all machines falling within the A.C.U. definition have a fair fight, with no backbiting from those who think they have already solved the problem to the general satisfaction of the public.

A. T. GRANGE.

### Combined Belt and Chain Drive.

Sir,—As one who has consistently advocated the change-speed gear in the counter-shaft, chains to the gear box, and belt to the back wheel, I am beginning to think that the matter requires no more proof. I have from the beginning urged this upon Messrs. Douglas, and the proof of the pudding is in the eating. For over 20,000 miles I have driven this combination, in which time I have used four belts, including that now in use. The last, a Dunlop, has been on since February last, and is still good. Owing to changes in the gauge of chains I have not run any one chain over 5,000 miles, but never had to change a chain because it was worn out. My belt and chain are, however, efficiently mudguarded. This is the secret. Chains open to the weather are equally impossible.

Now, the complete chain drive necessitates some form of shock absorber. The rubber belt fills the bill better than any other form and with less loss of power. It is a spring as well as a slip; in fact, the slip part is negligible. I do not know who Mr. T. F. Maw is and what his experience of belt-cum-chain is. I only know that I use my machine day and night over roads, and lanes, and field tracks to the tune of about 10,000 miles per annum, and I am riding the same Douglas that I originally purchased from the firm in March, 1909. As a single-speed, belt-driven, with a cotton-reel pulley in the winter it was never perfectly reliable, but now with the combined chain-cum-belt I go anywhere and at any hour with ease and comfort to myself. Mr. Maw says we have not had a proper trial of chain drive. It has been fitted to my personal knowledge to motor bicycles for the last ten years and shaft drive for the last six. I will make a shrewd forecast that Olympia will show the astonished motor-cycling public what the experts think of the matter now.

CHARLES L. PATTERSON, M.B., M.R.C.S.

### Tyres.

Sir,—Re letter on tyres by one of the "Roadside Solutioners" in your issue of September 5th, I wish to give you my experience, and I am only a novice, this being my first year at motor cycling. I bought a Clyno and sidecar, and my total mileage up to now is 3,474, and I have not had a puncture. I have been over some of the worst roads in Devonshire, after doing over 2,900 miles—the road from Lynton to Simonsbath and, Challacombe, until you meet the main road to Ilfracombe, being particularly bad.

I had a 26 x 2½ in. Kempshall non-skid fitted to the driving wheel, and the usual Palmer cord tyres which the Clyno fit as standard on front and sidecar wheels. I decided to enter the Birmingham M.C.C.'s run to Carlisle and back, and at 3,197 miles I took the Kempshall off the back wheel and have fitted another of the same make, and for safety I took the Palmer cord off the sidecar wheel, and have fitted a 26 x 2½ in. Pedley, of which I have heard some excellent accounts from private owners.

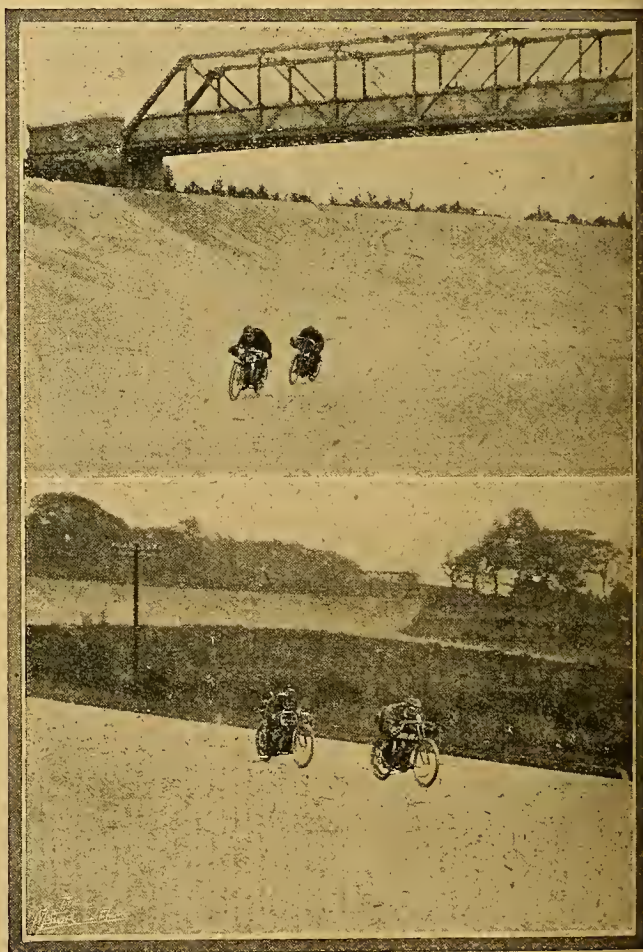
Of course, I know I am fortunate in not getting a puncture, but no doubt the tyres have had a little to do with it, and I agree with "Roadside Solutioner" that most motorists are quite willing to pay a good price for a good tyre, and I shall have a 26 x 3 in. tyre fitted to my driving wheel when I require another; and also tyres would be all the better if made stronger at the bead. The Kempshall I have taken off I should think would do another three to four hundred miles, and the Palmer will do more.

R. HADDOCK.

### Wayside Petrol Vendors.

Sir,—One day while being supplied with some motor spirit by a small wayside dealer in one of our villages I was very impressed with his lament: "So very few cyclists ever call for petrol that I sometimes think whether it is worth while taking the trouble to supply it in less quantities than a whole tin." Now, sir, if we only exercised a little thought, it is quite patent that these small dealers are a great convenience and should be patronised as often as is possible, provided that the charge is the ordinary market one.

MOTORIST.



SCENES DURING THE BROOKLANDS T.T. RACES.

H. Mason (Nutzap) and A. B. T. Bashall (Douglas) passing under the members' bridge. S. L. Bailey (Douglas) using S. Wright (Humber) as a wind screen. They rode for many laps in this order.



# THE Douglas

VIBRATIONLESS LIGHTWEIGHT

Distinguishes  
itself  
at  
Brooklands.

"The Motor Cycle" says:  
"Bailey (Douglas) was left  
without a rival."



S. L. BAILEY ON A DOUGLAS.

Breaks Records  
at  
Brooklands.

"The Motor Cycle" says:  
"Bailey's Douglas continued  
to run most consistently. He  
finished a winner by two  
complete laps in the record  
time of 2h. 49m. 45s. Being  
informed that the three hours  
record was within his reach,  
he hastily refilled and was off  
again, and succeeded in cap-  
turing this record also."

WINNER OF THE

## Junior T.T. Race at Brooklands

ON SATURDAY, SEPTEMBER 14TH.

In this race the Douglas also secured

### the 150 Miles Record

(Time 2hrs. 49m. 45s.)

### and the Three Hours' Record

in Class B. (Distance 159 miles 990 yards.)

Torbay & District  
Open Hill Climb.

Douglas **FIRST** on Time  
in Lightweight Class, also  
**FIRST** on Time and Formula  
in Ladies' Class.

Leicester County  
M.C.C. Hill Climb.

Douglas **FIRST** on Time and  
**SECOND** on Formula  
in Lightweight Class.

MAY WE SEND YOU FULL DETAILS OF OUR MODELS?

## DOUGLAS BROS., Kingswood, BRISTOL

Telephone—No. 51.

Telegrams—"Douglas, Kingswood."

London—336, Goswell Road, E.C.



**1 HOUR**  
**2 HOURS**

## NEW RECORDS

were established at Brooklands on  
Sept. 20 by a Bedelia lubricated with

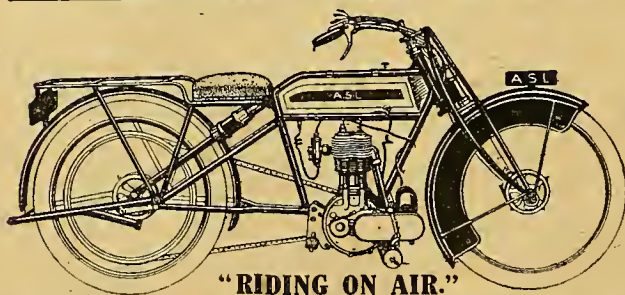
# WAKEFIELD CASTROL (REGD.)

**50 MILES**  
**100 MILES**

It broke the existing hour record and established new records for 50 miles, 100 miles, and 2 hours. Yet another instance of 'Castrol' superiority.

C. C. WAKEFIELD & CO., 27, CANNON ST., LONDON, E.C.

C.D.C.



"RIDING ON AIR."

### SOME RECENT SUCCESSES.

#### SIX DAYS' TRIALS.

The one A.S.L. entered  
GAINED MEDAL and BONUS MARKS  
for climbing Beggars' Roost.

Cumberland M.C.C. Speed Trials,  
A.S.L. FIRST.

**NO VIBRATION,  
MORE COMFORT,  
LESS WEAR:**

With the

# 'A.S.L.'

No jar or shock can possibly be experienced, therefore crystallisation of the steel parts cannot possibly set in, and greater durability is the result. The "A.S.L." is the easiest machine to manage and to ride, long spins being easy to undertake without any discomfort whatever.

See the new model with 26in wheel, improved frame, and girder forks. Let us post you our latest catalogue.

Head Office: A.S.L., Ltd., 3, Great Winchester St., London, E.C.

Tel.: "Infrequent, London." Phone: 1435, London Wall.  
Works—Corporation St., Stafford. London Showrooms:  
Gordon F. Peall and Co., 14a, Leicester Street,  
Leicester Square, W. Sole Agents for Manchester and  
District—Manchester Motor Exchange, 32, Downing  
Street, Ardwick. Sole Agent for Liverpool—British  
Cycle Manufacturing Co., 1 and 3, Berry St., Liverpool.  
Sole Agents for Birmingham—W. Goodwin and Co., Vic-  
toria Square, Birmingham.

C.D.C.



## THE MOTOR CYCLE IN THE ARMY MANŒUVRES

Again the value of the motor cyclist as a despatch rider and scout has been demonstrated, and universal praise has been accorded to the motor cyclist sections and their mounts. The pride and care with which the machines were prepared for the recent manœuvres is proved by the fact that several teams ran throughout the manœuvres without an involuntary stop. Sir John French (the Inspector General) personally complimented a number of the leaders on their valuable work.



Motor cyclists played an important part in the manœuvres. Our photographs show: (1) Red Cross men giving lemonade to a thirsty scout, who is astride a Premier machine. (2) Field telegraph office and general staff. The car is used for the telegraph and maps can be seen on the mudguards and wind screen, with officers awaiting news from a scout who has just arrived on his Torpedo-Precision. (3) On the battlefield. A group of scouts and despatch carriers' motor cycles in readiness for messages. (4) Early morning refreshments on the road. (5) Discussing the way the fight is going and by which route the enemy are coming. (6) An officer consulting the map as to the most probable way the invaders will advance, a motor cyclist scout having just arrived to report having sighted the enemy.



# Tandem and Sociable-seated Cyclecars.

A French and English production both with water-cooled engines.

## The Automobilette.

**T**HIS cyclecar, which is of French origin, is made in two patterns; one has a single-cylinder, the other a twin-cylinder engine. The chassis is very low and long, and is therefore very stable. The lightness is secured by doing away with gears and superfluous parts.

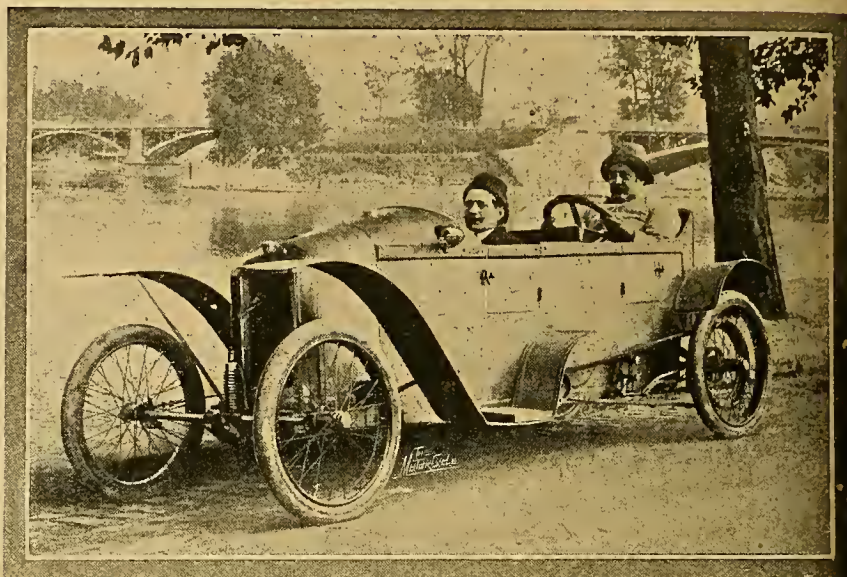
The chief aim in building these cyclecars was to use one organ for several purposes, and to make the frame very light and strong.

Water cooling has been adopted, not to obtain excessive speed, but a speed that would not decrease appreciably when climbing long hills. The change of speed is obtained by a variable pulley movement, giving three different speeds.

The Automobilette is to be guaranteed for one year. The chassis is of armoured wood, and tubular axles are used. The tyres are Michelin's 650 x 65 mm. The front is suspended on a long spiral spring, whilst laminated springs are used at the rear. The control is by aluminium steering wheel, and bobbin and cable. Transmission is first by Renold chain then to the rear wheels by belts. The brakes are four in number. Two actuated by pedals work on the wheel drums; two others, controlled by a lever, act on the rear pulleys. A Bosch magneto and Claudel automatic carburettor have been adopted. Lubrication in the single cylinder type is by drip feed, but the twin has forced lubrication. The weight complete is given by our Paris correspondent as 440 lbs. The single-cylinder type is rated at 6.8 h.p., bore and stroke 80 x 130 mm. The two-cylinder model is of 9 h.p., 70 x 130 mm. bore and stroke.

## The L.E.C.

A newcomer into the cyclecar class is the L.E.C., which is sold by the New Phonophone Telephone Co., 31, Budge Row, E.C., and is made throughout at the company's works at Southall. The



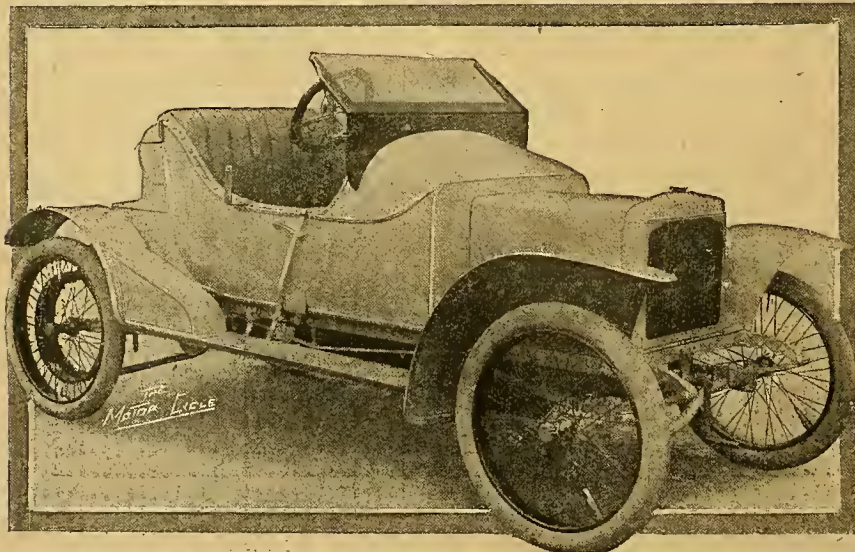
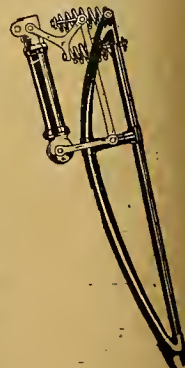
Automobilette, a French tandem seated cyclecar which is said to scale under 4 cwt.

engine is a two-cylinder, vertical, water-cooled, 80 x 108 mm., and the water pump and U.H. magneto are chain-driven. The radiator is of the multi-tubular type, and in external appearance resembles a Daimler. The carburettor is the Lukin, and the lubrication is on the gravity drip system, keeping a constant level in the crank chamber, the engine being lubricated entirely by splash. The clutch is of the leather-to-metal type, the clutchshaft being provided with the usual universal joints between it and the gear box. The latter is of the three-speed sliding type, the ratios being 4, 8, and 13 to 1. The gear box contains a differential, and

there are cross-shafts carrying pulleys, the final drive being by belts, which are partially protected by means of guards. This system, we understand, will be done away with in favour of a live axle. The belts are 1½ in., of Service make, and the frame is of channel steel, suspended on semi-elliptical springs in front and Lanchester type springs at the rear. The steering is by rack and pinion. 700 x 75 mm. tyres are fitted. The control is by hand throttle on the steering wheel. The magneto advance is on the dashboard. The brakes consist of two belt pulley brakes worked by the side lever, and the propeller-shaft brake by pedal. The coachwork is decidedly smart, and the body is of pleasing appearance. The petrol tank, which is cylindrical, is carried behind the back seats.

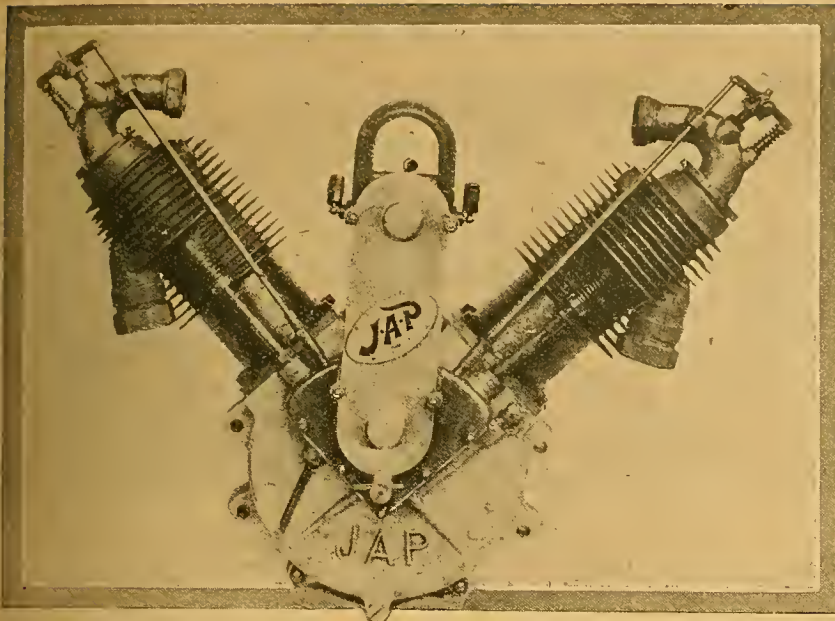
## A NEW SPRING FORK.

A spring fork has been invented and provisionally patented by Mr. A. Hayes, the special feature of which is that provision is made for absorbing both vertical and horizontal shocks, a separate spring being used for each purpose. If, however, a violent shock of any nature should be caused, both springs come into action at once. The fork is neat to look at, and weighs approximately the same as other spring forks on the market.



The L.E.C., a water-cooled engine cyclecar with a Daimler pattern radiator.

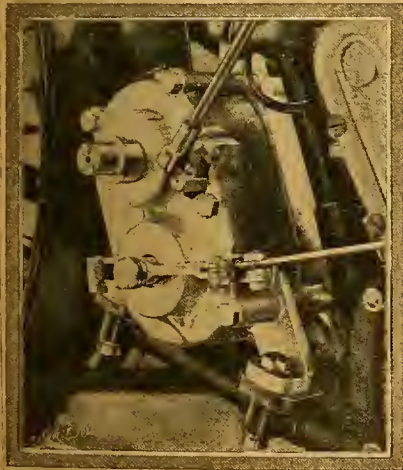




A 90° twin cylinder air-cooled J.A.P. Engine specially designed for cyclecars. The position and accessibility of the magneto will be noted.

### 90° J.A.P. Cyclecar Engine.

The photograph reproduced herewith is that of a new 90° J.A.P. engine, built specially for cyclecars. The principal feature about it is the overhead mechanically operated inlet valve placed over the exhaust and operated by a long tappet rod working through a lug cast on the inlet pipe; the rocker is carried on a bearing cast on the dome. The magneto is placed between the two cylinders and



Exterior view of the new Premier countershaft two-speed gear.

driven by chain. Strong double magnets are provided to enable easy starting without gearing up. The nominal horse-power is ten, but the engine gives considerably more on the brake. As most readers know, the 90° twin gives a better balance than a four-cylinder engine, so that the makers, J. A. Prestwich and Co., Tottenham, N.W., should experience a considerable demand for this engine from cyclecar-manufacturers.

### T.M.C. 1913 Developments.

We had recently an interesting talk with Mr. Kirschbaum, the managing director of the Wilkinson T.M.C. Co., Ltd., Oakley Works, Southfield Road, Acton, W., regarding the company's programme for 1913. Among the models to be taken up for next year will be a new cyclecar, fitted with the 7 h.p. T.M.C. engine, 60x75, which is fitted to the sidecar model. It will have three speeds and reverse, propeller-haft drive, and differential.

The latest pattern T.M.C., which, in future, will be sold only as a sidecar combination, has been slightly altered as regards the design of the back tank, and a new starting arrangement, consisting of a pull up handle attached to a rack which meshes with a free wheel on the main shaft, is fitted and works admirably. The Stewart-Precision carburetter is now

standard. The machine is fitted with a most comfortable sidecar, sprung in the same manner as the T.M.C. machine, on parallel leaf springs. We were given a short run on one of these machines, and could almost bring ourselves to believe we were seated in a high-class car. The engine runs without vibration, is capable of quick acceleration, and the riding is most luxurious. An improved honeycomb radiator is now fitted.

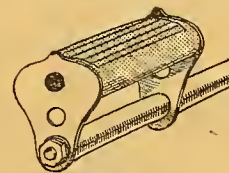
### The Wooller Two-stroke.

A new departure will be the taking up of the Wooller motor bicycle, an inter-



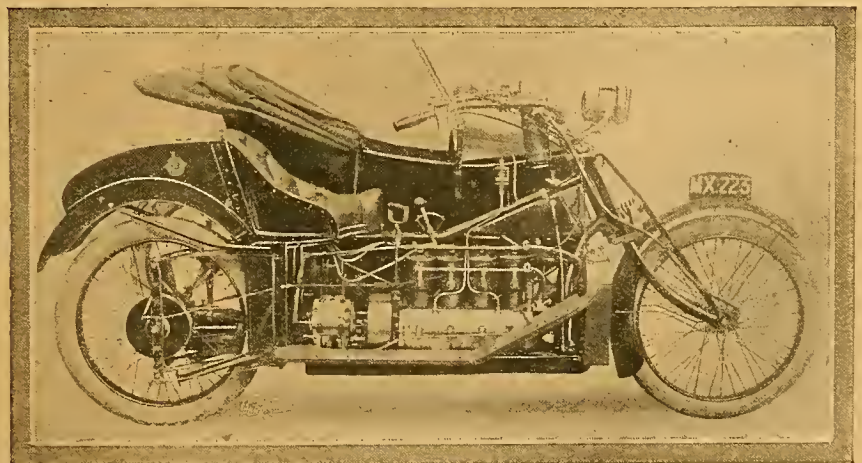
Phoenix sidecar chassis, showing telescopic luggage grid.

esting two-stroke machine which created a great deal of interest at the 1911 Motor Cycle Show. The present engine has a capacity of about 250 c.c., but the new model will be enlarged to 350 c.c. Since its appearance at the show the machine has not undergone any startling changes, except that a compression release valve has been fitted. The machine, it will be remembered, has a double-ended piston



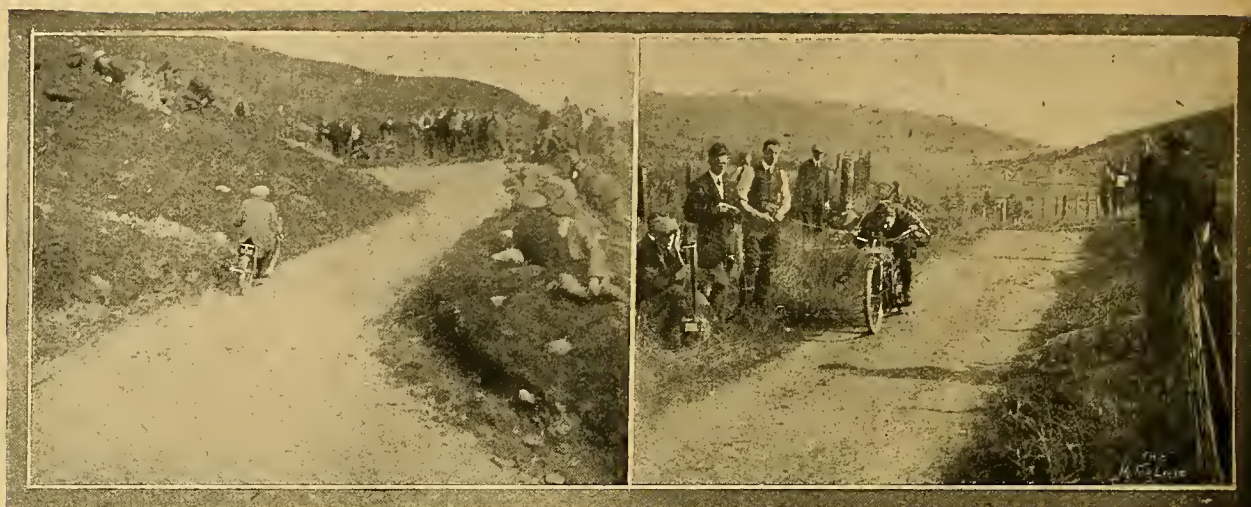
Adjustable footrests on the new Premier

and blank-ended cylinder. The gudgeon pin projects through slots in the cylinder walls, and carries at each end a connecting rod to the crankshaft. The lubrication is by oil pump, which throws jets of oil on the big ends and other working parts, while an outside pipe delivers the oil to the piston. The change-speed gear is of the expanding pulley type; one pedal expands the pulley and the other serves to contract it. Provision is made for taking up the slack in the belt.



The latest model four-cylinder T.M.C. sidecar combination which has a water-cooled engine.





## AMULREE HILL CLIMB, ORGANISED BY THE EDINBURGH &amp; DISTRICT M.C.

(Referred to on page 1070 of our last issue). 1.—A competitor between the bends. 2.—Breaking the thread controlling the electrical timing apparatus.

## RESULTS OF AMULREE HILL-CLIMB.

The following results of the above open hill-climb, held on the 16th inst., have just come to hand:

Class I. (novice handicap) was abandoned

CLASS II. (up to 350 c.c.).

Rider and machine.	Time.	Secs.	Fig. of merit.
1. A. H. Alexander (2½ Douglas) ...	76.8	...	3,051
2. A. U. R. Downie (2½ A.J.S.) ...	85.8	...	2,793
CLASS III. (handicap, 351 to 550 c.c.).			
1. A. H. Alexander (3½ Zenith) ...	66.8	...	2,927
2. A. F. Downie (3½ Ariel) ...	75.8	...	2,735
3. C. H. Macmillan (3½ Scott) ...	96.8	...	1,945
4. R. A. Macmillan (3½ Scott) ...	123.2	...	1,507
5. O. G. Braid (3½ Indian) ...	*121.0	...	1,356
6. — Dodds (3½ Singer) ...	*127.6	...	1,217

Class IV. (handicap, 551 c.c. and up) was abandoned.

CLASS V. (scratch, up to 550 c.c.).

1. A. H. Alexander (3½ Zenith) ...	66.6
2. O. G. Braid (3½ Indian) ...	67.8
3. A. F. Downie (3½ Ariel) ...	77.4
4. C. H. Macmillan (3½ Scott) ...	94.4
5. R. A. Macmillan (3½ Scott) ...	122.8
6. — Dodds (3½ Singer) ...	*131.8

CLASS VI. (unlimited scratch).

1. J. R. Alexander (7-9 Indian) ...	58.4
2. R. S. Morrison (5-6 Bat) ...	63.4
3. A. H. Alexander (3½ Zenith) ...	68.0
4. — Dodds (3½ Singer) ...	78.8

Class VII. (passenger handicap), result not decided.

CLASS VIII. (restarting test).

1. A. H. Alexander (3½ Zenith) ...	80.0
2. O. G. Braid (3½ Indian) ...	91.6
3. R. S. Morrison (5-6 Bat) ...	98.0
4. C. H. Macmillan (3½ Scott) ...	106.0
5. A. F. Downie (3½ Ariel) ...	110.0
6. C. McGregor (2½ Douglas) ...	119.4

\* These times include 45s. penalty for assisting machine.

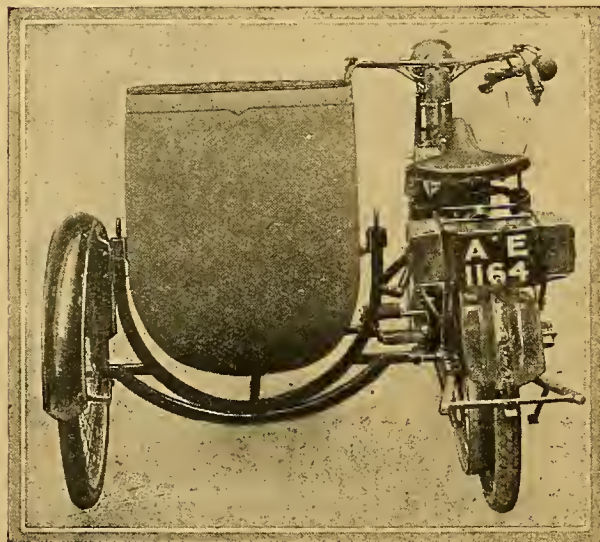
## BROOKLANDS MEETING on Saturday.

On Saturday next, the 28th inst., the Brooklands Automobile Racing Club has included a motor cycle race in its programme. The particulars and entries are as under:

2.25. The Twelfth Short Motor Cycle Race (a handicap). About 5½ miles. Prizes: £10, £5, and £3, or cups at option. For all classes of motor bicycles.

Bore and stroke

G. Roberts (1 cyl. Rudge) ...	...	85 × 88
R. L. Keller (1 Triumph) ...	...	85 × 88
G. E. Stanley (1 Singer) ...	...	85 × 88
J. Cocker (1 Singer) ...	...	85 × 88
J. A. Manners-Smith (1 Triumph) ...	...	85 × 88
H. H. Square (1 Robin-Minerva) ...	...	69 × 69
D. Lavender (1 Rudge) ...	...	85 × 88
B. C. Remington (2 Matchless) ...	...	90 × 77½
Sydney Hall (1 Rudge) ...	...	85 × 88
L. Hill (1 Rudge) ...	...	85 × 88
W. H. Elce (1 Rudge) ...	...	85 × 88
F. Bateman (1 Rudge) ...	...	85 × 88
W. Stanhope-Spencer (1 Rudge) ...	...	85 × 88
E. W. Russell (1 Rover) ...	...	85 × 88
A. G. Walker (1 Rudge) ...	...	85 × 88
Harry Martin (2. Martin) ...	...	76 × 55
Harry Martin (1 Martin) ...	...	85½ × 59½
F. A. McNab (2 Douglas) ...	...	60 × 60
F. H. Arnott (1 Rudge) ...	...	85 × 88
F. H. Arnott (2 J.A.P.) ...	...	90 × 77½
Clifford Pressland (1 Rudge) ...	...	85 × 88
S. F. Garrett (1 Green-Precision) ...	...	85 × 88
W. A. Jacobs (1 Singer) ...	...	69 × 80
S. L. Bailey (2 Douglas) ...	...	61 × 60
J. P. le Grand (1 Singer) ...	...	69 × 70



The Swan sidecar illustrated above has a frame of square section steel tube and is very strong and light. The body is suspended on coil springs. It is the product of the Midland Motor Co., Cowley Road, Oxford.



# OPEN 24 HOURS' TRIAL.

Birmingham to Carlisle and Back.

**Q**UITE a crowd assembled at the Birchfield Motor Works, near Perry Barr, on Friday evening last to watch the competitors start on their 400 miles run to Carlisle and back. Inside the garage the machines were arranged in rows in order of starting, and the competitors were busy with finishing touches, and putting on oilskins, gloves, etc., for though the night was fine there was a chill in the air reminiscent of winter.

Arriving in good time, we strolled round the competing machines, and though most of the preparations made for long distance competitions have become more or less common, there were a few interesting fittings to be seen. Fern had a very neat idea for fixing his generators, which consisted of a Lucas forked lamp bracket fixed to the down tube of his Humber, each fork of which supported a Powell and Hammer generator in the usual P. and H. manner. The fitting is so extremely neat and simple that it is a wonder that no one has thought of it before.

F. Hill faced the starter on an A.C. Sociable, but was not allowed to take part in the trial, as he was unable to procure a passenger. This was hard luck, as the performances of passenger machines are always watched with interest.

Woodhouse was riding a 4½ Regal-Precision fitted with the G.H. counter-shaft gear. He had attached to his machine a very novel sidecar, which is the production of Smith and Woodhouse. The frame of the sidecar, instead of being parallel to the ground, slopes upwards to the front frame fixing, thus avoiding a bent fixing tube and giving a good straight pull on the axle. The body fitted was very long and low, and the passenger lies almost flat. This sidecar has been designed for Brooklands.

Begley pointed out the extra heavy spring fork links fitted to his Hazlewood, which point will be standard on all the new models.

## The Start.

Punctually at 10 p.m. the doors of the garage were opened and Egginton (New Hudson sc.) and Wintle (Rollo) were sent off. The former stopped almost immediately, but got going again. From the sounds we should guess the trouble to have been a fouled plug.

There were eight non-starters, leaving a field of forty-six. Miss Hough started (No. 30), and was given a cheer as she glided away on her Scott sidecar. C. R. Collier had F. Whitworth as his passenger in the Matchless combination. Hugh Gibson (Bradbury and sc.), who was going through his own country, was thoroughly prepared for the run. R. G. Mundy was mounted on a new Rudge. The competitors were informed that there would be a check at the top of Shap and at Kendal on both outward and homeward runs. S. C. Perryman and Vernon Brook were both too busy with the organisation to take part in the trial, but their work was well repaid by the smartness with which the men were got away.

Trouble began early, for Woodhouse had the misfortune to break a chain a few miles from home. Unluckily the smash damaged his rear wheel, and he was unable to continue. Cocker (4 Singer sc.) suffered his usual hard luck and hit a bridge at Lancaster during the early hours of the morning, and though he and his passenger were not much hurt, his machine was effectively put *hors de combat*. Just before the ascent of Shap, Fenn's Armstrong gear control rod broke, the gear automatically went down to the low speed, and as he was travelling a fair pace at the time he was thrown forward on the tank, and the shock damaged his rear tyre. Many of the competitors chose routes of their own into Wigan, as there are several roads into the town. The Rollo, the only cyclecar in the trial, was reported to have valve trouble, and was seen being towed into Carlisle on return journey by a New Hudson sidecar outfit. Farmer's 2½ Calthorpe-Precision was going noticeably well, but unfortunately broke a valve and failed to get in to time. There were the usual crop of punctures, and Sheldon (Regal-Precision) retired at Preston on the outward trip for this reason, but rode home with the rest.

R. W. Duke (3½ Zenith) and H. J. Cox (2½ Forward) were the first pair to reach the finishing point, and arrived (as did all the survivors) covered with dust. Duke's machine was fitted with the new single lever control B. and B.

carburetter. Cooke (A.S.L.) reported timing trouble and a puncture.

Begley (3 Hazlewood) suffered his first puncture this year—a fine record for so constant a rider. Busby (Humber) was much troubled with punctures, and came in on a flat back tyre. Mundy, whose Rudge was still partly enclosed in its packing, had a no-trouble run, and his Steeastic tyres were untouched. Barnett (3½ Kynoch) was two hours late at Penrith, and so decided to retire.

Mogridge (3½ Mead-Precision) broke his exhaust lifter, but finished to time, driving on an extemporised fitting. Collier and Guest (Matchless sc.) had no-trouble runs, but Nott, who had ridden down from London for the event, failed to turn up within the time limit. Greaves (6 Enfield sc.), whose machine was fitted with the latest B.S.A. carburetter, turned up late, having suffered from punctures, and he had somehow lost his sidecar mudguard.

Sale (3½ Matchless) ran into a wall near Whitchurch, and Miss Hough, who had the misfortune to lose her way in the dark, pluckily finished amid cheers from the spectators, though, unfortunately, too late for an award.

## Official Results.

R. G. Mundy (trade, 3½ Rudge), ½ min. error, P. J. Evans trophy.

N. G. Blackwell (private owner, 6 Zenith), 1m., Motor Cycle Manufacturers' Union trophy.

C. R. Collier (7-8 Matchless sc.), 1m., P. J. Evans rose bowl.

R. W. Duke (3½ Zenith), 1½m., gold medal.

H. Ball (3½ Triumph), 1½m., gold medal.

E. Walker (4½ Monarch), 3m., gold medal.

V. Underhill (3½ Monarch), 6m., gold medal.

G. H. Alldays (3½ Alldays), 2m., gold medal.

J. H. Percox (3½ Alldays), 5m., gold medal.

R. E. Guest (7 Matchless sc.), 11½m., gold medal.

T. Pollock (3½ James), 5½m., gold medal.

W. Begley (3 Hazlewood), 14m., gold medal.

H. Gibson (3½ Bradbury sc.), 3m., gold medal.

S. A. Rowlandson (3½ Rudge), 1½m., gold medal.

F. Chidley (3½ Triumph), 16m., silver medal.

H. J. Cox (2½ Forward), 12m., silver medal.

P. Taylor (2½ Veloce), 16m., silver medal.

N. Steele (3½ Triumph), 24m., silver medal.

W. H. Egginton (3½ New Hudson sc.), bronze medal.

A. Johnson (3½ Alldays), bronze medal.

A. Young (3½ Kerry Abingdon), bronze medal.

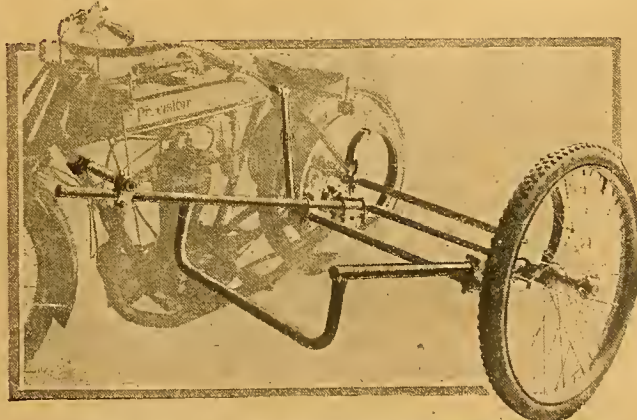
V. Busby (3½ Humber), bronze medal.

G. N. Norris (3½ New Imperial), bronze medal.

A. G. Fenn (2½ Humber), bronze medal.

W. E. Cook (3½ A.S.L.) made an error of 17½m., but was disqualified on account of the noisy exhaust of his engine.

Tea, coffee, and refreshments were provided at the start by Messrs. Duke and Sarsons, the proprietors of the Birchfield garage.



A registered sidecar frame made by Smith and Woodhouse, Ltd., primarily for racing on Brooklands. It was used in the Birmingham-Carlisle Trial.



## NEW REX CYCLECAR.

Features: Friction drive, pressed steel frame, V twin water-cooled engine.

**L**AST week we examined the new Rex cyclecar which the Rex Motor Manufacturing Co., of Coventry, are building and will exhibit at the Olympia Show.

To commence our description of the chassis, which was the state in which we inspected it, we will begin with the frame. This is made of channel steel, and is underslung, the rear dumb irons being upturned at the ends and the rear axle passing across and above the frame. The rear springs are semi-elliptical, shackled at each end, and provided with tubular spring torque rods. Two cross members are provided and one longitudinal central member, also an inner frame of channel steel on which the engine and change-speed gearshaft bearings are carried. The front springs, which are flat and fastened to the inner frame members, project through the space at the end of the channel steel section and are attached direct to the tubular front axle. This narrows the width between the centres of the front springs, which are usually fitted to the main frame side members.

### Steering and Engine.

The steering pillar, which is very rakishly inclined, passes through the dashboard and also a hole formed in the right side of the radiator. The steering tube is connected by a ball and socket joint direct to the right-hand side stub axle lever, the steering centres being of the jaw type and the steering wheel of ample diameter.

The engine is a V-twin type water-cooled Rex, 84½ x 95 mm., with cylinders inclined at 48°, the crank case being attached to the inner frame by cradle plates as in motor cycle practice. The engine is identical with other Rex models so far as details are concerned, but the drive to the magneto, which is fixed on the left side, is by enclosed chain from the sprocket on the engine-shaft, so that

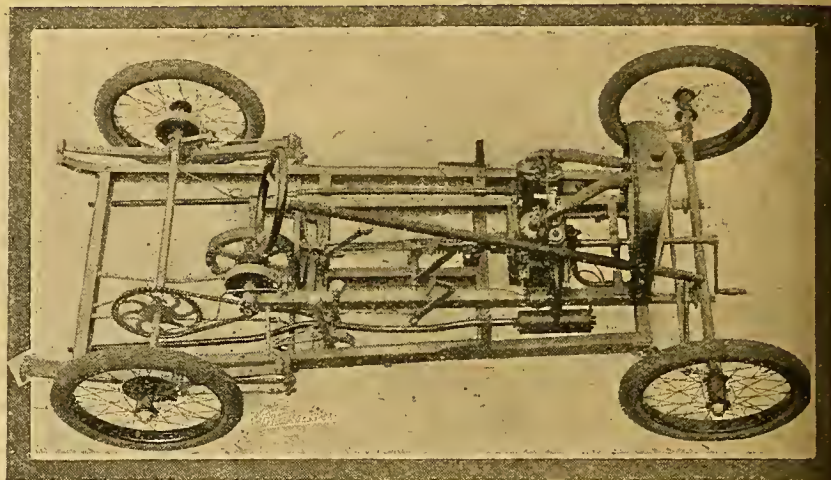
the magneto runs at half engine speed. A large diameter outside flywheel is also provided between the engine and the gear mechanism.

Large water pipes are led from the top of each combustion head to the top of the radiator; this latter is constructed of vertical gilled tubes arranged in the form of a flattened V with the apex pointing forwards, and water pockets, made of moulded brass, are formed all round the radiator.

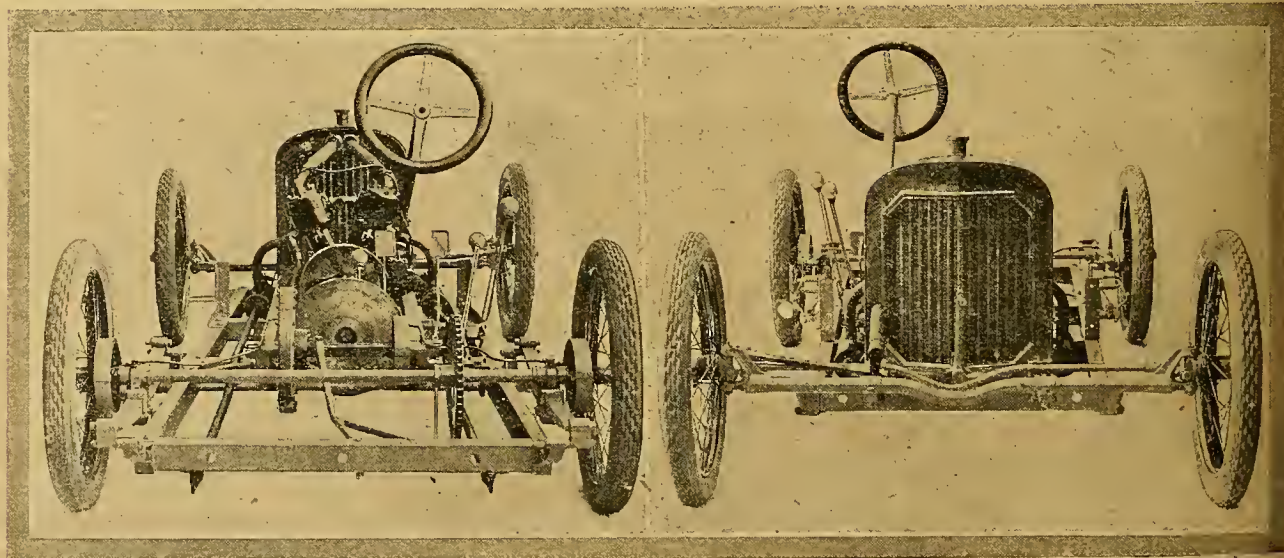
The wood dash carries a hand oil pump by which the engine is fed; there is also a pressure fed drip lubricator, fed from an oil tank also on the dash and connected by piping to the shaft bearings of the friction drum and friction wheel, also the rear axle bearings.

We now come to the most important

part of the construction, namely, the friction-driven change speed mechanism. The engine is in front with crankshaft running in plain bearings, brings the friction drum well back behind the seating. The shaft is squared, in fact, it slides in an extension of the engine crankshaft so that by means of a long foot lever the drum can be withdrawn from the friction wheel against the pressure of a 400 lb. spring, so obtaining a free engine. If extra pressure be required to keep the drum against the friction wheel, a hand lever fitted close to the driver's left hand, i.e., in the centre of the frame, enables more pressure to be put on the spring. This, however, will only be necessary for restarting on a very steep hill.



View of the chassis showing engine in front and friction drive mechanism immediately in front of the back axle.



Front and rear views of the new Rex friction driven cyclecar, which is driven by a twin-cylinder water cooled engine.



**New Rex Cyclecar.**

The friction wheel is carried on a short shaft with plain bearings, which are supported on the ends of the two inner frame members, and the wheel is free to slide on a square of the shaft. The total variation in gear ratio equals the diameter of the drum, so that when the friction wheel is in the centre of the drum no driving takes place. Moving the friction wheel to the outer edge of one side of the drum gives the top gear forward ratio of the vehicle and the reverse forward ratio on the other. Movement of the friction wheel is effected by a hand lever suitably connected by short levers and rods which actuate a long forked rod taking its fulcrum from the rear

cross member of the frame. The friction wheel is covered with Raybestos, which is a mixture of asbestos and woven copper wire. The method of operating the gear change is to depress the pedal lever referred to while sliding the friction wheel transversely by the hand lever to the required spot on the drum to give the requisite gear ratio for the load and gradient. The final drive from the friction wheel shaft to the rear road wheel axle is by  $\frac{5}{16}$  in. roller chain. The rear axle is a solid steel shaft about 1½ in. in diameter; it runs in two plain bearings attached to the spring centres.

Both rear wheels are fitted with outside drum brakes, the bands being lined with Raybestos; they are operated by

pedal, and there is also another brake drum on the squared shaft of the friction wheel, actuated by hand lever. The wheelbase dimensions are 6ft., 6in. and track 4ft. 3in. The 26in. road wheels are wire spoked, fitted with 3in. Continental tyres.

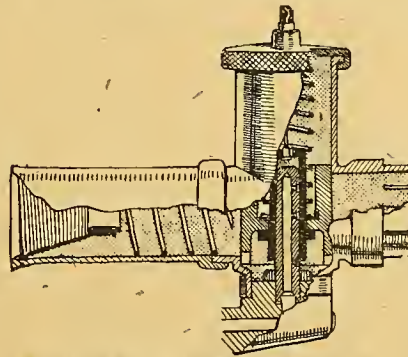
One feature which should not be overlooked is that the underslung frame makes the ground clearance 7in., and none of the mechanism projects below the lowest line of the frame. This enables a flat undershield to be fitted running the total length of the frame.

The body is coachbuilt and roomy, and the usual cyclecar fittings, such as Cape hood, screen, etc., will be supplied to order.

**NEW B. AND B. CARBURETTORS.**

The greatest innovation in the B. and B. programme for 1913 will be the new automatic carburettor. Outwardly it resembles the two lever type, but a single barrel replaces the two. This barrel is forced downwards by a coil spring, and can be raised by the usual Bowden wire method. The wire, however, is not attached directly to the barrel, but to the jet cover (shown black in sketch). As the jet cover is raised it forces up the barrel against the pressure of the spring, and at the correct moment uncovers a second and then a third jet hole. These jet holes are all drilled horizontally into the main jet tube, and it is important that they should face the engine.

A long tube attached to the rear of the carburettor carries a clever compensating device for varying engine speeds. In the tube lie two coil springs. The one nearest the carburettor is parallel and just fits the bore of the pipe. The other is a conical spring, and is made so that in its normal position the coils touch and make a conical choke tube. The two springs carry between them a brass adapter tube. When the engine is running slowly the only air



Browne and Barlow's automatic carburettor. Note the spring balance gear in the air intake pipe.

to pass is that which flows through the adapter, but as the engine speed and suction increase the adapter is drawn towards the barrel, and this, by opening the coils of the coned spring, allows more air to pass.

We saw the carburettor on test in the firm's well equipped test shop, and tried

the device with and without the balance gear. We found that though the carburettor would work without it, the balance gear gave much quicker acceleration and in no way detracted from the maximum power.

The "universal" type will still be retained, but has been improved in detail. The size of the maximum jet has been reduced and the main air adjustment removed; the base of the barrel has also been recessed, which is found to make the carburettor less delicate to control. The standard model remains the same, but an extra model is made with what is known as a hooded jet. The jet proper lies at the bottom of a tube, which tube has a narrow slit down the side which faces the engine. This device is found to prevent the blowback of petrol in all throttle positions, except wide open.

**KILOMETRE RACE AT SPA.**

The above event, held on the 22nd, resulted as follows: 500 c.c. Class—1, Vernon Taylor (Rudge); 2, A. J. Dixon (Singer). Over 500 c.c. Class—1, Griffith (6 Zenith 85 x 76 mm.); 2, Janssens (7 Indian, 82½ x 93 mm.).

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York. PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd.; Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd.; Wellington, Auckland, Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 132, Bay Street, Toronto. SOUTH AFRICA: Central News Agency, Ltd.

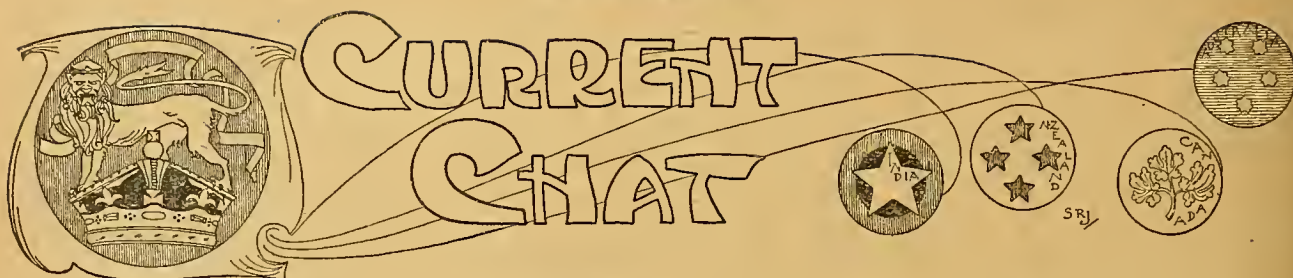
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**CYCLECAR RECORDS BROKEN.**

On Friday evening last at 5 o'clock the 8-10 h.p. Bedelia made an attempt on and was successful in obtaining the fifty miles, one hour, 100 miles, and two hours' cyclecar records. The evening was fine, but there was a fair amount of wind. The first lap from standing start was made at a speed of 46.48 miles an hour. The fastest lap was the eighth, which was covered at a speed of 49.87 miles an hour. After this the speed fell away somewhat. At the end of the first hour 45 miles 504 yards had been covered, beating the machine's own record by 226 yards, and establishing a new fifty mile record in 1h. 6m. 29s. At the end of the hour a stop was made for replenishment.

On the completion of the two hours the distance traversed was 84 miles 600 yards, while the time taken for 100 miles was 2h. 25m. 20s. An interesting feature of the 90° Bedelia engine is the new Nilmelior magneto, specially designed for engines with cylinders set at this angle. The armature is stationary, while the pole pieces revolve.





### TIME TO LIGHT LAMPS.

Sept. 26th	...	...	6.49 p.m.
" 28th	...	...	6.45 "
" 30th	...	...	6.40 "
Oct. 2nd	...	...	6.36 "

### Saturday's Open Trial in the North-west.

The route selected for the Liverpool A.C.C. open trial on Saturday next, the 28th inst., embraces several severe climbs. Starting from Birkenhead (Hamilton Square at 8.30 a.m.), the route is *via* Queensferry, Caergwile, Bwlchgwyn, Ruabon, Llangollen, Horse Shoe Falls Pass (old road), Corwen, Bala (lunch), Festiniog, Blaenau, Festiniog, Bettws, Llanrwst, Llangerniew, Llanganuan, Denbigh, Caerwys, Mostyn, Holywell, Penybally, Holywell, Flint, and Queensferry (finish).

### Climbing the Great Orme.

The Mersey M.C. held a non-stop run to Llandudno on the 22nd inst., and the two prize winners, F. C. Jones ( $3\frac{1}{2}$  Zenith) and V. E. Horsman ( $3\frac{1}{2}$  Singer), afterwards rode on the tramway track up the Great Orme, a climb of about five-eighths of a mile, including two stretches of 1 in  $3\frac{1}{2}$ . These two riders were the only ones to make the ascent at the first attempt.

This is not the first climb up the Orme, several motor cyclists having made non-stop ascents. A member of our staff who was holidaying at Llandudno a fortnight ago, also successfully drove a 1913 model three-speed James with empty sidecar attached, to the tram centre.

### Rowdiness at Competition.

For rowdy behaviour after the speed trials held by the Nottingham and District M.C.C. at Nablethorpe on Aug. 3rd, R. A. Johnson and W. H. Madgwick have been called upon to resign their membership of the Auto Cycle Union. The case of J. King, secretary of the Nottingham and District M.C.C., was very carefully considered, and it was decided to take no action, but to express the sympathy of the A.C.U. with him on this occasion for the treatment he had received at the hands of the police. The case of W. H. Bashall and A. Woodman during the Six Days' Trials week was considered, and it was decided that as no previous complaints had been brought against them, they should be censured by the Chairman and cautioned as to their conduct in the future. It was decided to suspend Vernon Taylor *sine die* for misbehaviour alleged to have occurred at the same time. We understand he has appealed against this decision to the stewards of the Royal Automobile Club.

### A.C. de France Trial.

The Coupe de la Commission Sportive is a six days' reliability event, to be held by the Automobile Club de France from October 7th to the 12th, over a distance of 1,500 kilometres.

### Rudge Cyclecar Experiments.

Every morning, in the early hours, the Rudge cyclecar emerges from the works to undergo its daily test. The first model, which has two standard  $3\frac{1}{2}$  h.p. Rudge engines, has been on the road some weeks. The second is said to have a big single-cylinder engine with a long stroke, but we are given to understand that nothing definite has yet been decided with regard to its final form. The machines have variable pulley gears and belt drive at present.

### Track Trial of the New Triumph.

The experimental overhead valve Triumph, successfully used by J. R. Haswell for the first time in the 150 miles Senior T.T. Race, has great promise. It was not properly tuned up for the event, as it was only decided to use it at the last moment. After Haswell had finished the race, he kindly offered it to us for a trial on the track, and we covered four laps at a speed faster than we have ever travelled on a single-cylinder. There is a noticeable absence of engine vibration, even on the highest speeds. At present the machine will touch 66 m.p.h., but it is considered that this can be improved upon.

### SPECIAL FEATURES.

CYCLECAR DESIGNS (Illustrated).  
TWO NEW SINGLE LEVER CARBURETTORS  
BIRMINGHAM TO CARLISLE AND BACK.

### Paris-Tours Reliability Trial.

The following British entries have been received for the Paris-Tours Trial on the 29th inst.: Vernon Taylor and W. D. South ( $3\frac{1}{2}$  Ridges) and A. J. Dixon ( $3\frac{1}{2}$  Singer). Devay (Triumph), winner of the Grand Prix on the Sarthe Circuit, will also compete. The total entries in four classes are thirty-eight, mostly French machines.

### 1913 Models.

This week we publish the first description and illustrations of the following 1913 models:

- The Averies four-cylinder cyclecar.
- L.E.C. cyclecar.
- Rex cyclecar.
- L'Automobilette.
- B. and B. single lever carburetter.
- Premier three-speed model.
- The Isochronous speedometer.

Illustrations also appear of the latest J.A.P. 90° cyclecar engine, Arden and Alvechurch cyclecars, Amac single lever carburetter, Swan sidecar, and the Smith and Woodhouse racing sidecar.

The first illustrations and details of the 1913 twin-cylinder Hazlewood appeared in our issue of September 19th, but we notice that a contemporary claims the first illustration and particulars this week!



UP ARMS HILL ON A SINGLE CYLINDER SIDECAR.  
Arms Hill, Henley, has been climbed on a  $3\frac{1}{2}$  h.p. two-speed chain-driven Bradbury sidecar. The driver is A. R. Abbott. This is claimed to be the first ascent of Arms Hill on a single-cylinder passenger machine. The total weight of driver and passenger was 21 stone.



## FUTURE EVENTS

- Sept. 28.—B.A.R.C. Meeting.  
 „ 28.—Liverpool A.C.C. Open Reliability Trial.  
 Oct. 5.—Edinburgh M.C.C. Open Hill-climb.  
 „ 5.—Manchester M.C. Open Hill-climb.  
 „ 12.—B.M.C.R.C. Race Meeting.  
 „ 12.—Liverpool A.C. Open Hill-climb.  
 „ 20.—A.C.U. Autumn Open One Day Trial.  
 Nov. 2.—N. Middlesex M.C.C. Open Winter Reliability Trial.

### A C.U. Membership.

Since the last meeting of the A.C.U. Committee well over 500 new members have joined the ranks of the Union.

### Affiliations to the A.C.U.

The Cheltenham M.C.C. and the motor cycle section of the Uxbridge C.C. have lately become affiliated to the governing body.

### The F.I.C.M.

The Canadian Motor Cyclists' Association has expressed its willingness to come to a reciprocity agreement with the Auto Cycle Union, and will probably help to form the new Federation of Motor Cycle Clubs.

### Amateur Police Traps.

The Cyclists' Touring Club, which takes a stand at the Olympia Show each year, and attempts to cater for motor cycle members, is adopting a most extraordinary attitude towards the self-propelled vehicle. According to *The Autocar*, members of the C.T.C. are about to institute amateur police traps with the object of catching scorching motorists. Unattached motor cyclists will do well to think of this action of the C.T.C. when considering which organisation they should join.

### A "Motor Cycle" Prophecy.

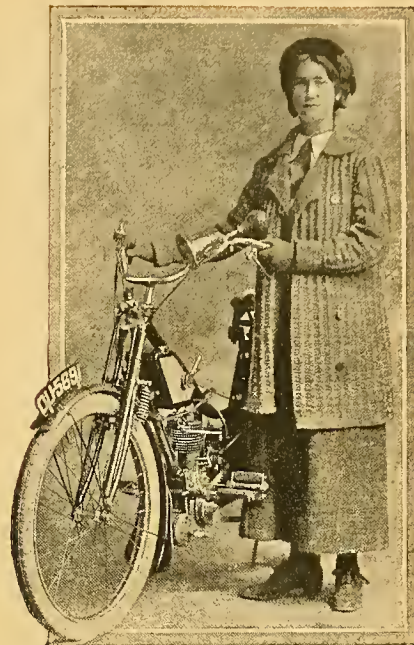
After the Tourist Trophy races an article appeared in these columns predicting a big future for the combined belt and chain transmission, and mentioning the possibility of it being largely adopted in 1913. As proof that our words were not far short of the mark, we may instance the fact that of five next year's models we have so far examined four have the combined belt and chain drive, viz., the Premier, New Hudson, Hazlewood, and Levis.

### The Taxation of Motor Cycles.

The evidence of the delegates representing the Auto Cycle Union on the Treasury Horse-power Committee has been absolutely ignored, and this committee appears entirely to have evaded the question of second-hand machines. In recommending the increased taxation of motor cycles, the committee appears to have completely overlooked the light weight of motor cycles. The matter is receiving the earnest attention of the A.C.U., and the Manufacturers' Union, and motor cyclists may rest assured that their interests are being well looked after by both bodies.

### Byelaws which affect Sidecars.

The County Council of Gloucestershire have passed a byelaw compelling all drivers of carts to use either a rear red light or a reflex light. This is an addition to the list we have already published giving the names of counties which have byelaws to this effect. In addition, we have been trying for weeks past to obtain a list of the counties which have a byelaw compelling sidecarists to carry two lights, showing the full width of the vehicle, but up to the present the Local Government Board has been unable to supply such a list. This is rather awkward, as touring motor cyclists do not know which counties have these byelaws and which have not, with the result that two or three motor cyclists have been summoned and convicted for infringing borough and county byelaws. Our advice to all sidecarists is to exhibit two lights, showing the width of the combination.



A LADY MOTOR CYCLIST OF 16.

Miss Phyllis Edwards, of Taunton, must be the youngest lady motor cyclist in the West Country. She is but 16 years of age, yet manages her 2 h.p. Humber with Armstrong three-speed gear with ease. Incidentally, her father, W. P. Edwards, has instructed nine ladies in the management of motor cycles.

### A.C.U. Meeting in Liverpool.

The meeting which has been called in Liverpool, for 2 p.m., on October 25th, the eve of the Autumn One Day Trial, to discuss the question of the amateur, will be confined to clubs affiliated to the A.C.U. It will be held at the St. George's Restaurant, the headquarters of the Mersey Motor Club.

### The Resignation of Mr. Victor Hart.

Members of the A.C.U. will doubtless be interested to learn of the appointment of Mr. Victor Hart to the editorship of *The South African Motorist*, mentioned in our last issue. At a recent committee meeting of the Union, a vote of thanks to him for his past services was accorded.

### A.A. and M.U. Notes.

**A STOLEN MOTOR CYCLE.**—A member has lost, by theft, his  $3\frac{1}{2}$  h.p. Humber motor cycle and sidecar. It is a 1912 model and the frame number is 4251. The machine was stolen from a street in Camden Town.

**SLEEPING AND DRUNKEN CARTERS.**—One of the Association's road patrols recently witnessed an accident caused to a member's motor cycle and sidecar by a market van, the driver of which was asleep when the accident took place. The motor cycle and sidecar were run into a bank and damaged. The van driver was prosecuted, and upon the evidence furnished by the patrol, he was fined £1 and 7s. 6d. costs, or in default 14 days.

The road from Oswestry to Gobowen is closed from September 16th to the middle of November to allow of the reconstruction of a bridge. The alternative route is through Whittington.



THE SUCCESS OF THE MOTOR CYCLIST AS A DESPATCH RIDER.

The motor cyclist has played an important part in this year's Army Manœuvres, and on all sides has received praise for despatch riding. The photograph shows the motor cycle section of the 25th County of London Cyclists attached to the Blue force. They are drawn up for inspection outside their tents.



## THE ISOCHRONOUS SPEEDOMETER.

**A** WONDERFUL clever speed recording instrument has been invented by Mr. B. Bonniksen, 16, Norfolk Street, Coventry, a well-known watchmaker who is known throughout the watchmaking industry as one of its most ingenious members, and particularly as the inventor of the "Karusel" movement, which, by giving a periodic rotation to the carrier of the escapement of a watch, has overcome one of the greatest difficulties in connection with accurate timing, inasmuch as the accuracy of the watch is unaffected by its position.

Now, the principle of Mr. Bonniksen's speedometer, while old so far as watches are concerned, is new in connection with speedometers. Everyone knows that a speedometer must have some form of governor, and this usually takes the form of a centrifugal governor pulling against the resistance of a spring or springs. There is also the electro-magnetic governor, and combinations of both the magnetic and the centrifugal are not unknown.

### The Fundamental Principle.

In the Isochronous speedometer the governor takes the form of an enlarged watch-balance movement, in other words, a wheel moving backwards and forwards under the influence of a balance spring. This is the fundamental difference between it and other speedometers. There is no need for us to enlarge upon the



The new Bonniksen speedometer.

extraordinary accuracy of the watch balance, because that is so well known the world over, nor have we any intention of dealing with the rest of the internal mechanism except to say that it is most carefully and accurately made and tested. It will be noticed, however, that there are two hands on the dial, and both these register alternately. Every five seconds, whatever the speed of the machine, the hand-pointing to the figure is replaced and the other hand flies back to zero. During that five seconds the indicating hand is absolutely immovable upon the speed figure. Then, whether the speed has

gone up or down or remained constant, the hand at zero flies round the dial to the proper place and the other goes back to zero. The speed at which the hands move alternately round the dial depends upon the speed of the motor, but, whether fast or slow, the reading remains absolutely firm for five seconds, and then is immediately continued by the other hand, so that, however fast the road speed, the reading is always easy—indeed, the higher the speed the easier it becomes—and, of course, it is at high speeds that ease of reading is so essential.

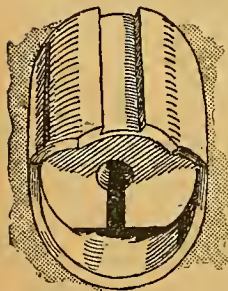
### A Speedometer Registering up to 200 m.p.h.

The dial is graduated up to fifty miles an hour and then overlaps, so that at sixty miles an hour it will register ten. Obviously, there is no objection to this, as even the most phlegmatic of riders would not imagine he was doing ten miles when he was really doing sixty. Indeed, the inventor tells us that up to two hundred miles an hour it is impossible to harm the mechanism or to get an inaccurate reading.

It certainly strikes us as being one of the simplest and cleverest instruments we have seen, while the reputation of the maker, who, by the way, invented a speedometer of the centrifugal type for pedal bicycles some twenty years ago, is so high in the watchmaking world that it is almost unnecessary to say that the workmanship is of the highest class.

## New Single Lever Amac Carburetter.

Last week we published a short description of the new Amac single lever carburetter. We are now able to give further details, illustrations, and also our experiences of it after a short road trial. As mentioned last week, a single barrel replaces the two to which we have become accustomed on the 1912 carburetters. This barrel is shaped at the base in the form of an inverted V, a portion of the rear arm being cut away at the bottom so as to allow more air to enter. Either more or less of this arm is cut away to suit various types of engine. As will be seen from the appended sketch, the barrel closes down over the row of jets (six in number), which are supplied by the main controlling jet below.

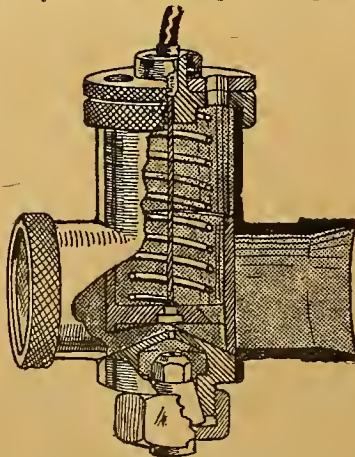


The throttle barrel.

A drilled plate at the top of the carburetter, forms by opening or closing corresponding air holes in the carburetter cap a slow speed adjustment, but hardly affects the engine when running at high speed. This plate has a milled edge, and is held in position by a spring washer. The adjustments necessary from atmospheric or other conditions, can be carried out in

a few seconds and without the use of tools.

We gave the device a short trial on a 6 h.p. single-gear Matchless sidecar combination and found it to work admirably. We could throttle down and run steadily at about 10 m.p.h. and pick up

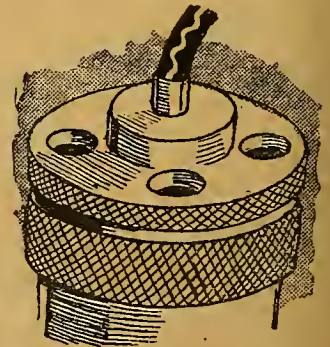


Complete Amac carburetter.

quickly to a good speed. Running free the engine throttled down quite slowly, and if the valve stems had not been slack in the guides, through wear, thus causing a considerable air leak, it would probably have run even slower. The advantage of a single lever carburetter eliminating the

personal factor in driving will be apparent to all.

While on this subject, the Amac Co. particularly wish us to again impress on our readers the necessity of preventing air leaks on the engine side of the throttle, as these are the cause of many complaints that engines will not run slowly.

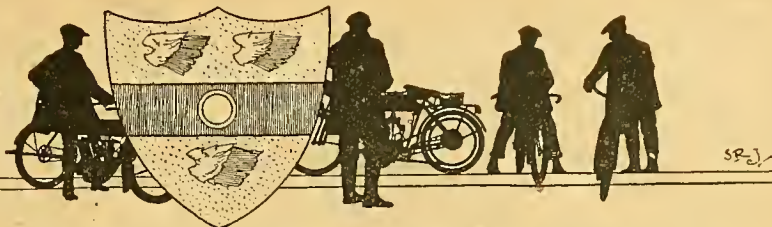


Method of adjusting air supply.

The firm will, of course, continue to manufacture their two lever types, which will embody several small improvements. Notably the control is neater, and is fitted with milled finger adjustments for the wires. The five jets on the present type will in future be replaced by six



# CLUB NEWS



## Lincolnshire A.C. (Motor Cycle Section).

A social meeting of members of this section will be held at Skegness on September 29th. The rendezvous is the Lion Hotel at 11.30 a.m.

## Westmorland M.C.C.

The balloon race will take place on Thursday, Oct. 3rd; the balloon being liberated at 4.30 p.m., at the top of Hutton Park Hill.

## Llanely and District M.C.C.

A non stop reliability run was held on the 14th inst. over a course of fifty miles. The following is a list of the awards: 1. Luther Griffiths (3½ Premier), gold medal; 2. E. Morgan (3½ Trump-Jap), silver medal. This is the first year of this club, and already over fifty members have been enrolled. In the hill-climb, held on September 3rd, L. Griffiths (3½ Premier) gained first prize, E. M. Williams (3½ Triumph) being third.

## Western District M.C. (London).

The petrol consumption trial took place on the 21st inst. over a sixteen and a half miles circular course, starting from Gerrard's Cross. The results, subject to confirmation, are:

	Fig of merit.	m.p.g.
1. F. W. Ritchie (8 Matchless)	... 391	... 107
2. M. J. Tweedie (3½ N.S.U.)	... 382	... 85
3. E. S. Ritter (2½ Douglas)	... 370	... 160

A committee meeting will be held at headquarters to-morrow (Friday) evening at 8 o'clock.

## Exeter and District M.C.C.

The above club will hold an open hill-climb on Merry Pitt Hill, near Postbridge, on the 6th prox. The climb will be on the knock-out principle, and there will be three classes, viz., 350, 560, and 1,000 c.c. A special cup has been presented by Mr. W. W. Douglas for lightweights, and gold medals will be awarded to the winners in other classes. The hill is five-eighths of a mile long, and is perfectly straight from start to finish. Entry forms, etc., are obtainable from the hon. secretary, Mr. E. H. Chestnut, Exeter Garage Co., Paris Street, Exeter.

## Sutton Coldfield and Mid-Warwickshire A.C.

This club will hold a petrol consumption test for motor cycles, sidecars, cyclecars, and motor cars, on Saturday next, starting at 2.30. The following formula will be used:  $\frac{c.c. \times weight}{Petrol used}$ , highest figure to be the winner.

## Luton and South Beds M.C.C.

A hill climb was held at Sundon on the 18th inst. The formula was that used recently by the Ayr and District M.C.C., which gave very good results. Gutteridge (3½ Rudge) made fastest time. Results: 1, Gutteridge (3½ Rudge); 2, Brighton (8 h.p. Chater-Lea); 3, Smart (3½ Rudge); 4, Jarvis (3½ Triumph); 5, Dickinson (3½ Rudge); 6, Terry (3½ New Hudson).

## Manchester Hundred M.C.

The club held a hill-climb at Axe Edge, Buxton, on the 15th inst. Results, on the Nightingale formula, are as follows: 1. H. Thompson (3½ Kynoch); 2. S. P. Dawson (4 F.N.); 3. H. C. Hambleton (3½ Bradbury). Harold Breakell (5 twin Indian) made fastest time of the day. A speed-judgment competition, from Manchester to Bakewell, will be held on Saturday next.

## Glasgow M.C.C.

This club held recently a 100 miles non-stop run which attracted twenty-one entries. The weather broke down at the start, however, and of the eighteen starters only five qualified for gold medals. Belt slip, shortage of petrol, and sideslip accounted for many failures, even on the first round of the twenty-six mile circuit, which included some severe hills. A Clyno was the only passenger machine to obtain a medal. One rider ran out of petrol a few miles from the finish, and another finished six minutes before his schedule time after a non-stop run, both losing awards thereby, while a third rider mistook the finishing point, and was awarded a silver medal, as no departure from the rules could be made. The gold medal winners were: Thomson (James), Orr (Ariel), Chisholm (Ariel), Lanson (Clyno and sc.), and the rider of a Rudge.



The first motor cycle race in Calcutta proved a great success. Our photograph shows the start on the Barrack-pore Trunk Road. There were 30 competitors, handicapped according to size of engine used. The results were 1st, Johnstone (2½ Enfield); 2nd, Gale (3½ Ariel); 3rd, Robertson (2½ Enfield). First prize was a purse of 100 rupees (about £10) presented by the Maharaja Tagore.





Starting the first competitor in the Mersey M.C. non-stop run to Llandudno, last week-end. The sidecar is a Clyno. The start was on the new Chester and Queensferry Road, near Eastham.

#### Goulburn (N.S.W.) M.C.

The last hill-climb of the above club was held on an alleged gradient of 1 in 3 for seven-tenths of a mile. The winner was timed to do 1m. 12s., and he rode a twin King-Dick, as did the second and third competitors.

#### The Motor Cycling Club.

A paperchase has been arranged for September 28th, starting from the Abercorn Arms, Stanmore, meet at 2.30 p.m. There will be two classes: 1, solo machines; 2, passenger machines. The trail will be laid through Hertfordshire lanes, and so distributed that a high-powered machine will have no advantage over a lightweight.

#### North-west London M.C.C.

The race meeting and gymkhana at the Stadium, Shepherd's Bush, on Saturday next, promises to be an interesting and well attended function. The open races will take place between 3 and 4 p.m., and the charge for admission has been fixed at the lowest possible figure, viz., 1s. There are sixteen events, and racing will start at 2 p.m. The entrance fee is 7s. 6d. for one event and 10s. for two. The A.C.U. has granted a permit for the open motor cycle races, provided engines are used with a total displacement which does not exceed 300 c.c. Machines must have long exhaust pipe, silencer, and brake, otherwise there are no restrictions. Entry forms can be obtained from the Editor of *The Motor Cycle*, or Mr. H. J. Pooley, 23, Clifton Avenue, Finchley, London, N.

#### Scarborough and District M.C.

The resignation of the secretary, Mr. J. W. F. Tranmer, has been accepted with regret, and Mr. H. Frain, who acted as hon. secretary during 1910-11, was unanimously re-elected to the post. The club has written to the A.A. respecting certain dangerous corners near Scarborough.

#### Herts County M.C.

This club has been compelled to abandon the idea of holding an open hill-climb this year, the Manufacturers' Union having definitely refused their support to such an event. The next important fixture will be the third open quarterly trial on Saturday, October 5th.

#### Willesden Green C. and M.C.C.

The result of a speed-judging and reliability trial held last week-end for a cup presented by the New Hudson Cycle Co. was as follows: 1, W. J. Williams (3½ B.S.A.); 2, E. Bolner (2½ Douglas); 3, W. H. Wilson (8 Bat Jap). The president's prize goes to J. T. Carpenter (Invicta cycle-car), for a total of five non-stops during the season's events.

#### North Middlesex M.C.C.

In a special notice to the members signed by the hon. secretary, Mr. H. Boocock, and the chairman, Mr. W. H. Browne, the committee point out that for next year they propose to cater for the amateur, and will endeavour to cater for the amateur, and will endeavour to arrange joint arrange joint or inter-team competitions with other clubs. The late hon. secretary, Mr. G. D. Blakey, has resigned, as also has Mr. J. A. Hilger, the Trials secretary.

#### Liverpool A.C.C.

The following is a list of classes for the open hill-climb to be held on October 12th on a hill about thirty miles from Liverpool:

1. Single-cylinders up to 350 c.c. (on formula).
2. Twin-cylinders up to 350 c.c. (formula).
3. Single-cylinders, 351 c.c. and over (formula).
4. Twin-cylinders, 351 to 500 c.c. (formula).
5. Twin-cylinders, 501 and over (formula).
6. For Junior T.T. machines (time only).
7. For Senior T.T. machines (time only).
8. Any machine (time only).
9. Stopping and re-starting, any machine (on time).
10. Stopping and re-starting, any machine (on formula).
11. Any single-cylinder sidecar (on formula).
12. Any twin-cylinder sidecar (on formula).

Variable geared machines allowed in any class.

The entry fees (which must be sent in by October 7th) are 10s. each class for trade riders, and 5s. for amateurs (club members half price). Late entries at double fees, will be received up to midday on the day of the climb. The formula

$$C \times T^2$$

to be used is  $\frac{C \times T^2}{W}$  as recommended by *The Motor Cycle*.

W

#### Dublin and District M.C.C.

The racing season at Portmarnock was brought to a conclusion on Saturday afternoon with the fifth series of speed trials held under the auspices of the Dublin and District Motor Cycle Club. There were three events, the principal one being a twenty miles open handicap. Results:

Two Miles Novices' Handicap.—1, W. F. Parson (2½ h.p. Singer), 20 secs. start; 2, V. J. Jarvice (3½ h.p. Triumph), 40 secs. start; 3, J. Boyton (3½ h.p. Triumph), 10 secs. start. Winner's time, 2 mins. 50 secs.

Eight Miles Scratch Relay Race.—1, F. J. Walker (3½ h.p. Rudge) and W. Curtis (5 h.p. Indian), 10 mins. 11½ secs; 2, W. J. Towser (3½ h.p. Rudge) and J. Heog (3½ h.p. Rudge), 11 mins. 3 secs.; 3, T. E. Greene (3½ h.p. Rudge) and J. Boyton (3½ h.p. Triumph).

Twenty Miles Open Handicap.—W. Curtis (5 h.p. Indian), 24 mins. 36½ secs.; 2, J. Boyton (3½ h.p. Triumph), 26 mins. 30 secs.; 3, F. J. Walker (3½ h.p. Rudge), 26 mins. 23 secs.



A group of members of the Sheffield and Hallamshire M.C.C. taken before the start from Owl Bar for the competition last Saturday.



**Club News.—**

**Portsmouth M.C.C.**

An enjoyable run to Warnford, in the Meon Valley, was made on the 15th inst. Thirty took part.

**Purley and District M.C.C.**

The result of the last night trial of the Purley and District M.C.C. was a tie between C. W. Meredith (Bradbury sc.) and W. F. Symonds (Triumph), who share Mr. Murray Scott's challenge cup for next year. Third place is taken by D. H. Ebbutt (A.C. Sociable), and fourth by V. Tomkins (Rover).

**South Birmingham M.C.C.**

The above club held a paperchase on the 14th inst. over a rough course in the vicinity of Alcester. There were about fourteen starters. The result was a good win for A. H. Johnson (3½ Alldays), J. J. Woodgate (2½ Singer), who had innumerable belt troubles, being second, whilst J. Huntington (T.T. Triumph) filled third place.

**Herts County A.C.**

In the paperchase and "konking" expedition on the 14th inst. the competitors had, without doubt, the most severe thirty miles' gruelling of their lives. Two fiends laden with paper and mounted on a 3½ h.p. Zenith and 3½ h.p. Triumph respectively left Redbourne punctually at 3 p.m., and ten minutes later some twenty-three motor cyclists started in pursuit. The route had been carefully mapped out beforehand, and trouble was early in store for the poor hounds, sixteen of whom petered out in the first five miles. Only three survivors completed the course, their times behind the hares being as follows: Gutteridge (Rudge), 22m.; Biggs (Bradbury), 38m.; Nott, 50m. The "konking" was wonderful to hear.

**Taunton and District M.C.C.**

The results of a hill-climb held on the 12th inst. on Buckland Hill near Taunton, were as follow:

**CLASS I.—LIGHTWEIGHTS.**

T. H. Birdsell (2½ Enfield) ...	fastest time
T. Marks (2½ Motosacoche) ...	3½s. slow
A. H. Knight (2½ Humber) ...	4s. slow

**CLASS II.—HEAVYWEIGHTS.**

E. J. Hancock (3½ T.T. Premier) ...	fastest time
H. F. Potter (3½ Premier) ...	16s. slow
W. H. Lock (3½ Rex) ...	17½s. slow

**CLASS III.—FLEXIBILITY.**

T. G. Crump (3½ P. and M.) ...	difference 6m. 9s.
W. G. Potter (3½ P. and M.) ...	difference 5m. 2s.
T. Marks (2½ Motosacoche) ...	difference 4m. 6s.

**CLASS IV.—SIDECARS.**

W. E. Phillips (3½ Triumph) ...	fastest time
W. G. Potter (3½ P. and M.) ...	25s. slow

**North Birmingham A.C.**

This club is holding a six hours' reliability run on the 29th inst., leaving headquarters, the Acorn Hotel, Erdington, at 10 a.m. First prize, gold medal; second prize, silver medal. Entrance fee, 2s. 6d., which must be paid a week in advance.

**Sheffield and Hallamshire M.C.C.**

The awards in the recent reliability trial held by the above club have now been passed by the committee and are as follows: First prize, S. Sawyer (3½ Premier) and — Stacey (3½ Rudge) tie; silver medals, — Dudley (3½ Precision), Eardley (—), J. Carter (A.J.S. sc.), and G. Carter (A.J.S.).

**Manchester Hundred M.C.**

A hill-climbing competition for motor cars and motor cycles, in two classes, was held at Axe Edge, Buxton, on the 15th. The course was 1 mile 528 yards. H. Breakall (7 twin Indian) made fastest time of the day, and H. Thompson second fastest. The results are to be decided on formula.

**Furness M.C.C.**

A reliability trial was held on the 15th inst., the course being a circular one of 128½ miles. There were fourteen competitors, and the speeds between the different controls varied from 16 to 18 m.p.h. There was also a secret check. The trial was very keenly contested, the ninth man losing only two minutes. Result:

1. P. L. Bryant (Triumph) and E. E. Clow (6 h.p. Zenith) tie for first place, 100 marks, both one mark out at secret check; 3. H. Biamire, 100 marks, three marks out at check.

**Derbyshire and North Stafford A.C. (Motor Cycle Section).**

The last speed trials of the season took place on the 14th inst., under most favourable weather conditions. The course selected was from Etwall to the Burton Road, the distance of the races being one kilometre, from a standing start. Excellent sport was witnessed, some of the finishes being extremely close. The competitors were again handicapped on the trial run times, any competitor reducing his trial time by more than five per cent. being disqualified. Results:

Round I.—D. C. Bolton (3½ Rudge), scratch, beat A. F. W. Geeves (1 Bolton-Jap); G. G. Walkden (Bradbury), 12½s. start, beat H. Russell (Bradbury), scratch (Walkden exceeded his allowance and was disqualified); E. T. Bolton (3½ Scott), 10½s. start, beat F. Newton (Triumph); E. Russell (1 Russell), 15½s. start, beat F. Smith (2½ Douglas).

Round II.—D. C. Bolton, scratch, beat H. Russell, 7½s. start; E. T. Bolton, scratch, beat E. Russell, 15s. start.

Final.—E. T. Bolton, 14½s. start, beat D. C. Bolton, scratch. E. T. Bolton, however, exceeded his allowance, so the second place was decided upon by a knockout between H. Russell, E. T. Bolton, and E. Russell, E. Russell (1 Russell) winning. D. C. Bolton takes a silver medal for fastest time of the day, also silver medal for first place. E. Russell takes a bronze medal for second place.



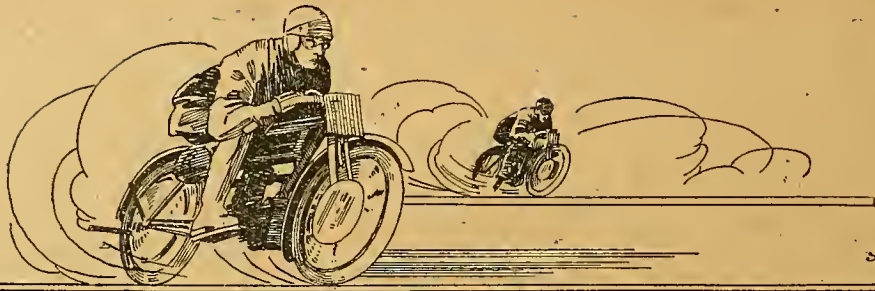
**LEICESTER M.C.C.'S INTER-CLUB HILL CLIMB AT AB KETTLEBY.**

1) W. P. A. Chapman (6 h.p. Champion-Jap) starting in the sidecar class. This rider was first in the multi-cylinder and sidecar classes.

(2) F. Snowden (3½ n.p. Rudge), who was first on formula in the sidecar class, rounding the first bend on the hill.



## QUESTIONS & REPLIES



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Cambridge to Keswick and Cambridge to Portsmouth.

? Would you kindly tell me the best route (to avoid hills as much as possible) and mileages from (1) Cambridge to Keswick, (2) Cambridge to Portsmouth? I wish to avoid big hills, as my machine is a  $3\frac{1}{2}$  h.p. single-gear one—a Triumph.—E.M.N.

Your best routes would be as follows: (1.) Cambridge, Godmanchester, Huntingdon, straight up the Great North Road through Stilton, Stamford, Grantham, Newark, Retford, Doncaster, Ferrybridge, Aberford, two miles south of Wetherby, turn left and go through Otley, Ilkley, Skipton, Settle, Ingleton, Kirkby Lonsdale, Kendal, Ambleside, to Keswick. You will find the Kendal Road somewhat hilly, but this cannot be avoided. There is nothing on this route which a  $3\frac{1}{2}$  h.p. Triumph will not take with ease. The distance is approximately 250 miles. (2.) Cambridge, Royston, Baldock, Stevenage, Welwyn, Hatfield, St. Albans, Watford, Rickmansworth, Denham, Uxbridge, Colnbrook, Staines, Chertsey, Guildford, Godalming (where drive with extreme caution), Milford (keep to right), Hindhead, Petersfield, Cosham, to Portsmouth. The distance is approximately 110 miles. Godalming can be avoided by turning to the left at Peasemarch, about half-way between Guildford and Godalming (or by going through Shalford). The road, which

is rather narrow but fair, passes over Munstead Heath and skirts Busbridge Hall; a mile further on turn sharp to the right at Hydestile, and passing Milford Street take the Portsmouth Road at Milford, crossing the Haslemere Road at the entrance to the village.

### Magneto Queries.

? Some time ago you were kind enough to help me with the timing of my twin Rex. One more question I would like to ask you, and that is with regard to the magneto, which runs in the reverse way to the engine, which is a 5 h.p. twin. The two metal segments on the contact breaker ring are evidently of a different size, for in one case the platinum points break directly the fibre cam comes in contact with the segment, and in the other case the fibre cam has travelled nearly half way over the segment before the points break, and they do so very gradually instead of opening completely all at once as in the other case. Moreover, the segments are marked I. and II., which refers to the cylinders, but which cylinder is I. and which II.? When does the spark occur at the plug?—J.R.W.

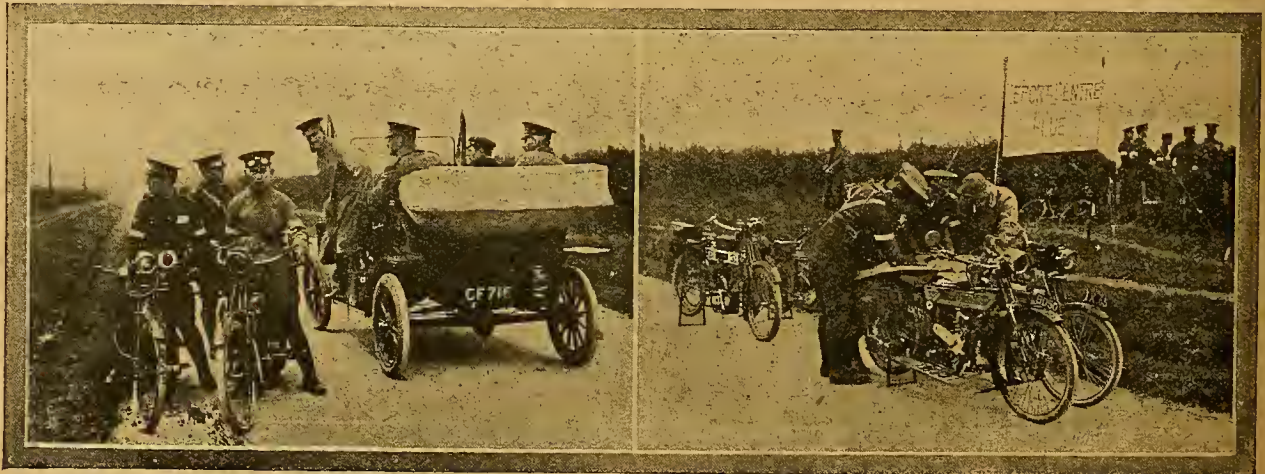
The break should occur for each cylinder when the fibre block comes in contact with the segment. Evidently one segment wants packing up a little from the

back; or try a new contact maker. The platinum points should separate quickly. The back cylinder is usually No. 1., but you can easily verify this by noting, with the help of a piece of wire passed through the compression tap, which cylinder is at the top of its firing stroke, or nearly so, at the moment when the points break on No. 1. segment. The spark occurs at the moment when the platinum points separate.

### Engine Overheating.

? I should be very pleased if you could enlighten me on one or two points, *i.e.*: (1.) Engine getting nearly red-hot after the first four or five miles, therefore losing most of its power. (2.) Failure to answer to throttle after having same about half open. (3.) How can I stop oil working out of the joint of the crank case? My mount is a Minerva machine with Bosch magneto and B. and B. carburettor. The power of the engine is very good when cold. I have had it to pieces as the magneto gear got broken.—E.H. (Northfield).

(1.) The cause of the first trouble might be want of lubrication or maladjustment of the carburettor. (2.) This also would prevent the machine from answering to the throttle. Possibly too large a jet is fitted. (3.) A packing of brown paper soaked in boiled linseed oil. Also check over your timing carefully. You may have upset this in re-assembling.



Some of the motor cyclist despatch riders who were acting in conjunction with the Blue and Red armies in Cambridgeshire last week.





**MEMBERS OF THE CAPE PENINSULA M.C.C.**

Competitors meeting outside the cycle track, Mouille Point Road, August 24th. The occasion was the slow speed competition.

**Dissolved Acetylene.**

?

I am a medical man about to give up my horses and traps, and have gone in for a motor cycle—a Scott. I shall be greatly obliged for your guidance about the following liquid acetylene outfit: Where it can be obtained, where recharged, if satisfactory, and the cost. —J.H.K.

Liquid acetylene for a motor cycle is somewhat unwieldy on account of the size of the cylinder. The Dissolved Acetylene Depot is at Long Acre, E.C., whence full particulars can be obtained. They have depots throughout the country where these cylinders may be recharged or exchanged. It is quite satisfactory, but somewhat expensive (see page 528 of our issue for May 16th, 1912).

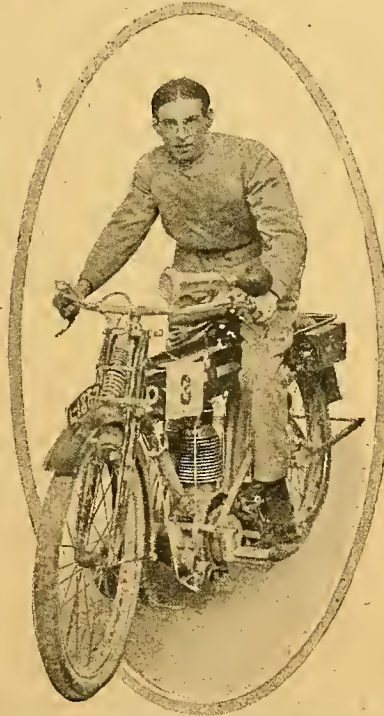
**Repairer Sells Magneto Parts.**

?

Recently I broke the frame of my motor bicycle, and took it to a local garage to be repaired. Whilst waiting for the frame to come back from the makers the proprietor of the garage sold the contact spring and cover off my magneto (unknown to me). When I went for the machine he duplicated the sold parts, but the motor would not go with the spark advanced. It broke down altogether since, and has cost me various sums. Now it refuses to spark at all. I have taken it back to him, and pointed out that as it was quite in order when he had it in the first place, he must put it quite in order again. This he refuses to do, and will not promise to reimburse me for out of pocket expenses and the necessary repairs to the machine. What do you advise?—F.S.S.

Our legal adviser writes as follows: "If all parties agree that the repairer had nothing to do except to repair the broken frame, he would have no right to interfere with the contact spring or the cover to the magneto, and certainly he had no right to sell same. On the face of it, it seems to me to be a criminal offence; but, in any event, your correspondent can sue the repairer for the damage reasonably sustained through the wrongful action. I think your correspondent's best plan is to get the machine back again from the repairer and let someone else examine it,

and then consult a solicitor, who would be able to advise as to the best course to adopt, having regard to the whole circumstances and the evidence."



E. Clissett (5½ h.p. B.S.A.), who was the most successful competitor at the Cowbridge and District M.C.C. hill-climb.

**Silent Motor Cycles.**

?

(1.) I should be very glad if you could tell me which makes of motor bicycle are the most silent. I have been told that the engine is very silent indeed on an Indian.  
(2.) I should also be glad if you would tell me if the lightweight motor bicycles, with free engine and two speeds, are easy to start.—T.T.

(1.) You will certainly find the Indian to be a very silent machine. Several other motor bicycles also run very quietly; in fact, most machines are silent with the

cut-out closed, but, unfortunately, too many owners run with the cut-out open. Almost any machine can be made quiet with the addition of a good silencer. (2) Most lightweights are very easy to start, particularly if possessed of a variable gear.

**Sluggish Starting with a Twin-cylinder Machine.**

?

My 5 h.p. twin will sometimes only fire on one cylinder for fifty or sixty yards when starting; then the other one starts, and no more trouble is experienced throughout that journey. It is always the rear cylinder that fails. At night-time when it starts like this, I see sparks running from the bearing of the magneto along the sleeve of the chain sprocket, and every time these sparks disappear the engine fires perfectly at all speeds from a walking pace. I have cleaned and adjusted the contact-breaker, examined both brushes (both seem perfect), tried new plugs, and yet it occasionally does this after the machine has been left for a time. Can it be oil or dirt inside the magneto? The magneto is a D.A.V., 1910.—A.M.G.

Probably the trouble is due to a poor connection in the magneto, the carbon brush sticking, oil on the sparking plug, or the plug on this cylinder having a greater gap than the other. Sticking of the carbon brush might cause the external sparking of which you complain. You might try cleaning the collector ring of the magneto.

**READERS' REPLIES.**

**Oily Plug in Rear Cylinder.**

In reply to enquiry of "W.E.I." in *The Motor Cycle* of September 5th re the back plug of his 6 h.p. twin sputting up, if he would use one of the Auto plug cleaners, obtainable from any of the large accessory houses, he would find his trouble immediately disappear; I find the device most effective on my own machine.—E. WIXSON.

**EXPERIENCES WANTED.**

"E.H.M." (Finchley).—4 h.p. Scott and Canelet sidecar.  
"E.G.T." (Smethwick).—3½ and 4½ h.p. Precision engines.  
"C.H.M." (Bradford).—6 h.p. T.T. Matchless, Bat, and Zenith.  
"W.E.A." (Coventry).—Free engine and change-speed gear to suit 1908 Triumph and sidecar.  
"S.V." (Bishop's Stortford).—2½ h.p. New Hudson. Durability, and working of three-speed hub.

If "T.S." (Stockport) and "W.T." (St. Helens) will comply with our rules and send stamped addressed envelopes they will receive replies to their queries.

**"The Motor Cycle" Photographs.**

Duplicates of photographs appearing in "THE MOTOR CYCLE" will be supplied at the following rates:—Unmounted prints, half plate, 1/6 post free; mounted, 1/9 post free. This refers only to photographs taken by "THE MOTOR CYCLE."

Orders, which must be accompanied with remittance, should be addressed to the Photographic Department—Iliffe and Sons Limited, 20, Tudor Street, London, E.C.



### The Future of the F.N.

The F.N. Motor Agency, 106, Great Portland Street, and 45, Clipstone Street, W., is shortly to be taken over by "F.N." (England), Ltd., temporary premises 31, Foley Street, W.

### Cyclecar Silencers.

J. C. Lyell and Co., 113, Great Portland Street, W., inform us that they have lately produced a new silencer for the 8 h.p. twin engines largely used on cyclecars.

### Three Successive Wins.

The Greig challenge cup was won outright at the Streatham and District hill-climb by F. W. Barnes on a Zenith. Barnes has won this cup three years in succession, and it is now his property.

### New Electric Lamp.

Messrs. Alfred Dunhill, Ltd., 359-361, Euston Road, N.W., who have long been dealers in motor cycle accessories; have now so far specialised in this branch of their business that they have set aside a totally separate department, in which none but motor cycle goods are sold. In it are to be found specimens of clothing and all types of accessories, including



Dunhill's electric motor cycle lamp.

a neat looking electric sidecar lamp, which we illustrate herewith. A speciality is the Dunhill sidecar, which is strongly made, well finished, and provided with telescopic joints. Below the accessories department is a repair shop, where motor cycle repairs are effected.

### A Comprehensive Win.

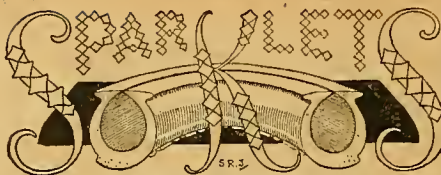
In the hill-climb held by the Portsmouth section of the Hants M.C.U., Premier machines greatly distinguished themselves, particularly in the sidecar class, in which they gained second, third, fourth, fifth, and seventh places. This is a big scoop for one make of machine, especially as the well-known  $3\frac{1}{2}$  h.p. type was responsible for each position.

### Humber Success in the Colonies.

A one mile speed contest, organised by the Diamond Fields M.C.C., Kimberley, South Africa, last month, attracted eleven entries, all, with the exception of B. Carnell, being mounted on  $3\frac{1}{2}$  h.p. machines. Mr. Carnell rode his  $2\frac{1}{2}$  h.p. Humber twin lightweight, and demonstrated in a convincing manner the speed capabilities of this model, for, notwithstanding that it was the lowest-powered motor cycle in the contest, it made fastest time of all competitors, and secured the silver trophy.

### Electric Lamps.

Siemens Bros., Ltd., Tyssen Street, Dalston, N.E., have now got a full range of Wotan battery lamps, which can either be run from dry batteries or accumulators. These lamps have filaments of pure drawn Tungsten wire, and are operated at an exceedingly high efficiency.



### A Gloucester Garage.

A new garage has been opened in Gloucester, known as the Bristol Road Motor Garage Co. The general manager, W. J. Welling, was formerly a works superintendent at Kynoch's, Birmingham.

### Belt Fastener Case.

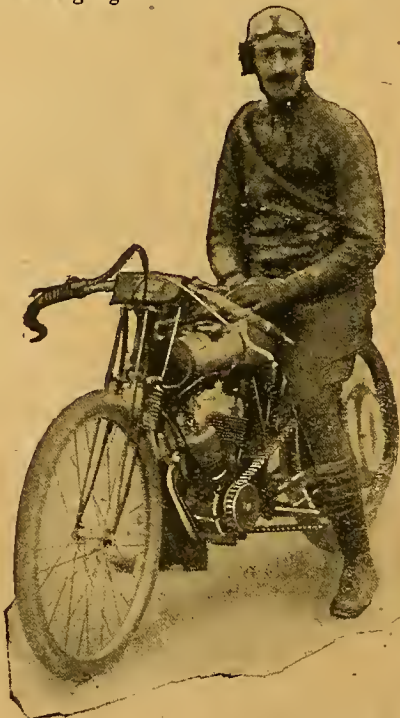
We have been using a Forward belt fastener case this season. It is a handy little leather case in which reposes any type of fastener, and as it protects the fastener screws and nuts they do not get abraded by vibration.

### Useful for Cuts.

The Hutchinson Tyre Co., 70, Basinghall Street, E.C., have sent us a sample tin of Vanoric bandage. This is both antiseptic and adhesive, and all that is necessary in the case of cuts and wounds is to wrap it round the injured member and lap it over on to itself. We trust we shall not be called upon to use it.

### Books to Read.

The latest edition of the Homeland Reference Books—"Southern England, Coast and Countryside," The Homeland Association, Ltd., 15, Bedford Street, Strand, W.C. This booklet contains an article on the cathedrals of Southern England by E. W. Harvey Piper, a special article on the South country by Arthur Henry Anderson, and other useful information concerning motoring, golfing, and angling.



S. W. Phillpott (2nd Humber), who finished fifth in the Junior T.T. Race on Brooklands, but was not properly checked owing to the Senior Race having to be started before all the Junior T.T. competitors had finished.

### Universally Jointed Connecting Rods.

The Lloyd Motor Engineering Co., Ltd., Birmingham, inform us that they are still making pistons for L.M.C. machines with a universal joint to the small end of the connecting rod. These are being fitted to certain speed machines.

### Catalogues Received.

The latest catalogue of the Crescent cyclecar, which is made by Crescent



Auto Aero Co.'s wind scoops which deflect cool air to the valve pockets.

These vehicles are now friction driven. The bodies are particularly smart looking, the sociable type having a flush-sided body of very neat design, to which a Cape cart hood and screen can be fitted. We notice a tandem model with flush sided body is still listed.

### Binks Racing Carburetter.

S. R. Axford, who performed so well at the Streatham hill-climb, used one of the new Binks racing carburetters, illustrated and described in this journal on April 4th, 1912, page 364. He won three firsts and made fastest time of the single-cylinder machines, and also scored the highest figure of merit.

### Valve Covers.

Motor cyclists are aware that no matter how carefully made the engine may be a certain amount of oil usually exudes from the tappet guides. One or two makers have fitted valve covers, which certainly make a motor cycle engine look neater, as even if a little oil does exude, dust and grit are not attracted to the sticky surface of the valve cover guides, springs, etc., because they are protected by the cover. These covers have been up to now a feature of one or two makes only. Mr. Tom Ford, 98, Chestergate, Macclesfield, has, however, introduced a valve cover which will fit existing machines of all the leading makes. The annexed sketch is self-explanatory.



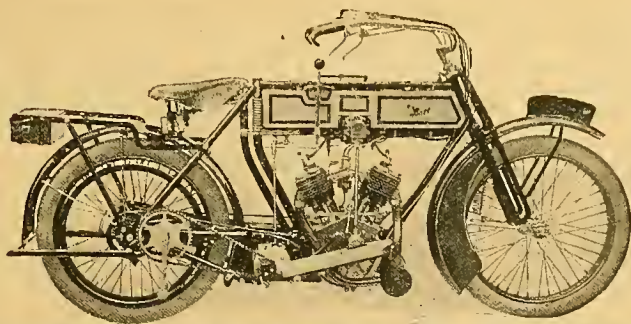
The spring blades which fit around the cylinder.



The valve cover in position on a New Hudson.

The spring blades fit each side of the cylinder so holding the cover firmly in position. The body of the cover is of aluminium, polished, and shaped at the lower end to a neat fit on the tappet guide projections on the crank case, while the gripping springs are nickel-plated. Inset is a small illustration of a New Hudson motor cycle engine fitted with one of the covers in question, and very neat it looks.





## In splendid isolation—

By reason of its SPRING FRAME—(fore and aft)—WEATHER-PROOF MAGNETO POSITION—TWO-SPEED GEAR (countershaft type)—FOOT-STARTER (free of the footboards and SILENT, SUPPLE CHAIN DRIVE.

No other motor cycle has all these features.

Write for details  
of the  
NEW MODEL.



THE  
BAT MOTOR MFG. CO.,  
PENGGE,  
LONDON, S.E.

## BEST TYRE PERFORMANCE IN THE A.C.U. SIX DAYS' TRIAL.

The 'MOTOR CYCLING' CUP for BEST TYRE PERFORMANCE  
was won by

# PALMER CORD TYRES

Fitted to Mr. F. Smith's 5-6 h.p. Clyno and Sidecar.

6 out of 7 riders of Palmer Tyres gained,  
in addition, 4 Cups and 6 Gold Medals.

Illustrated Booklet and Price List on application.

THE PALMER TYRE, LTD., 119, 121, 123, Shaftesbury Avenue, LONDON, W.C.  
MOTOR CYCLE TYRE DEPARTMENT : 103, St. John Street, Clerkenwell, E.C.



# Lady Rider's Wonderful Performance

## IN 24 HOURS' RIDE.

# —MISS N. HOUGH—

ON HER

# Colmore-Scott & Sidecar

Fitted with HUTCHINSON TYRES, successfully completed the 410 miles distance.

Early  
Delivery  
of  
1913  
Stuff.

# Colmore Depot for Scotts

The machine which brings you and your passenger home again.

**COLMORE,** 31, COLMORE ROW, BIRMINGHAM.  
49, JOHN BRIGHT STREET, BIRMINGHAM.

# THE FAMOUS BEDELIA TORPEDO TWO-SEATER

Exhibiting at  
Olympia  
Nov., 1912.



again leads the way. Following the recent success at Le Mans in the International Cup Race when, in the Tricar and Cyclecar class, BEDELIA finished FIRST and SECOND, A. Jones, on a standard 8-10 h.p. BEDELIA, set up, on September 20th, 1912, FOUR NEW RECORDS.

45 miles 504 yards in 1 hour.  
84 miles 300 yards in 2 hours.

50 miles exactly in 1 hour 6 minutes 29 seconds.  
100 miles exactly in 2 hours 25 minutes 20 2/5th seconds.

Following a long list of previous successes this remarkably consistent running establishes the Bedelia as the best Cyclecar yet produced.

**IMMEDIATE DELIVERIES**  
The 8-10 h.p. Model is vibrationless.

Trial run with pleasure.

B 32

Write at once for (post free) Bedelia Catalogue to  
**L. N. PALMER'S GARAGE,** Sole Concessionaire for the British Empire,  
MERTON TRAM TERMINUS, TOOTING.

Telegram—"Palmer's Garage, Tooting." (8 mins. Balham L.B.S.C. Rly.). 'Phone—208 Streatham.

In answering these advertisements it is desirable to mention "The Motor Cycle."

**PRICES**  
Type A, 3 1/2 h.p. . . . 56 guineas  
Type A1, 4 1/2 h.p. . . . 66 guineas  
Type BD1, 5 1/2 h.p. . . . 80 guineas  
Type BD2, 8-10 h.p. . . . 96 guineas  
Type BD2, Model de Luxe 103 guineas



## The VOLEX GIANT ELECTRIC MOTOR CYCLE LAMP

with the **VOLEX GIANT**  $4\frac{1}{2}$  volt (Patent applied for) **DRY BATTERY**.

Far superior to accumulators, always ready, does not deteriorate by keeping, gives 65 renewing. Complete with satchel for fixing to frame of machine, motor head lamp, self focussing lamp attachment, metal filament bulb, complete ready for use.

**Price 20/- post free.**

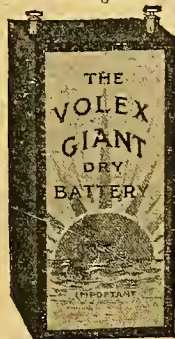
Send for our M. & C. Catalogue, giving full particulars of these lamps. The most interesting Catalogue of its kind issued.

Mention "The Motor Cycle."

**WARD AND  
GOLDSTONE,**  
Contractors to H.M.  
Government,  
**SALFORD,  
MANCHESTER**

Telephone—  
7084-5-6 Central.

Telegrams—  
Mullum,  
Manchester.



Spares Volex Giant Refills,  
**4, 6 each.** The most  
powerful and lasting dry  
battery made. Idea for  
ignition.

## WHY Is it that on nearly every one of the "crack" machines you see about everywhere you find a **LODGE PLUG?**

One reason is probably that the owner is a discerning rider and knows a good sparking plug when he sees one.

Again, it is now widely known amongst motor cyclists that a Lodge Plug is so designed as to develop just a shade more power than can be obtained with any other plug made. And engine power is what they want.

Suitable with all magnetos on all motor cycles, the Lodge Plugs are English made, and are obtainable everywhere.

**Price 4/- each.**

When ordering specify "motor cycle type"—those in RED boxes.

**LODGE BROS. & CO.,**  
Dept H.,  
**New St., BIRMINGHAM.**



## IMPORTANT PUBLISHERS' ANNOUNCEMENT

During the two years "THE AUTOMOBILE ENGINEER" has been in existence, it has proved remarkably successful. We feel, however (and the impression is confirmed by the opinions expressed by many readers), that its scope and usefulness are curtailed by the restrictions which are necessarily imposed through publication only once a month.

The prime interest of "THE AUTOMOBILE ENGINEER" has all along been centred upon internal combustion engineering, but it has been found impossible, in a monthly paper, to treat the subject as broadly as was intended originally, and as is desirable in view of the enormous increase in the applications of the internal combustion engine.

It has therefore been decided to broaden the scope of the paper considerably by dealing also with other and larger internal combustion engines, their construction and application; in fact, to make the paper the authority on the subject of modern prime movers.

To render this enlargement of scope possible the paper will be published fortnightly, on and after October 2nd next, and the title will be altered to

## INTERNAL COMBUSTION ENGINEERING

incorporating "THE AUTOMOBILE ENGINEER."

The size, style and price of the paper will remain as at present, and the features which have established "THE AUTOMOBILE ENGINEER" will be retained, but the greater frequency of publication will permit exhaustive treatment of a far wider range of subjects than hitherto has been possible. Fuller details will be published later.

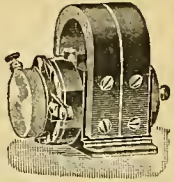
**THE AUTOMOBILE ENGINEER PUBLISHING CO., LTD.**

(PROPRIETORS: ILIFFE & SONS LTD.)

**20, Tudor Street, LONDON, E.C.**

*In answering these advertisements it is desirable to mention "The Motor Cycle."*





## FOR SPEED WORK

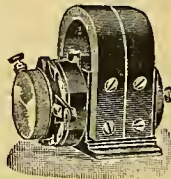
there is no magneto to equal the

# 'U.H'

The most reliable ignition apparatus extant and the most economical too. Will give your machine more speed and more power on hills.

Let us send you illustrated descriptive booklet.

**S. WOLF & Co.,**  
115, Southwark Street,  
London, S.E.  
Grams: "Widerstand, London."  
Telephone: 5172 Central.



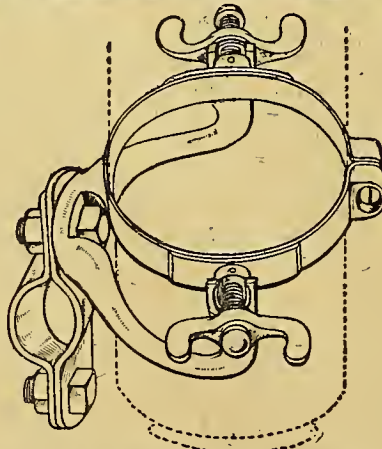
C.D.C.

## F. R. S. LAMPS AND GENERATORS, HOLD WORLD'S RECORDS.

Sidecar  
Bracket  
to hold any  
size  
generator,  
on any  
sloped tube,  
in an  
upright  
position,

# 6/6

complete.



Send for Catalogue of our  
**LAMP with 1,200 feet beam.**

**HALL, LTD.,** Wrotesley Street, BIRMINGHAM.  
60, SHOE LANE, LONDON.

SPECIAL AGENTS } Service Co., High Holborn, W.C.  
Taylor and Co., Store Street, Tottenham Court Road, W.  
Robertson, 157, Great Portland Street, W.



## THE BLUEMEL MASCOT :: PLUG ::

**WILL** get the last ounce out of your engine.

**WILL** stand up to the hardest work it can be possibly put to.

**WILL** do so consistently for a greater length of time than any other plug.

**WILL** regularly fire the weakest mixture, and

**WILL** give you the much desired immunity from ignition troubles.

Write for List, Motor Cycle Dept.,

**C. W. BLUEMEL & BROS.**

WOLSTON, near COVENTRY.

MODEL S for Motor Cycles.

## 4¼ REGAL PRECISION

FOR SIDECAR WORK GIVES JUST THAT LITTLE EXTRA POWER THAT YOU WANT.

Single Cylinder, 89×96 m/m., 600 c.c.

Extra strong frame and forks, that you can always rely upon. Extra large tank capacity, with detachable sump and petrol filter.

Extra low saddle and comfortable riding position.

Sturmev-Archer 3-speed, or Bowden or Roe 2-speed.

Excellence of practical design and finish, heaps of good points. That little "extra" all round that makes "just the difference."

Immediate Delivery.

**ERNEST SMITH & WOODHOUSE, Ltd.,**  
88, John Bright Street, BIRMINGHAM.

LONDON AGENTS: H. C. MILLS & Co., 15, Woodhouse Parade, North Finchley



## The Guest Decompressor. PATENT.

**T**HE little article illustrated herewith makes motor cycle starting simplicity itself, and not an athletic feat as heretofore.

EASY TO START THE ENGINE, AND GOES DEAD SLOW IF REQUIRED. SIMPLE TO FIT.

SUITS ALL STANDARD MACHINES. FITS INTO EXHAUST CAP. NOTHING TO GET OUT OF ORDER.

Price **12/6** each.  
Postage 4d.

**GUEST DECOMPRESSOR CO.,**  
107, HIGH ST., WEST BROMWICH.



# MOTOR CYCLES BY EASY PAYMENTS

Whiteleys can supply ANY MAKE OF  
MOTOR CYCLE or CYCLECAR on the  
EASIEST OF EASY TERMS.

Interest Charge from 2 per cent.  
(Carriage Paid.)

## A TEN POUND NOTE

secures delivery, and you can pay the balance  
afterwards by twelve monthly instalments.

WHY WAIT 6 WEEKS WHEN WE HAVE IN STOCK

Premiers	Alcyons	Bats
Bradburys	New Hudsons	Zeniths.
Triumphs	A.C. Sociables	Hobarts
Indians	Humbers	Clynos
Douglas	Singers	P. & M.'s.
Rex-Japs	Motosacoche	Rudges

Special agents for Rollo cars.

# WHITELEYS

—QUEEN'S ROAD, LONDON, W.—

## IMMEDIATE DELIVERY of CYCLECARS

# A.C. MORGAN. G.W.K.

Also of high-class Motor Cycles  
such as SCOTTS, P. & M.'s,  
BRADBURY, REX-JAP, ZENITH,  
HUMBER, MATCHLESS, BAT-  
JAP, DOUGLAS, PREMIER,  
CLYNO, MOTOSACOCHE,  
RUDGE, etc., etc.

### TERMS:—

Cash; Deferred; and Exchanges of  
cheap Motor Cycles.

Lists of Accessories, also of new and  
second-hand Motor Cycles, waiting.

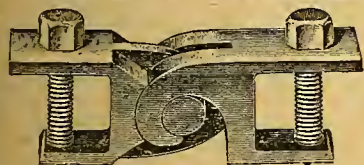
# HITCHEN'S LTD., MORECAMBE.

Telephone: 112.

Telegrams: "Hitchen's, Ltd., Morecambe."

# AMAC

## BELT FASTENER.



PRICE  
**2/6**

ONE YEAR'S GUARANTEE. MADE OUT OF SOLID STEEL  
BARS. HARDENED—UNBREAKABLE.

ASTON MOTOR ACCESSORIES Co. Ltd.  
Telford Street, Aston, BIRMINGHAM.

# AMAC

## 2 Firsts, 8 Seconds, 4 Thirds, and fastest time of the day on STERNOL

These successes were scored by Tessier  
and Newman, in the Open Hill Climb  
at Titsey, on 7th Sept., lubricating  
with standard quality "Sternol."

Silver Cup & Two Gold Medals.

The Silver Cup for best performance  
by a private owner on observed hills in  
'the 6 Days' Trial was awarded to  
D. W. Cooke, who also secured a gold  
medal, and qualified for a special gold  
medal for his performance on Portlock.

At Brooklands Junior T.T. Race of  
150 miles, Second place was taken by Hugh Mason on a Twin N.U.T.,  
J.A.P. Standard quality "Sternol" was used in both cases.

Write for particulars and prices of "Sternol."

**STERNOL**

56, Royal London House,  
Finsbury Sq., London, E.C.



One of the Classic Events  
of the 1912 Race Season.

# BROOKLANDS T.T. RACES

14/9/12.

## THE SENIOR RACE

was won by J. L. E. Emerson  
on a 3½ h.p. long stroke Norton  
on which he was using our  
filtered, racing grade Castor oil.

J. R. Haswell was second on a  
3½ h.p. Triumph, and he was  
using Motorine A.

## THE JUNIOR RACE

like the Isle of Man Event was  
a splendid success for the  
Doug'as. It was won by S. L.  
Bailey, who was using Summer  
Huile de Luxe.

Hugh Mason on a N.U.T. was  
second. He was using our  
Motorine A.

## PRICE'S OILS 1st & 2nd in both Races.

1912 Lists of all Oils will interest Motor Cyclists.

# PRICE'S PATENT CANDLE CO. LTD., BATTERSEA, LONDON, S.W.



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

### SECTION II.

York and Lancashire.

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, and Warwick.

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

### SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

### SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

### SECTION X.

Scotland.

### SECTION XI.

Ireland and Isle of Man.

## Greatly Reduced Prices

are Quoted in the  
**SEASON'S CLEARANCE at**



9, Shoe Lane,  
Fleet Street,  
LONDON, E.C.

Buy now to secure the  
**BEST BARGAINS OF THE YEAR**

6016.	2½ h.p. 1911 2-speed	DOUGLAS, Model E	£32 10
6009.	8 h.p. 2-speed	BAT	£40 0
6008.	3½ h.p. 1911 F.E.	TRIUMPH and sidecar	£26 10
6007.	2½ h.p. 1911	DOUGLAS	£42 10
6004.	3½ h.p. 1912 3-speed	BRADBURY and sidecar	£62 0
6002.	3½ h.p. 1912 2-speed	ALLDAYS	£37 10
5998.	3½ h.p. 1912 F.E.	RUDGE	£42 10
5993.	3½ h.p. 1912	SCOTT and sidecar	£66 0
5989.	3½ h.p. 1912	ZENITH GRADUA	£45 0
5987.	6 h.p. 1911	CLYNO and Clyno sidecar	£50 0
5986.	6 h.p. 1911	CLYNO	£35 0
5984.	3½ h.p. 1911	PEUGEOT	£22 10
5983.	3½ h.p. 1911 2-speed	BRADBURY	£35 0
5981.	5-6 h.p. 1912 A.C.	SOCIABLE	£79 0
5980.	5-6 h.p. 1911 4-cylinder	F.N.	£28 0
5977.	3½ h.p. 1912 3-speed	QUADRANT	£42 10
5975.	3½ h.p. 1912 F.E.	BRADBURY and sidecar	£40 0
5968.	8 h.p. 1912 2-speed	BAT, chain drive	£60 0
5961.	3½ h.p. 1911 standard	TRIUMPH	£33 0
5947.	3½ h.p. 1909	DOUGLAS	£20 0
5934.	3½ h.p. 1909	TRIUMPH, Roc 2-sp. gear	£30 0
5910.	3½ h.p.	CHATER-LEA-J.A.P.	£17 10
5908.	3½ h.p. 1910	CENTAUR	£20 0
5904.	6 h.p. 1912	Speed King REX, new	£40 0
5901.	5 h.p. 1911	cone clutch REX	£30 0
5883.	3½ h.p. 1911 F.E.	PREMIER	£33 0
5882.	2½ h.p. 1910	ROYAL ENFIELD	£18 0
5880.	5-6 h.p. 2-sp. 4-cyl.	F.N. and sidecar	£35 0
5870.	3½ h.p. 1912	ZENITH GRADUA	£42 10
5861.	6-7 h.p.	BAT-J.A.P.	£22 10
5850.	3½ h.p. 4-cylinder	F.N.	£18 0
5840.	3½ h.p. 1912 3-speed	BRADBURY	£30 0
5834.	5 h.p. 1911	tourist REX	£30 0
5812.	2½ h.p. 1911	MOTOSACOCHE, free engine	£22 0
5809.	2½ h.p. 1911	T.T. J.A.P.	£28 10
5799.	3½ h.p. 1911	T.T. BRADBURY	£23 0
5788.	3½ h.p. 1912 2-speed	HUMBER	£42 10
5786.	2½ h.p. 1912 3-sp.	NEW HUDSON	£37 10
5776.	5 h.p. 1911	twin REX DE LUXE	£37 10
5767.	3½ h.p. 1912 F.E.	ROVER	£42 10
5742.	3½ h.p. 1910	T.T. TRIUMPH	£32 10
5741.	2½ h.p.	F.N.	£12 10
5732.	2½ h.p. 1912 2-speed	ENFIELD	£42 10
5621.	2½ h.p. 1912 3-speed	HUMBER	£37 10
5606.	5-6 h.p. 1908 2-speed	F.N.	£20 0
5600.	2½ h.p.	GRIFFON	£15 0
5596.	3½ h.p. 1910	KERRY ABINGDON	£30 0
5559.	3½ h.p. 1908	TRIUMPH	£25 0
5543.	2½ h.p. 1911 3-sp.	lady's HOBART	£30 0
5504.	3½ h.p. 1910	free-engine PREMIER	£24 0
5441.	2½ h.p. 1911 standard	BRADBURY	£30 0
5420.	2½ h.p. 1911 2-speed	ENFIELD	£35 0
5346.	2 h.p. 4-cylinder	F.N., 1911 model	£37 10
5332.	5-6 h.p.	DE DION pattern	£33 10
5303.	2 h.p. 1903	MOTO-REVE	£15 10
5195.	6 h.p.	twin G.B.	£18 0
5055.	3½ h.p.	L.M.C., 2-speed gear	£32 0
4903.	3½ h.p. 1911	tourist REX	£27 10
4870.	5 h.p.	twin PEUGEOT	£14 0

## ASK FOR A COPY OF THE LIST.

Call and see our great show of over 300 Motor Cycle Bargains, largest & most easily accessible from every part.

Phone—5777 Holborn.  
Wires—Opifcer, London.



## NUMBERED ADDRESSES.

For the convenience of advertisers, letters must be addressed to numbers at "The Motor Cycle." When this is desired, 2d. will be charged for registration and three stamped and addressed envelopes must be forwarded replies. Only the number will appear on the advertisement. Replies should be addressed, 000, c/o "The Motor Cycle," Coventry"; or if "Lor" is added to the address, then to the number given "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown parties may deal in perfect safety by availing themselves of the Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of goods is three days, and if a sale is effected we remit amount to the seller, but if not we return the amount to the depositor, and each party to the transaction carries one way. For all transactions exceeding £ value, a deposit fee of 2s. 6d. is charged, when the fee is 1s. All deposit matters are dealt with in Coventry, and cheques and money orders should be payable to Illife & Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive answer to their enquiries are requested to regard silence as an indication that the goods advertised already been disposed of. Advertisers often receive many enquiries that it is quite impossible to reply to one by post.

## MOTOR BICYCLES FOR SALE SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

SCOTTS, 1912, the ideal motor cycle, ready for immediate delivery; £65.—Walker's, Fishburn, F. Hill. [X1]

ROVER, 1912, 3½ h.p., 3 speeds, free engine, complete; only run 100 miles; £40.—Linsley, 3 St., Darlington. [X1]

3½ h.p. N.S.U., mag. ignition, h.b.c., Whittle bell bargain, £12/12.—Turvey and Co., The Motor House, Sunderland. [X4]

3½ h.p. 1911 Triumph, T.T. roadster, h.b.c., for 65 m.p.h. on the level, not ridden 1,500 miles; a gain, £37.—Turvey and Co., The Motor House, Sunderland. [X4]

3½ h.p. Triumph, 1911, free engine, in perfect order, not done 2,000 miles. lamp, horn, watch; a gain, £40; inspection and trial invited.—Turvey and Co., Sunderland. [X4]

3½ h.p. T.T. B.S.A., new, £48/10, for immediate delivery; 5½ h.p. Triumph, free engine, new, delivered; new torpedo sidecar, patent apron and 211/11; sole agents for B.S.A., Triumph, Humber, Royal Enfields, etc., motor cycles.—Turvey and Co., The Motor House, Sunderland. [X4]

2½ h.p. Motosacocche, 1911, mag., h.b.c., Whittle bell, Palmer tyres, lamp, horn, complete; £22.—Morrison, Broughton Moor, Maryport. [X5]

3½ h.p. 341x89 Rex, as new, enamelling and plating perfect, horn, valve, tools, etc.; £29/10; get 3-speed.—Motor, 6, Devonshire Terrace, Darlington. [X5]

1912 Scott, £50; also 1910 Triumph, £25, or 1 offer; both in perfect condition, new tyres, etc. Further particulars, Lewis Pennington, Victoria Race, Kendal. [X5]

NEW Phelon and Moore, Colonial model, in stock, for cheque £65 secure; Model K. Douglas, can run 50 miles, as new, £45.—Stout's Garage, Egremont, Cumberland. Phone: 1X2. [X5]

SPECIAL to Speed Merchants.—1912-13 T.T. roadster, Calthorpe, special competition Precision engine B. and B. racing carburettor; just delivered; £47.—Muir's, Stockton. Tel.: 361. [X5]

1911 3½ h.p. Free Engine Triumph, Lucas lamp, horn, 1912 standard Bradbury, as new; 1911 free engine Rover; 1911 2½ h.p. Hobart; new 1912 chain drive Bradbury, 2-speed; 2½ h.p. new 1912 Centaur, Armstrong 3-speed, shop-soiled; best offers secure.—Stout's Garage, Egremont, Cumberland. [X5]

## SECTION II.

York and Lancashire.

B.S.A., 1911, lamp, horn, tools, Whittle bell; £34.—Wigfall, Hillsbro', Sheffield. [X5]

SCOTTS, great Scotts; delivery now, list price.—Em Cycle and Motor Co., Holderness Rd., Hull. [X5]



# LIBERAL EXCHANGES

## NEW REX BARGAINS.

	Maker's Price.	Our Price.
1911-12 3½ h.p. Tourist	£45 3	34 guineas
1911-12 3½ h.p. 2-speed de Luxe..	£59 17	48 guineas
1911-12 5 h.p. 2-sp. Twin de Luxe.; special price..		51 Gas
1912 2½ h.p. 2-speed Rex Junior de Luxe	£245 0	
1912 4 h.p. Tourist, 84½ bore x 95 stroke	£245 0	
1912 4 h.p. Free-engine Tourist	£249 10	
1912 4 h.p. 2-speed de Luxe, handle starting	£256 0	
1912 6 h.p. 2-speed Twin de Luxe	£262 10	
1912 6 h.p. 2-speed de Luxe Sidette	£272 10	
1912 6 h.p. 2-speed Twin de Luxe, chain drive..	£270 0	

**SOLD UNDER MAKER'S GUARANTEE.**  
Any model of Rex taken in exchange.

## SECOND-HAND REXES.

EX, 1912, 4 h.p., tourist, nearly new.....	£36 10
EX, 1912, 2-speed, Junior de Luxe, 100 miles .....	£32 10
EX, 3½ h.p., 1909, Tourist, very smart .....	£22 10
EX, 1910, Twin, 2-speed, de Luxe .....	£22 10
EX, 5½ h.p., twin, spring forks .....	£16 0
EX, 3½ h.p. magneto, free engine, 1909 model .....	£26 10
EX, 3½ h.p., magneto, spring forks .....	£19 10
EX, 2½ h.p., magneto, lightweight, h.b. control .....	£16 10
EX, 1911, 5 h.p., 2-speed, de Luxe, chain drive .....	£45 2
EX, 1910, 5-6 h.p., twin, very fast .....	£23 10
EX, 1912, 3½ h.p., 1912 magneto, shop-soiled .....	32 Gns
EX, 5½ h.p., light and low, h.b. control .....	£12 10

## SIDECAR COMBINATIONS.

EX DE LUXE, 5 h.p., chain drive, and spring wheel coach-built sidecar .....	£48 10
EX DE LUXE (new), 4 h.p., 1912, and new sidecar .....	£61 0
S.U., 3½ h.p., 2-speed, and sidecar .....	£25 10
EX DE LUXE, 1910, 2 speeds, and rigid sidecar, great bargain .....	£38 10
DIAN, 1911, Twin, clutch, new sidecar .....	£44 10
EX DE LUXE, 1911-12, and 1910 ros. sidecar, new .....	£60 10

## MISCELLANEOUS MACHINES.

BRADBURY, 3-speed, 1912, new .....	£58 10
TRIUMPH, 1910, clutch, splendid condition .....	£35 0
VER, 1911, clutch model; cost £55 .....	£42 0
EMIER, 3½ h.p., magneto, spring forks .....	£25 0
VAL ENFIELD, twin lightweight, magneto .....	£19 10
TOINE, 6 h.p., magneto, Saxon forks .....	£21 10
YMPC, 3 h.p., vertical engine .....	£10 0
DIAN, 1911, 5 h.p., twin clutch model .....	£39 10
TO-REVE, 1911, single, good order .....	£23 10
h.p. Twin MINERVA, h.b. control, spring forks .....	£16 10
ATER-LEA-MINERVA, 2½ h.p., Nala 2-speed, spring forks, Model de Course tyres .....	£16 10
ITE & POPPE, 3½ h.p., magneto, spring frame .....	£16 10

Easy Payments quoted on any machine.

## UNTESTED MACHINES.

each—or close Cash offer buys—

3½ h.p. <b>GLOBE</b> , h.b. control.....	£5 6 0
3 h.p. <b>REX</b> , spring forks; 2½ h.p. <b>KERRY</b> .....	£7 12 0
3½ h.p. <b>EXCELSIOR</b> . 3 h.p. <b>OLYMPIC</b> .	

## 1912 SIDECARS.

Illustrated List on application.

Exchange," with Continental motor cycle tyre	£5 6 0
de Luxe," with best tyre, apron, footmat.....	£6 5 0
de Luxe," with reversible child's seat .....	£7 7 0
de Luxe," with best coach-built body .....	£7 12 0

Improved quick-detachable joints, cranked extra strong axle and spindle, tip-up body, and caged ball races all models. Prompt delivery to suit Rexes, Triumphs, S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

**The Halifax Motor Exchange**

**Largest Rex Dealers,**

**16, WESTGATE, HALIFAX.**

Phone: 766. Telegrams: "Perfection,"

## MOTOR BICYCLES FOR SALE.

**BRADBURY, 1912, 2-speed**, remarkably good condition throughout: cost £55 few months ago, our price £36 cash; deferred terms arranged.—Hitcher's, Ltd., Morecambe. [5757]

**N.S.U.**, mag. ignition, B. and B. carburettor, h.b.e., decent condition, running order, reliable mount; £9 cash; deferred terms arranged.—Hitcher's, Ltd., Morecambe. [5759]

**ROYAL ENFIELD, 1912**, brand new, 2-speed and free engine, chain drive, makers' full specification; listed £52/10, our price £42 cash; deferred terms arranged.—Hitcher's, Ltd., Morecambe. [5760]

**DOUGLAS, 1912, 2-speed**, kick starter, clutch, speedometer, p.a. saddle, numerous spares, perfect condition; cost £58, accept £45, or near offer.—Box No. L8, 111, The Motor Cycle Offices, 20, Tudor St., E.C. [5653]

**B.S.A. Clutch**, bought July, only 1,200, practically new; any trial: var. jet B. and B., 2 belts, touring and T.T. bars, spare valves, complete, plugs, tools; highest over £40.—Bernard, 17, Princes Av., Liverpool. [5408]

**N.S.U.**, 3½ h.p., mag., Dunlops, 2-speed, free engine, and sidecar, splendid order, £22; also 3½ h.p. Hummer, free engine, spring forks and saddle, £12; 2½ h.p. Kerry, footboards, and good tyres, £8.—Yates, engineer, Sowerby Bridge. [X4822]

**DOUGLAS, 1912, Model K**, also 1912 Model L (lady's), 1,000 miles each only, unsentatched, each complete with Lucas lamp, horn, tools, spares, spare petrol tank, cyclometer, etc.; genuine bargains, £42 each.—Braddock, Marple, near Manchester. [X5291]

**TRIUMPH (Nov., 1911), F.E.**, 2,200 miles, perfect, carefully kept, new Dunlop and Rom tyres and tubes (26), new belt, back rest, spares; any examination; guaranteed, £40; also Canoelet sidecar, dark green, 400 miles, unsentatched, luggage carrier, £10/5; both £49/5.—Captain Ballard, Royal Field Artillery, Preston. [X5247]

**BAT, 5-6 h.p., T.T.**, 1912, nearly new, only run about 600, will do 70 miles per hour, side by side valves, long exhaust pipes, easy to manage, and economical, cost £52, will accept a low price; Bat, 7-8 h.p., 1911, 2-speed, Kempshall heavy tyres, long exhaust pipes, in good going order, £45, sidecar to suit. £5.—Embryo Cycle and Motor Co., Holderness Rd., Hull. [5700]

**P. and M.**, two of these famous machines for immediate delivery, list price.—Embryo Cycle and Motor Co., Holderness Rd., Hull. [5701]

**THE Following Latest 1912 Models (new)**, to be cleared at bargain prices: 3-speed Rover, 3-speed Colonial New Hudson, 2-speed Bradbury, clutch 4 h.p. Rex-Jag, standard Kerry-Abingdon, 2 clutch Kerry-Abingdons.—Apply immediately, Northern Depot, Ltd., Everything Motorish, Leece St., Liverpool. [X5398]

**GREAT Sale 2nd-hand Motor Bikes**, must be sold.—2½ h.p. J.A.P., £8/10; 2½ h.p. Rex, mag., £12; 3½ h.p. Triumph, mag., £17; 2½ h.p. Moto-Reve, free engine, 1910, £14/10; 5½ h.p. 4-cyl. P.N., with 2-speed gear, £18/18; 1910 Triumph, new condition, £26; 1909 P. and M., 3½ h.p., with 2-speed and sidecar, new condition, £26; 1910 Douglas, £26; 1910 Rex, with 2-speed gear, £20; 1912 Rex and Sidecar, practically new, £50.—Motor Cycle Exchange, 160, Young St., Sheffield. [0100]

## SECTION III.

**Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.**

**1912 Lincoln Elk, 3 h.p.**, free, as new, crate free; £29.—Merry, draper, Stonehouse. [X5484]

**1911 Douglas**, splendid condition: £27.—Shuffelbotham, 7, Delamere St. West, Crewe [X5641]

**SCOTT, 1911, 1912** lubrication, just overhauled makers, accessories; £40.—Shaw, 18, Salop Rd., Oswestry. [5771]

**BRADBURY, 1911**, all accessories, splendid condition, £25, or near; sidecar, £3.—PARRY, Laurels, Brierley Hill. [X5197]

**3½ h.p. Premier, 1912**, even firing twin, Armstrong 3-speed gear: £50, cost £63.—Sherwin, Clowne, Chesterfield. [X5339]

**1912 F.E. Bradbury**: cost £54/10 fortnight ago, must sell, accept £48, nearest.—Thos. F. Watson, Ripley, Derby. [X5467]

**1911 Rex**, free engine, 6 h.p., excellent condition, 1911 pan seat, £34, bargain.—Morton, Anderson, Oswestry. [X5476]

**3½ h.p. Rex**, mag., good condition; £16; would exchange with cash, for sidecar machine.—19, Pear-tree Rd., Derby. [X5504]

**TRIUMPH, 1908**, free engine, back rest, Whittle, in excellent condition; bargain, £26.—26, Erding Rd., Wrexham. [X5529]

**DOUGLAS, 2-speed**, free engine, new week ago; hand-some accessories; £45; wanted, T.T. Douglas.—8, Selborne St., Walsail. [5851]

**BAT-J.A.P.**, 6 h.p., just overhauled by makers, Jones speedometer, Lucas lamp; £40.—Leeke's, 274, Dudley St., Wolverhampton. [X4491]

**5-6 h.p. F.N. Motor Cycle**, mag., central intake, climb anything; £15, great bargain.—Jenkins and Co., 79, Bath Rd., Wolverhampton. [X5587]

**1912 Champion-Jag, 4 h.p.**, Armstrong gear, done 200 miles, £40; also sidecar, £3.—Particulars, Edwards, 378, Ossington Rd., Derby. [X5495]

# REY

**5, HEATH STREET, HAMPSTEAD.**

Close to Hampstead Tube Station.  
Tele.: "Rey, Hampstead." Tel.: 2678, P.O., Hampstead

**Terms: CASH, EXCHANGE, or EXTENDED PAYMENTS.**

## End of Season 1912 Shop Soiled Machines at Bargain Prices.

<b>RUDGE</b> , Multi-speed .....	£50 0
<b>SINGER</b> , 4 h.p., 2-speed .....	£54 0
<b>BRADBURY</b> , F.E. Model .....	£43 0
<b>BRADBURY</b> , T.T. Model .....	£38 0
<b>RUDGE</b> , T.T. Roadster .....	£39 0
<b>ZENITH</b> , 8 h.p. ....	£58 10
<b>TRIUMPH</b> , F.E. Model .....	
<b>DOUGLAS</b> , Model H .....	£42 0
<b>CLYNO</b> , 5-6 h.p., 2-speed .....	£59 10
<b>A.C.</b> , standard Model .....	£80 0
<b>LINCOLN-ELK</b> , 3 h.p. Model..	£27 0
<b>MATCHLESS</b> , No. 5, .....	£62 0

## THE FAMOUS "REY" SIDECARS.



£6 5s. £5 5s.

Side-entrance Models, Wicker, £7. Coach-built, £9 10s.  
2 Elegant Cane Models, Side-entrance, £10 10s.  
All complete with Hutchinson or Michelin 26 x 2½ in. tube and tyre, and quick detachable joints.

**LIBERAL DISCOUNTS TO THE TRADE.**

**IMMEDIATE DELIVERY**

**OF 1912 MACHINES, OVER 60 IN STOCK OF LEADING MAKES, INCLUDING P. & M.'s, SCOTT, MORGAN RUNABOUTS, A.C.'s, AND G. & N.'s.**

**TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.**

## SECOND-HAND

£28. F.N., 4-cylinder, 5-6 h.p. ....	1911
£25. F.N., 4-cylinder, 5-6 h.p. ....	1910
£26. F.N., 4-cylinder, 5-6 h.p., with clutch .....	1910
£28. TRIUMPH, F.E. Model .....	1910
£38. RUDGE, T.T. Roadster .....	1912
£46. ZENITH, 8 h.p., and sidecar (Millford) ....	1911
£37. TRIUMPH, T.T. Roadster .....	1911
£37. REX, 6 h.p., clutch, speedometer and sidecar .....	1911
£67. ZENITH, 6 h.p., with sidecar, as new .....	1912
£20. REX, 3½ h.p., good order .....	1910
£39. BRADBURY, 3½ h.p., as new .....	1912
£30. HUMBER, 3½ h.p., 2-speed, like new .....	1911
£27. LINCOLN-ELK, 3 h.p., as new .....	1912
£41. DOUGLAS, Model H, 2-speed, as new .....	1912
£280. F.N. Car, 10-14 h.p., hood and screen, accessories, as new .....	1912
£180. BAYARD, 8 h.p., 4-cylinder, 3 weeks old, quantity of spares .....	1912
£280. F.N. Car, 10-14 h.p., as new .....	1912

All Accessories included on S.H. at the price advertised.

We are now Booking Orders for 1913 MACHINES and RUNABOUTS, now is your time to Book with THE ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

Only Address: **REY, 5, HEATH STREET, HAMPSTEAD.**



## OUR REED CANE BODIES have undoubtedly hit the mark.

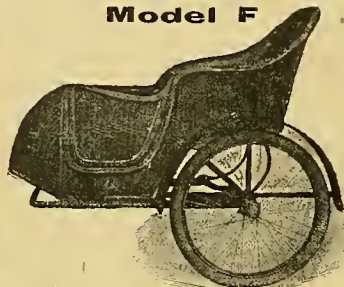
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wickerwork, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

### Model G



£7 10s.

### Model F

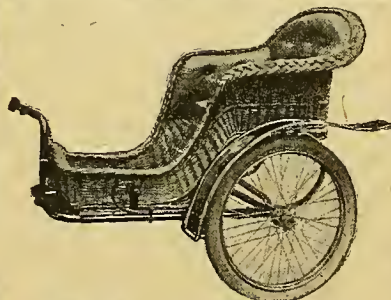


£8 8s.

Complete as above and carriage paid.

## SMART, LIGHT, AND STRONG.

Our Model de Luxe Sidecar is admitted to be the finest all-round value ever offered. Cranked axle, quick detachable joints, caged ball races, with extra stout wheel spindle. Guaranteed 12 months.



£6 - 5 - 0

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for List.

### MISCELLANEOUS BARGAINS.

New Rubber-studded Covers, 26 x 24, beaded	17/6
Water Circulating Pump	5/-
Small Tricar Radiator	6/-
Triumph pattern Handlebar, new	6/6
Mabon Clutch, fits Rex	35/-
1912 B 104 padded Saddle, new	16/6
New Prested Accumulators	7/6
New Prested Trembler Coil	15/-
Lycett's "Tup Tube" Toolbags	7/-
2 h.p. Stationary Engine, water-cooled	£4 10
Albion Clutch, fits Triumph	47/6
New Screw-cutting Lathe, 4in. centres	£6 10

**Farrar's Motor Exchange**  
19, 21, 23, 25, Hopwood Lane,  
**HALIFAX** (Two minutes from G.P.O.)  
Telephone 919.

## MOTOR BICYCLES FOR SALE.

1910 Indian, 5h.p., just overhauled, lamp, etc.; £31/10, or exchange 3h.p. T.T. Triumph.—W. Nolan, 24, Oxtou Rd., Birkenhead. [5863]

SINGER, 5h.p., Bosch, Amac var., lamp, horn, tools, spares, new Dunlops, just overhauled; buying twin.—Harvie, Mountlands, Altrincham. [5850]

TRIUMPH, 1908, 3h.p., Bosch mag., good tyres, new belt, P. and H. lamp, and all spares, in perfect order; £21—33, Park Grove, Derby. [X5477]

1912 4h.p. Regal-Precision, Villiers free engine, not done 1,000 miles, perfect condition; any examination; £43.—Tagg, Ashfields, Newcastle, Staffs. [5949]

1912 New Hudson, 3h.p., free engine, 3-speed, accessories, etc., condition as new; cost £64, nearest offer to £46.—Mainwaring, Goodfellow St., Tunstall. [X5411]

3h.p. Kerry, Watawata, Amac carburetter, h.b.c., adjustable pulley, new Continental, compression perfect; £10/10.—105, Sydney St., Barton-on-Trent. [X5256]

TRIUMPH, 1912, special T.T. racer, very fast, condition as new, 2 spare tyres, 3 belts, etc.; any trial; £40, or near offer.—E. S. Brittain, Orient Lodge, Buxton. [X6447]

SCOTT, 1912, condition as new, complete with lamp, horn, watch, Cowey speedometer, piston seat; £62/10.—Hudson, School House, Barrow Hill, Chesterfield. [5828]

1912 Standard Bradbury, done 600 miles, new Pedley tyre on back, X.L. all saddle, 2 pairs footrests; £38, or near offer; any trial, very fast.—Fox, Barracks Golf Club, Staffs. [X5520]

1912 3h.p. Free Engine Rudge, new June, £40, in splendid condition; 1912 3h.p. free engine Excelsior, £30, guaranteed in good order.—Thos. Booth, Frodsham, Cheshire. [X5472]

1910 7h.p. Chater-Lea-Pengoe, Bosch, Druids, B.R., Kempshall and Palmer tyres, just been overhauled, perfect, smart appearance, all accessories; £23, bargain.—T. W. Bentley, 159, Waterloo Rd., Burslem. [5857]

N.S.U., 3h.p., mag., B. and B. h.b.c., Lyso belt (nearly new), footboards, Brooks saddle, 2 brakes, spring forks, 24in. wheels, splendid machine, reliability itself; photo sent; £18.—Clifford Jarman, Oakdene, Wrexham. [5834]

1907 Triumph, fitted with Senspray carburetter, 1910 ball bearing Bosch mag., Bates special heavy back tyre, Palmer front, tubes unpunctured, Lyso belt, Sturmer-Archer 3-speed gear fitted engine, fitted with 1909 cyl. piston, first-class sidecar machine; first cheque over £30 secures.—Horswill, 103, Brook St., Chester. [5784]

TRIUMPH, 1910, free engine, condition as new, F.R.S. spring seat, and numerous spares, bargain; £35; Enfield, 1911, 2h.p., lightweight, been carefully used, almost new, £26; Minerva 3h.p. 1912 B. and B. h.b.c., mag., in perfect condition throughout, £14; A.J.S. 1912 lightweight, 2h.p., only ridden 600 miles, accept £25.—Pollard's, Bridge St., Wrexham. [X4820]

SINGER, 2h.p., 2-speed, free engine, not done 300 miles, perfect in every detail, cost £50, for immediate sale £37/10; Rudge, free engine, Millford 16 in. sidecar, Lucas lamp, speedometer, and spares, a bargain, £52/10, or will separate; Douglas, 2-speed, free engine, used for demonstration only, offers; Millford £16/16 radial castor wheel, art cane, run 1,000 miles only, £11/10.—J. H. Widge and Co., New Rd., Willenhall. [X5350]

1912 Scott, brand new, £65, from stock; 1912 3h.p. N.S.U. twin, with 2 speeds and free engine, only ridden 250 miles, just like new, £38; 2 Rudge Multis, absolutely like new, £55 each; 1910 free engine Triumph, new back tyre, £38; 1911 3h.p. Rex Speed King, fine order, £28; 5h.p. Vindec, twin, Bosch mag., h.b.c., bargain, £20; 1911 3h.p. free engine Singer, a beauty, £35; 1912 Clyno and sidecar, very little used, £75; Motocycle, accumulator, good tyres, perfect order, £40; 1912 spring, forks, £9; 3h.p. Rex, spring forks, accumulator, trembler, £10; 3h.p. V.S. Bosch mag., 2 speeds and free engine, a bargain, £14; exchanges are our speciality. Write at once.—The North Wales Motor Exchange, Rhosdon, Wrexham. Tel.: 283. [X5528]

## SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

ROYAL Enfield Twin Lightweight, 1910; price £18.—23a Goudon Rd. Coventry. [X5628]

£15.—Zenith-Gradua, 3h.p., 1912 B. and B. var. jet, free engine perfect.—Goth, 2, Kent St., Leicester. [5782]

MULTI Rudge, 3 months old, perfect condition, with or without sidecar.—Oshorne, Weston, Towcester. [X5471]

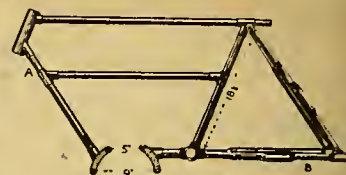
FOR Sale, 3h.p. motor cycle, perfect condition; £12, or near offer.—256, Wellingborough Rd., Northampton. [X5422]

1912 Clutch Triumph, just overhauled by makers; £247, or close offer.—62, Cedar Rd., Northampton. [5855]

INDIAN (Red), 1911, 5h.p., free engine, little used; £26/10.—Walker, 130, Ravenhurst Rd., Harborne. [X5569]

1912 3h.p. Zenith-Gradua, purchased July, not done 700 miles, as new; 40gns.—126, Cambridge St., Leicester. [X5515]

9h.p. Bat, splendid condition, 1910, very fast; £29, would exchange for good Triumph.—Satchwell, High St., Harborne. [X5461]



## MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker Price 32/6 each.  
Rigid forks, 7/6 extra. Druid forks 45/- extra.  
Enamelled and plated—first-class style.

### ONE ONLY.

1911 3 1/2 h.p. PREMIER, Armstrong 3-speed gear, brand new; £46

### ONE ONLY

1912 8 h.p. MORGAN Runabout, 2-seater, ready for delivery, brand new; 85 Gns.

## Nothing Extra for Easy Payments.

We are prepared to supply almost any make of New 1912 Motor Cycles for

**1/4 DOWN**

Balance in 12 equal Monthly Payments.

### SECOND-HAND BARGAINS.

1910 SCOTT, a beauty	£32 0
4-cylinder F.N., magneto, spring forks	£16 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, magneto, Druids, 26in. wheels	£16 0
3 1/2 h.p. TRIUMPH, 1907, magneto	£24 0
4 h.p. 1911 QUADRANT, Roc, 2-speeds	£30 0
3 1/2 h.p. 1910 L.M.C., Bosch, h.b. control	£22 0
3 1/2 h.p. 1910 TRIUMPH, beautiful order	£33 0
3 1/2 h.p. HUMBER, 2-speed model, Bosch	£23 0
1911 (Nov.) 3 1/2 h.p. RUDD, free engine	£39 0
2 h.p. WOLF, magneto	£15 0
1910 8 h.p. BAT, M.O.V., 2 speeds	£45 0
1911 Lady's HOBART, Armstrong 3-speed	£36 0
3 1/2 h.p. Twin PREMIER, fine machine	£25 0

### SINGLE-CYLINDER REXES.

3 1/2 h.p. 1908 Tonist, 1909 engine	£23 0
3 1/2 h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

### TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p. Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0

### SIDECAR COMBINATIONS.

8 h.p. BAT, 2 speeds, Millford sidecar	£50 0
4-6 h.p. 2-speed 1908 REX and sidecar	£33 0
7-9 h.p. 2-speed REX and sidecar	£53 0

## £4 DOWN SECURES ANY OF THESE. BALANCE 25/- MONTH.

2 h.p. WOLF, magneto, 26in. wheels, A.J.S. engine	£15 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, magneto, Druids	£16 0

## £5 DOWN SECURES ANY OF THESE. BALANCE 30/- MONTH.

4-cylinder F.N., magneto, spring forks	£16 0
3 h.p. 1908 REX, Bosch magneto	£17 0
5 h.p. Twin REX, spring forks, h.b. control	£16 10
4 1/2 h.p. WOLF Tricar, 2 speeds	£19 0
4 1/2 h.p. HUMBER Tricar, 2 speeds, wheel steering	£19 0

### MISCELLANEOUS BARGAINS.

Twin Rex Motor Cycle, less engine	£5 0
3 1/2 h.p. Rex engine, two-stroke	£4 15
Powell's 2-speed, free-engine back wheel	£4 15
New Basket Body, upholstered green	£1 0
One ditto, upholstered red	£1 0
1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Senspray Carburetters	28/6
Camel rin. Rubber Belting	per foot 1/3
Trailer, 26in. wheels	25/-
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Bosch V Twin Magneto, 48 degrees	£3 10

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# SCOTT'S

Victoria Motor House, Powell St., Halifax.

ALL MACHINES SEVERELY TESTED BEFORE  
LEAVING THE WORKS.

ALL MACHINES GUARANTEED AND  
ACTUALLY IN STOCK.

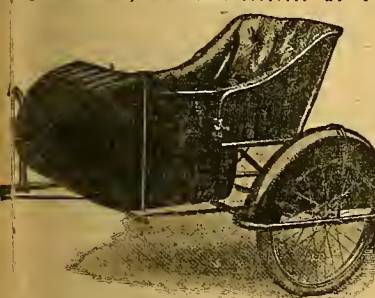
## CLEARANCE SALE!

One Multi Rudge in stock.

RUDGE 2-speed and free-engine and adjustable pulley engine starts with the back wheel on the ground	256 10
RUDGE free-engine model	255 0
RUDGE standard	248 15
RUDGE T.T.	248 15
ZENITH-GRADUA, new, 3 1/2 h.p.	255 0
NEW HUDSON, 3 1/2 h.p., 1912, 3 speeds	244 0
HUMBER, 1912, 2-speed, handle starting	244 0
P. & M., as good as new, complete with sidecar	245 0
NEW HUDSON Lightweight, 2 1/2 h.p., 1st, like new, 3-speed gear, a bargain	235 0
RUDGE, Standard 1912, 3 1/2 h.p.	238 0
PREMIER, 3 1/2 h.p., 1912, complete with sidecar, 3 speeds	255 0
NEW HUDSON, 3 1/2 h.p., 1912, not done 300 miles, 3 speeds	246 10
HUMBER, 3 1/2 h.p., 2-speed and free engine, take a sidecar	239 0
TRIUMPH, 3 1/2 h.p., late 1908, a beauty	226 0
TRIUMPH, with 2 speeds and free engine	226 0
TRIUMPH, clutch model, 1910 1/2	236 0
LINCOLN ELK, 3 1/2 h.p., 2-speed and kick starter	238 0
REX, 1908, 3 1/2 h.p., h.b.c.	216 0
P. & M., complete with 6 guinea sidecar	232 0
REX, 1910, 5-6 h.p., 2-speed, and free engine complete with sidecar	238 0
REX, 1911, 2-speed, free engine	236 0
CHAMPION, 1911, like new	228 0
F.N. Lightweight, 1911-12, shaft drive, shop-soiled, complete with 10 worth of spares	238 0
F.N., 5-6 h.p., fitted with 2-speed gear and free engine at a cost of over £80, a bargain	238 0
MINERVA, 3 1/2 h.p., h.b.c., magneto ignition, spring forks	215 0
TRIUMPH, 1907, 3 1/2 h.p.	220 0

50/- down and 5/- per week secures the following:

QUADRANT, 3 1/2 h.p., h.b.c.	210 10
F.N., 4-cylinder	216 0
N.S.U., 3 1/2 h.p.	216 0
QUADRANT, 2 1/2 h.p., spring forks	28 0
REX and Forecar, complete, with free engine, h.b.c.	214 0
8-guinea Sidecar, second-hand	24 4



Guaranteed for 12 Months.

As Illustrated, 10 GUINEAS.  
Write for Sidecar Catalogues.

We claim to have the finest and strongest Sidecar on the market. No fear of a heel dropping off.

WATFORD SPEEDOMETERS

11 Models. Liberal allowances made on old ones.



Footrests, post paid 2/10

SCOTT, Victoria Motor House,  
Powell Street, HALIFAX.

Telephone-433 National.

Telegrams-"SCOTT Powell Street, Halifax."

### MOTOR BICYCLES FOR SALE.

2 3/4 h.p. 1912 Twin Hammer, Armstrong 3-speed, 21in. back tyre, double footrests, belt guard; £42 cash; or near offer: also	
3 1/2 h.p. 1912 Free Engine Triumph, new at Easter; or near offer; both machines have been ridden about 1,200 miles, are as new, and complete with lamp, h.m., spare belt, fastener, valve, and tools—Geoffrey Smith, Dunelm, Northumberland Rd., Coventry. [X2077]	
1912 4 1/2 h.p. O.K. Precision, F.E. clutch, 2 1/2 Hutchinsins, B. and B., Whittle; £40-10, Lincoln St., Birmingham. [X5414]	
ALLDAYS, 1912, 3 1/2 h.p., Roe 2-speed and free engine, large lamp and horn, hardly soiled; £40-10, Lewin, High St., Kettering. [X5618]	
TRIUMPH, 2-speed N.S.U., new tyres, tubes, B. and B. carburettor, etc. champion hill-climber; £22-11 Horton Abber St., Nottingham. [X4811]	
INDIAN 5 1/2 h.p. Twin 1911, excellent condition, little used, lamp, horn; £42, or nearest offer—Lees, chemist, Carrington, Nottingham. [X5194]	
3 1/2 h.p. 1912 B.S.A., 2 speeds, free engine, kick starter, 32 new July 23, 2 tyres, done 600 miles, as new; £54-10, Martin, Harrowby Rd., Grantham. [5796]	
1912 Ariel, var. gear, decompressor, as new, £40-4 1/2 h.p. Faimir, 2-speed, mag., good sidecar machine, £22-36, Hainton Av., Grimsby. [5960]	
TRIUMPH, 1911, 3 1/2 h.p., free engine, fitted with 1912 forks, very little used, and equal to new; £42-10 The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0155]	
TRIUMPH, 1911, 3 1/2 h.p., T.T. roadster, fast machine, in good condition; £30-10 The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0156]	
MATCHLESS-T.A.P., 1911, 3 1/2 h.p., free engine, excellent condition; £35-10 The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0157]	
TRIUMPH Motor Cycles—Latest 1912 free engine and T.T. roadster models in stock; buy your machine from the official agents for Birmingham and district—The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0158]	
BAT, 4 1/2 h.p. Stevens engine, B. and B. carburettor, tyres good, battery ignition, late 1906, perfect condition; £12-10, G. E. Potter, 24, St. Mary St., Stamford. [X5203]	
LADY'S 3 1/2 h.p., 2-speed and free engine, chain drive, footboards, large lamp and horn, in perfect order and condition; £35-10 Savory, Pycheley Rd., Kettering. [X5517]	
TRIUMPH T.T. Roadster, new August, lamp, horn, Cowey indicator, spares, and overalls; £46-10 machine only, £42-10, Ball, 6, Wheelers Rd., Birmingham. [X5474]	
FOR Sale, Singer, 2 1/2 h.p., 1912, perfectly new; also, Bradbury, late 1911, 3 1/2 h.p., free engine, 2 speeds, Montgomery sidecar; what offers?—Johnson, Motor Wks., Wainfleet. [X5193]	
2 1/2 h.p. Kerry, 1912 mag., 1911 B. and B. h.b.c., 24 pedals and hinged footboards, belt end tyre, excellent, lamp, and tools—Bailey, Ethel House, New Balderton, Newark. [5671]	
HUMBER, 3 1/2 h.p., new August, 1912, Dunlops, only ridden 50 miles, as good as new, owner buying lightweight; photo; £32/10—Ruthven House, Bloomfield Rd., Coventry. [X5444]	
1911 5 1/2 h.p. Peugeot, Chater-Lea, free engine, good condition; seen by appointment; £29/10, or exchange good lightweight same value. — Frisby, Dean's Terrace, Uppingham. [5765]	
HUMBER, 1911 1/2, 3 1/2 h.p., 2-speed, new condition, 1,500 miles, new Dunlop back, lamp, horn, spares; £36; take push bike part exchange—Eden, Marston Green, Birmingham. [X5462]	
1912 Improved 2-speed 4 1/2 h.p. Rex de Luxe, condition as new, Lucas lamp, riding accessories, spares, only used as an engineer's pleasure mount; £46-10, Copley, St. Catherine's Rd., Lincoln. [X5294]	
1911 1/2 Rudge, T.T. model, 1912 cylinder head, competition machine, "excellent" condition, overhauled at works, any trial, would fit touring bars; £35-10 or offer—74, Bridgeford Rd., Nottingham. [X5469]	
1910 Motoenocoche, free engine, adjustable pulley, Whittle belt mag., specially tuned up, and very powerful, as good as new, electric lamp from vacuumator, etc.; £20-10, C. W. Pennell, Lincoln. [X5330]	
DOUGLAS, 1911 model, guaranteed perfect, splendid condition, all spares, etc., very little used; bought war; take £25; first cheque secures—Laughton, 97, Dennis Rd., Sparkbrook, Birmingham. [X4821]	
DOUGLAS, 2 1/2 h.p., in excellent running order, just overhauled by the makers, engine practically new, with various 1912 refinements; owner buying 1913 model; may be seen by appointment—Box 1,410, The Motor Cycle Offices, Coventry. [X5434]	
ROYAL, 3 1/2 h.p., 1912, Sturmer-Archer 3-speed gear, delivered June last, ridden 1,400 miles; listed at £39, will accept £49/10; would take a sidecar anywhere; no offers or exchanges entertained; may be seen by appointment—P. W. Johnson, 22, St. George's Rd., Coventry. [X5283]	
TRIUMPH, 1912, clutch model, £55, just arrived; new Zenith Gradua, 3 1/2 h.p. T.T. Rudge, 2 1/2 h.p. Singer, lightweight, what offers? 1911 Triumph, standard, not ridden 1,000 miles; £35; 1912 4 1/2 h.p. Singer and sidecarriage, £57/10-10 must sell—Midland Cycle Co., Coalville, Leicester. [X5611]	

## Collier's Motories,

Westgate, Halifax, England.

### 1912 BRADBURY'S.

THE IDEAL SIDECAR MACHINES.

The greatest power in single-cylinder machines, giving maximum efficiency and freedom from attention.

3 1/2 h.p., tourist	£58	3 1/2 h.p., 2-sp., chain	£58 10
3 1/2 h.p., 2-speed, belt	£55	3 1/2 h.p., 3-speed	£58 10

SPECIAL EXCHANGE QUOTATIONS.

CASH, EXCHANGE, OR EASY PAYMENTS.

REX-JAP, 1912, 6 h.p., 2-speed, new	£71 8
REX, 1912, 6 h.p., 2-speed, latest production, chain drive	£70 0
REX, 1912, 4 h.p. Tourist, 8 1/2 x 95, handle starting, NEW	£46 0
REX DE LUXE, 1912, 4 h.p., 2-speed, new	£56 0
HUMBER, 1911, 3 1/2 h.p., with sidecar, specially good condition	£34 10
INDIAN, 1911, 5 h.p., Clutch, sp. endid condition	£39 10
ANTOINE, 6 h.p., Twin, magneto, spring forks	£21 10
REX DE LUXE, 1911, Twin, 2-speed, new, 1912	£53 10
REX, 1911, 3 1/2 h.p., Tourist, new and unused, 1912 waterproof magneto	34 gns.
REX DE LUXE, 1911, 3 1/2 h.p., 2-speed, and Sidecar, very smart lot, with makers' guarantee, brand new	50 gns.
REX, 1911, 3 1/2 h.p., Tourist, very reliable	£29 10
REX, 1910, Twin, special finish	£29 10

### SPECIAL OFFER.

1912 2-speed 2 1/2 h.p. REX Junior de Luxe. Only had road tests, accept £32 10 Particulars on application

REX, 1911, 5 h.p., sidette coach built, spring wheel, chain drive	£48 10
MINERVA, 2 1/2 h.p., Nala 2-speed gear, 24in. tyres, spring forks	£16 10
REX, 1911, 3 1/2 h.p. Tourist, 100 miles only	£32 10
REX, 5 1/2 h.p., Twin, spring forks	£16 10
MINERVA, 4 1/2 h.p., Twin, spring forks	£16 10
SCOTT, Water-cooled, 2-speed, special bargain	£33 0
OLYMPIC, 3 h.p., special price to clear	£6 10
MOTO REVE, 2 h.p., single-cylinder, very fine condition	£19 10
REX, 1909, 3 1/2 h.p. model, very good and smart	£22 10
BAT, 3 1/2 h.p., magneto, spring frame and wheels	£16 10
TRIUMPH, engine model	£35 0
REX, 3 1/2 h.p., light and low, splendid running order	£12 10
REX, 3 h.p., spring forks, wants attention	£4 15

### SUNDRIES.

New 800ft. F.R.S. Lamp, grid generator	35/-
Twin Rex de Luxe, less engine	£7 10
Phoenix Forecar, less tyres	17/8
Simp-soiled Cane Sidecar Body	16/6
1912 Bradbury 2-speed Gear, NEW	£7 0
24 x 24 Clipper Covers, 10/6; Tubes	5/9
112 125. Montgomery Sidecar, almost new	£6 8
Fuller's 20-amp. Accumulators, NEW	11/9

### TRICARS AND CARS.

3 1/2 h.p. P. & M., 2-speed, Humber Tricar	£13 10
4 1/2 h.p. PHOENIX, 2-speed, Trimmo magneto ignition	£15 10
4-cylinder 2-seater WOLSELEY Car, recently overhauled, great bargain	£23 10
4 1/2 h.p. W.C. 2-speed MONOCAR, open frame	£15 0

### COLLIER'S 1912 SIDECARS.

"Popular," Clipper or Continental tyre	£5 5 0
"Sutcliffe" type with best tyre, apron, etc.	£6 6 0
Side-entrance body	£7 10 0
Ditto, with best coach-built body	£7 12 8
Improved Quick Detachable Joints, Cranked Extra Strong Back Axle and Spindle to all Models. Prompt delivery to suit Rexas, Triumphs, N.S.U.'s, Indians, and any other make.	

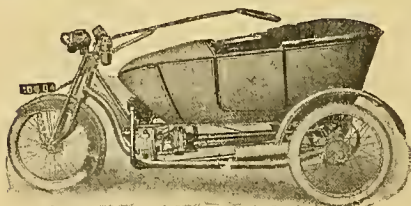
Discount to trade. Exchanges entertained.

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A43



# ROBERTSONS

## 1913 "WALL"



5 H.P., 2-Speed, Shaft Drive.  
100 Guineas. Come and try it.

**1913 C.M.C. CYCLECAR, 100 Guineas**  
7 H.P. W.C., 3 SPEEDS and REVERSE

## New 1912 Motor Cycles

Scott, Zenith, Bat, New Hudson,  
Norton, Douglas, Triumph, Rudge,  
Matchless, etc.

## SECOND - HAND 1912.

- 1234 **MATCHLESS, 8 H.P. 2-SPEED,**  
Twin belts, F.R.S. and P. & H. lamps,  
P.M.C. coach built sidecar, 4 1/4 generator,  
4 1/4 speedometer, spare cover and tubes,  
etc., etc. Cost £112 in June ..... **£78**
- 1227 **BRADBURY, 3 1/2 H.P., 2-SPEED,**  
Belt drive, lamp, horn, and tools, like new... **£39**
- 1231 **CLYNO & SIDECAR, lamp,**  
horn, Cowey, tools. Cost £92 ..... **£72**
- 1203 **IVY PRECISION, 3 1/2 H.P. T.T.**  
MODEL. Ridden about 100 miles ..... **£35**
- 188 **NEW HUDSON, 3 1/2 H.P., 3-**  
SPEED GEAR. SHOP-SOILED ONLY ..... **£54**
- 1175 **ZENITH, 3 1/2 H.P. In perfect order.**  
Lamp, horn, and tools ..... **£44**
- 1194 **ZENITH, 6 H.P. Beautiful order.**  
Lamp, horn, and tools ..... **£62**

### 1911.

- 1226 **TRIUMPH, 3 1/2 H.P. Mabon clutch.**  
Lamp, horn, and tools ..... **£38**
- 1229 **TRIUMPH, 3 1/2 H.P. CLUTCH**  
MODEL. Lamp, horn, and tools ..... **£40**
- 1173 **BAT, 6 H.P. New condition. Lamp,**  
horn, and tools ..... **£36**
- 1142 **BRADBURY, 3 1/2 H.P. Fine order.**  
Lamp, horn, and tools ..... **£34**
- 1204 **BRADBURY F.E., 3 1/2 h.p.**  
All accessories ..... **£36**
- 1207 **F.N., 4-CYLINDER, 5-6 H.P., 2-SPEED.**  
Lamp, horn, and tools ..... **£38**
- 1217 **HUMBER, 2 1/2 H.P., 3-SPEED.**  
Splendid order. Lamp, horn, and tools ..... **£28**
- 1208 **SCOTT, 2-SPEED, 2-STROKE, 2-CYL.**  
water-cooled. Suitable for a lady ..... **£44**
- 1192 **PREMIER, F.E., 3 1/2 H.P. Fine**  
order. Lamp, horn, and tools ..... **£36**
- 1200 **ZENITH, 6 H.P. Splendid for sidecar.**  
Lamp, horn, and tools ..... **£52**
- 1149 **ZENITH, 3 1/2 H.P. Good appearance.**  
Lamp, horn, and tools ..... **£36**

## MISCELLANEOUS.

- 1161 **1910 SCOTT, 3 1/2 H.P., 2-SPEED,**  
2-STROKE. Lamp, horn, and tools ..... **£28**
- 1211 **4 H.P., STEVENS, Magneto, H.B.**  
control, spring forks, lamp, horn and tools ..... **£16**
- 1221 **1910 PREMIER, 3 1/2 H.P. 2-CYL.**  
Lamp, horn, tools. Most excellent condition ..... **£29**
- 1230 **1910 CHATER-J.A.P., 6 H.P.**  
Lamp, horn, and tools ..... **£26**
- 1232 **1910 BROWN, with 1912 N.S.U.**  
2-SPEED GEAR. All Accessories ..... **£29**
- 1154 **1903 F.N., 4-CYL. In perfect order.**  
Lamp, horn, and tools ..... **£19**

# ROBERTSONS

TELEPHONE: MAYFAIR 5767

157b, GREAT PORTLAND STREET, W.

## MOTOR BICYCLES FOR SALE.

PLASTOW, Grimsby, has the following machines on offer: 1912 Douglas, Model K, new a month ago, run 100 miles only, £44; Douglas, Model G, £41; 1911 F.E. Triumph, £37; 1911 Rudge, N.S.U. 2-speed, with Muntgomery sidecar £39; 1911 Douglas 2-speed, £31; 1911 Premier lightweight, £22. [X5445]

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

NEW and 2nd-hand Motor Cycles of all makes at greatly reduced prices.—Lambert, Thetford. [X4429]

FREE Engine Triumph, 1909 model, in real good order; £28.—3a, Bridge St., Cambridge. [X4630]

1908 Model Triumph, in real good order and condition; £23.—37, Searle St., Cambridge. [X4631]

TRIUMPH, free engine, 1909, carefully used, Palmer cords, Whittle; £30, lowest.—Robinson, Sandy, Bedfordshire. [5879]

2 1/2 h.p. F.N., mag., spring forks, adjustable pulley, 24 tyres good, new Dunlop back; £11/10. — Bird, Harrold, Beds. [5859]

EASY Payments.—Motor cycles, any make; £10 deposit, balance monthly.—General Trading Company, Gt. Yarmouth [X3058]

2 1/2 h.p. Minerva, Amac carburettor, new trembler coil, 22 good tyre, new handle-bars, all in good running order; £8.—G. Seaman, Hunstanton. [X5359]

ZENITH, 3 1/2 h.p., 1911, lamp, horn, speedometer, watch, Kempshall back, good machine; £30.—Arbon Dyson, Albert St., Gt. Yarmouth. [5747]

DOUGLAS, model K, picked demonstration machine, used twice only, spring seat pillar, backrest, special exhaust box, very quiet, guaranteed as new; £45.—Ivel Garage, Biggleswade. [5968]

TRIUMPH T.T., 1911, picked engine, all spares, 2 belts, P. and H. lamps, horn, handle-bar mag. control, also roadster bars, seen any time; £39, or close offer.—S.B., 34, Green St., Cambridge. [X4459]

### SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

1912 B.S.A., as new; any trial; best offer accepted.—Harold Herbert, Evesham. [X5485]

1912 New Hudson, 2 1/2 h.p., as new; letters only; £43.—Purcell, Belle Vue House, Malvern. [5670]

2 1/2 h.p. Rex (1908), Bosch mag., Dunlop belt, low 4 frame, wants overhauling; cash offers.—Philpott, Ledbury. [X5202]

3 1/2 h.p. Quadrant, mag., h.b.c., lamp, horn, complete; £216.—low saddle, good condition.—Motorist, Arden, Llanelly. [X5599]

EXCELSIOR, 3 1/2 h.p., new last April, N.S.U. 2-speed gear; cost £52, accept £38/10, bargain.—Lewis, Tregroes, Llandysil. [5682]

ZENITH-ORADUA, 1911, as new, with sidecar, or separate; 1912 clutch Triumph, 100 miles; 2 1/2 h.p. 1910 twin, offers.—Thomas, Aberfan, Merthyr. [X5473]

1910 2 1/2 h.p. F.N., shaft drive, 2-speed, free engine, new heavy tyres, 2 bags and tools; any examination; £22, offers.—41, Church St., Blaenau Ffestiniog. [X5416]

3 1/2 h.p. Ariel-Minerva, h.b.c., dry ignition, 26in. wheels, 32 spring forks, all accessories; bargain, £10/10—ride 50 miles to bona-fide purchaser.—Morley, Builth. [X5318]

F.N., brand new, delivered August 18th, 1912, 5 1/2 h.p., 2-speed, H.P. clutch, steel-timbed Englisher covers both wheels, all latest improvements, butt-coded tubes in tyres, one butt-ended tube spare, Hiller lamp and generator, best nickel Serpentine horn; paid £60/11 will sell for £55; no offers.—Box L8,636, The Motor Cycle Offices, 20, Tudor St., E.C. [5067]

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

1912 New Free Engine Triumph.—Soul, 11, High St., Oney. [5858]

DOUGLAS, 1911, 2 1/2 h.p., 2-speed and free engine; £30.—Layton's, Bicester, Oxon. [X5559]

TRIUMPH, free engine, late 1911, horn, good condition; price £40.—Eldridge, Cinderford, Glos. [5683]

KERRY, 3 1/2 h.p., 1911, fitted with carriage body sidecar, accessories; £38. — 63, Frogmore St., Bristol. [X5570]

DOUGLAS, 1911, in perfect order throughout, all accessories; £27/10; only requires trying.—Gibb, Gloucester. [5308]

ZENITH, 6 h.p., 1912, excellent condition throughout; lowest, £56; with accessories.—Heybourn, Motore, Maidenhead. [5383]

MINERVA, 3 1/2 h.p., tyres and tubes good, one spare cover, in constant use, good condition; £8.—Kirby, Blackmoor, Hants. [5681]

MINERVA, 3 1/2 h.p., m.o.d.v., very fast and reliable, thorough good condition, climb anywhere; £14.—Backhouse, Cosham, Hants. [5749]

For CLASS & QUALITY  
AT  
BARGAIN PRICES  
GET INTO TOUCH WITH

# TAYLORS

Call and see the big advantages we offer in

HIGH-GRADE MOTOR  
CYCLES, NEW and  
SECOND-HAND, and in  
all Fittings and Accessories for Motor Cycling.



- 1912 6 h.p. A.C. Sociable de Luxe, fitted with front brakes, non-skid tyre, windscreen, just delivered, ready to drive away, 2 speeds, foot-starter ..... **£39 15**
- 1912 5 h.p. A.J.S. and Gloria Sidecar, new F.R.S. lamp set, post horn, special cover-all apron, spares, in perfect condition; cost nearly £90 ..... **£70 0**
- 1912 P. & M., immediate delivery ..... **£60 0**
- 1912 6 h.p. CLYNO, 2 speeds, not run 25 miles ..... **£63 0**
- 1912 3 1/2 h.p. BRADBURY, Clutch Model, new, mech. clutch, N.S.U. 2-speed, owner instructs us to sell ..... **£54 10**
- 1912 (Early) 6 h.p. F.N., 4-cylinder, multiple clutch, 2 speeds, fine order ..... **£45 0**
- 1912 2 1/2 h.p. A.J.S., 2 speeds, foot-starter ..... **£48 4**
- 1912 1 1/2 h.p. WANDERER, spring frame, free engine, hardly used ..... **£22 0**
- 1912 3 1/2 h.p. TRIUMPH, Clutch Model, just delivered ..... **£55 0**
- 1912 3 1/2 h.p. T.T. RUDGE, very fast, fine condition ..... **£37 0**
- 1909 3 1/2 h.p. TRIUMPH, splendid condition ..... **£26 0**
- 1907 3 1/2 h.p. TRIUMPH, good order ..... **£17 17**
- 1911 2 1/2 h.p. ENFIELD, chain drive ..... **£25 0**
- 1909 3 1/2 h.p. REX Tourist ..... **£20 0**

## FITTINGS & ACCESSORIES AT BARGAIN QUOTATIONS.

- 1912 Cowey Speed Indicator, perfect ..... **£3 0**
- 1912 Mabon Clutch, fit Rex 35/-
- 6 26 x 2 1/2 Extra Heavy Fearnought Rubber-studded Covers; usual price, 33/9 sale price, 26/6. All new stock.
- 12 26 x 2 1/2 Inner Tubes ..... **5/6**
- 7 26 x 2 1/2 ..... **7/6**
- 20 Leather Carbide Carriers, fix anywhere on frame; 1/2. Post 2d.

## NEW LAMPS FOR OLD

1000 FOOT BEAM  
F.R.S.

We are Special London Agents for these famous lamps, and take old lamps of any make in part exchange. Trade supplied.

- 800ft. sets ..... **58/6**
- 1,000ft. sets ..... **68/6**
- 1,200ft. Major set ..... **78/6**
- Lucas 462 set ..... **60/-**
- " 458 set ..... **50/-**
- " 452 set ..... **35/-**

TAYLOR'S P. & H. NEW MODEL GENUINE BAUSCH AND LOMB LENS, adjustable bracket. Set complete ..... **45/-**

" medium size ..... **30/6**

## BARGAINS IN HORNS.

25 Serpentine Pattern, 5 1/2 in. bell: Usual price, 10/6; sale price, 7/11. 4 1/2 in. bell: Usual price, 8/6; sale price, 5/11.

# TAYLORS

THE HOUSE FOR  
UNBEATABLE BARGAINS.

21a, Store Street,  
Tottenham Court Road, London, W.C.

Phone: 10957 Central. Wires: "Dynametro, London."



# THE MOTOR CYCLE

LEADERETTE:

## Motor Cycle Taxation.

**F**OLLOWING the article published in our last issue, we return to the question of taxation, which is now occupying the minds of motor cyclists all over the country. What motor cyclists must do if they wish the recommendation of the Taxation Committee to be reconsidered by the Government is to act, and act quickly; otherwise what is now a recommendation will become a law.

We think the real question motor cyclists should ask themselves is, What are we being taxed for? If it is for the use of the roads—and we presume it is—our opinion is that taxation should be based on a combination of bore and weight. The desire of the Committee is to bring the taxation of motor cycles into line with motor cars; therefore the light weight of a motor cycle should be taken into consideration. For example, if the recommendation become law, a twin-cylinder sidecar combination with an engine over 72 mm. bore, and weighing about 4 cwts., will be taxed £3 3s. per annum, the same amount as a four-cylinder 11 h.p. motor car weighing about a ton and carrying four passengers. This example alone is sufficient to show the absolute absurdity of the recommendation and its unfairness.

We cannot help thinking that those who are responsible for the recommendation cannot have sufficiently considered the light weight of motor cycles and the very little damage they do to roads in comparison with heavier forms of vehicle. This being the case, and taking into consideration the protests we have received from readers on the subject, we have inserted in this issue a loose inset with the wording of a petition to the Government.

Readers are asked to assist to prevent increased taxation of motor cycles, particularly small twin-cylinders over 63 mm. bore and sidecar machines with engines over 72 mm. bore. With the form of the petition we publish an article embodying our suggestions, and the reasons why we think the present recommendation unfair to motor cyclists in general. We suggest to our readers that they should sign this petition form themselves and obtain as many additional signatures as they possibly can. Space is allowed for twelve signatures, but if further signatures are obtainable they can be written on a plain sheet of paper and attached to the form.

The petitions should be addressed, The Editor, *The Motor Cycle*, 20, Tudor Street, E.C., and envelopes should be stamped with a penny stamp.

In addition to signing the petition, readers will greatly assist the movement if they forward the copy of the article on the subject (which will be found on the back of the petition form) to the member of Parliament representing their borough or county, accompanied by a letter stating the horse-power of the machine owned, with bore and stroke and weight, and asking the member in question to vote against any

increased taxation on motor cycles; also to ask for the matter to be referred back to the Taxation Committee for further consideration.

## Some Reflections on the Cyclecar Movement.

**W**E recently had a long talk with a prominent designer and manufacturer of one of the earliest successful passenger vehicles, who is now engaged in the production of a high-grade motor car. People are apt to look upon the cyclecar movement as something absolutely new, whereas it is really not so. The early-day Phoenix quadcar, the 6 h.p. Rover, the 9 h.p. Riley, the O.T.A.V., and other light four-wheelers were forerunners of the modern cyclecar, and designers knew, in those early days, that to sell their vehicles it was necessary to place them on the market at as low a price as possible. The consequence was that the cost of constructing the "quad," which was in its declining days when the tricar rose Phoenix-like from the ashes of the latter, placed the four-wheeler out of the question altogether in comparison with a tricar, perhaps owing to the expense of the differential and extra wheel. Now belt drive did not prove satisfactory with the heavier types of three-wheeler, and quickly chain drive came along and survived until this class of vehicle became practically obsolete from a manufacturing point of view. The reasons why the tricar went under were various. As regards mechanical design there was nothing very seriously wrong with it, except for the absence of suitable springing and that there was an occasional want of adhesion on the part of the rear tyre, and, further, the latter was, in many cases, hopelessly inaccessible. The other objections were high price and the crying demand for sociable seats. In the early days it was quite easy to turn out a single-gear fore-carriage, as the earlier form was called, at a very low price indeed, but it was somewhat under-powered and unsuitable in many ways. The tricar gradually became more and more car-like, and, in doing so, became more efficient and naturally more expensive, and in many cases more unwieldy. The same development is about to occur with the cyclecar unless it be nipped in the bud.

It is possible to turn out cyclecars at a moderate price, but only by making great sacrifices and laying down an enormous plant and by keeping the prices down almost entirely through a very large output. Now, had the tricar been made in any quantities it would have been possible to sell it at twenty or thirty pounds cheaper than was actually the case, and we think it just as well for those who are engaged in the industry to know this. We have the assurance of more than one prominent manufacturer that a well-designed multi-cylinder cyclecar fitted with a good system of transmission, three speeds and reverse, differential, etc., can quite well be manufactured at under a hundred pounds, provided motor cycle lines are adhered to.



I LEFT Nottingham at 4.30 p.m. on Friday, the 13th ult., to join the A.A. party at Cambridge at seven o'clock, and thanks to the A.A. scouts I was enabled to arrive in good time. At the Lion Hotel a dinner had been arranged so that we might have an opportunity of getting to know one another. After dinner Mr. Cheeseman handed out our unit cards, and, together with five other motor cyclists, I was attached to Neutral Signals with Director of Manœuvres, and had to report to Captain E. G. Wace, R.E., Lion Hotel, at noon next day, and that we were to be boarded at Ye Olde Castel Hotel—pleasant news, as it meant no bivouacking in the open.

Before reporting, we decided that it would be a good idea to take a ride out of Cambridge to get to know the various outlets to the town, so that when we received despatches there would be no difficulty in getting away quickly.

The six of us reported to Capt. Wace, who numbered us as follows: Farnsworth (Rover, three-speed), No. 1; Gates (8 h.p. Matchless), No. 2; Symes (Triumph F.E.), No. 3; George (Douglas two-speed), No. 4; Wardle (Rudge F.E.), No. 5; and Spence (D.O.T.T.T.), No. 6. Capt. Wace issued maps and blue and white armlets (Neutral), and told us to report again at six o'clock in the evening. Myself and No. 2 were then sent out with test messages against the telegraph (this we did not know at the time). I was sent to Clare, thirty miles distant, and beat the telegram by several minutes. The Matchless rider had to go to Great Yeldham, thirty-two miles, and he was only one minute too late. Our report officer considered this very good work, as when we started it was 6.50 and quite dark.

#### A Heavy Night's Work.

SUNDAY.—Rover and Matchless were free until noon and paid a visit to the Royal Flying Corps Camp at Hardwick. We were allowed to inspect the flying machines in the hangars, and had numerous details explained to us. Triumph and Douglas were out after lunch, and I came on after six o'clock and had to take three despatches—one to the Chief Umpire at Newmarket, one to Col. Wintowe at Stradishall Place, and the other to Lord Roberts at Stetchworth. Starting out from Cambridge at 8.30, my first despatch was easily delivered, but Stradishall Place was about seventeen miles away on by-roads. My lamp would not burn properly, and at 11 p.m. I was several miles from my destination. I knocked a police sergeant up

and



and he put me on the right track. I eventually found the house in the middle of large grounds at 12.15 a.m. I knocked the door and got the receipt signed by the butler, and was soon off back to Newmarket to find Stetchworth and Lord Roberts. Refilled the lamp and it burned slightly better; arrived Stetchworth 1.45 a.m., and found his Lordship in bed; landlady signed my receipt. I started back to Cambridge and ran out of petrol; pushed machine about two miles to nearest cottage, woke up its occupants, and obtained some paraffin. Though the engine was quite cold it fired within three yards, and I ran splendidly into Cambridge, arriving there at 2.45 a.m., after covering nearly ninety miles, all unknown country on a pitch dark night.

MONDAY.—Despatches to Chief Umpire at Newmarket and to Capt. Dillion, A.D.C., to Lord Roberts at Stetchworth, and ran through large bodies of troops on the move. Our other riders were not very busy to-day.

TUESDAY.—Sent with despatches to Saffron Walden to try and find the Fourth Division of the Blue Army, as their whereabouts were unknown. I rode from camp to camp and round the country lanes but could not find them until night, and then I came across them in some fields bordered all round with woods. Retraced my steps to Cambridge and found despatches waiting for me to take to the Second Division. I went out to Haverhill, and met several regiments on the move and many more were bivouacking close to the road. From Haverhill I went on to Hunsdon. A whole brigade of artillery were bivouacked here, and a few fields further on the Brigade of Guards, but no tidings of the Second Division until I got to Stradishall; then I heard they were near Farley Green. I succeeded in finding the O.C. and delivered my despatches, but



**With the Combined Armies—**

the trouble was how to find my way back to Cambridge, as it was a very dark night and we were in the heart of the country. Thanks to my F.R.S., which gave a splendid light, I worked across to Newmarket, and from there it was easy going to Cambridge.

**Delivering Messages until 3.0 a.m.**

After supper I started out with a despatch for Lord Haldane at Babraham Hall. Again I had great difficulty in finding my way, as it was very foggy and my lamp was very bright. I turned the hood right down, but I could only go at 5 m.p.h. on bottom gear and using the clutch as well. When I eventually found the Hall it was 1.15 a.m. and everybody in bed. I managed to get the butler down, and from there I went on to Linton Camp. I found them very wideawake, as their transport had got lost and they had had no food since morning; scores of them were walking about to keep themselves warm. I arrived back at Cambridge at 3 a.m. thoroughly tired out, and the big day coming on Wednesday.

WEDNESDAY.—The headquarters were moved out of Cambridge to the cross-roads between Linton and Horseheath, and we had to report there at 9 a.m. We had great difficulty in getting there, as the roads between Abingdon and Horseheath were one continual stream of troops. By this time we had acquired a very martial air and felt quite above civilians. On arrival at headquarters we found that a big battle was expected at or near Horseheath, and the sixty-pounders were hard at work by ten o'clock. I was sent with a despatch to General Robertson and told that he would probably be at Wigmore Pond. I came across two ammunition waggons jammed in the narrow roadway and banks on either side, so I had to wait a few minutes. I told the officer in command for whom my despatch was, and he had the road cleared for half a mile so that I could get through as quickly as possible.

On returning to headquarters I had to take a despatch to General Henderson, who was with Sir John French. I found them at Horseheath with Sir Douglas Haig, C.-in-C. of the Red Army. The great battle was at its height, and I spent an hour in the midst of the troops and saw Horseheath captured by the Reds and retaken by the Blues. General Allenby, Chief Inspector of Cavalry, told me that what surprised him was the ability of motor cyclists to go anywhere. On returning to the report centre I found that the other motor cyclists had not been so fortunate as myself, as they had been away from the battle.

**A Message to the King.**

At 4.30 Sir John French asked for motor cyclists to go out and find the King and bring him to headquarters, as they wished him to sound the cease fire. I was one sent out. After riding about three miles towards Balsham I came across the King's cars. I

asked if they knew where the King was, but they did not, and wished they did, etc., as they had not seen him for over an hour. I rode on towards West Wickham about 1½ miles, and actually came upon the King and his staff. I jumped off my machine, saluted, and told His Majesty that Sir John French wished him to ride to the headquarters to sound the cease fire. I had the honour of riding in front to show the way. Naturally I was very pleased, and was congratulated by Capt. Wace on being the fortunate one. We then stood at attention while several brigades marched past. We left headquarters at 7.30, and I again ran out of petrol and had to invest three-pence in paraffin, which carried me on to Cambridge to a well-earned dinner.



A group of motor cyclist despatch riders at their annual camp. The figure standing is Leon Cody, Colonel Cody's son. In the background is Commander Sander's biplane.

On the Thursday I had despatches for Surgeon-General Robertson, Haverhill Camp, or wherever he might be. I located him after covering over thirty miles of country. Calling at a country public-house, I found a dozen or more officers eating bread and cheese and drinking beer out of pint mugs. What a change from Piccadilly!

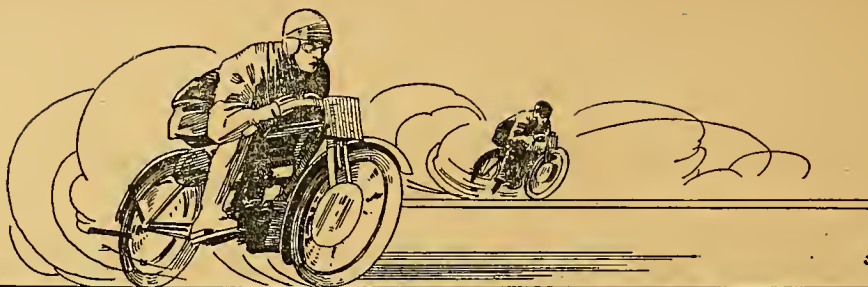
**A Strenuous Week.**

At 8.30 p.m. I started out with despatches to Wimpole Park Camp, and had rather a difficulty in delivering them, as I found several regiments encamped there, and I had to find each O.C. Arrived at 11 p.m., and with the aid of my pocket flash lamp, I managed to locate them all. We were on duty until Friday morning, but had nothing further to do, this finishing a most enjoyable though strenuous week. I look back on it as one of the events of my life. During the week my milometer registered 678 miles. Capt. Wace thanked us all, and said how pleased he had been, and that we had been very successful during the manoeuvres. He thought that we were one of the best units attached to the Army, that none of us had had the slightest trouble (not even a puncture), and that every despatch was delivered promptly and to the right person, and he hoped that we should all be under him again next year, only, instead of being sent by the A.A., we should be a proper unit of the Army—a reserve corps—now that the War Office had found what we were really capable of.

J. FARNSWORTH.



## QUESTIONS & REPLIES



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Loss of Power.

**?** I have a 2½ h.p. a.o.i.v. motor cycle with accumulator ignition. Each time I go out for a run it stops every two or three miles. It recently took me three hours to go twelve miles. If you could suggest a remedy I should be very grateful. I can give it very little extra air without throttling down the engine. It very easily overheats. The petrol blows back into the carburetter, which is a 1911 B. and B. I may say that I recently had new connecting rod and timing gear fitted.—J.W. (Innerleithen).

As to what the ignition trouble is we cannot tell you. Accumulator ignition is, unfortunately, very unreliable, as there are numerous loopholes for short-circuiting. The only thing to do is to look over the wiring carefully, and see that your accumulators are up to the mark, and that every connection is sound. With regard to the petrol blowing back into the carburetter, we should say that this is caused by too weak an inlet valve spring, or to the inlet valve having too great an opening.

### A Sluggish Starter.

**?** I have a 2½ h.p. Zedel engine, and cannot get it to start. It has accumulator ignition. The accumulator has been recharged, and shows full voltage; the wiring is apparently sound. I have fitted a new high-tension wire and new plug. The compression is excellent, the timing is correct, and the carburetter is clean. I might also mention that I get a good spark on any part of the machine from the high-tension wire, when contact is made by revolving the engine. Everything, as far as I can see, is quite in order, and yet I cannot get it to start.—E.W.D. (Uxbridge).

The trouble may not be due to the ignition at all, as you get an excellent spark. Probably there is a bad leak in the inlet pipe, allowing too much air to enter the cylinder. If you overhaul your carburetter and its connections, you will probably find the cause of the trouble. If you have had the carburetter down and re-assembled it incorrectly it might cause the symptoms.

### Darlington-Bradford-London.

Will you please let me have particulars as to best route from Darlington to Bradford and from Bradford to London?—T.P. (Morpeth).

**?** Your best route would be as follows: Darlington, straight on to Leeming Lane, then through Scotch Corner, Leeming, Ripon, Ripley, Leathley, Otley, and Bradford. From Bradford to London your route would be through Wakefield, Doncaster, Retford, Newark, Grantham, Stamford, Stilton, Buckden, Eaton Socon, Biggleswade, Baldock, Stevenage, Welwyn, Hatfield, Barnet, and Regent's Park, London.

### Timing of Exhaust Valve and Magneto. Warwick to Putney Bridge.

**?** My machine has a 2½ h.p. a.o.i.v. J.A.P. engine. (1.) Is it possible to prevent the inlet valve from clattering? Altering the tension of the spring does not seem to have any effect. (2.) Relatively to the position of the piston, when ought (a) the exhaust valve commence to lift? (b) the magneto points commence to break? (3.) Ought there to be any "side play" at the big end of connecting rod? (4.) Would this account for a slight fouling of the flywheels by the connecting rod? (5.) Which is the best route from Warwick to Putney Bridge?—H.E.P. (Shrewley).

(1.) If altering the tension of the spring does not prevent the valve from clattering, try placing a washer between the cotter and the collar of the valve, thus reducing the opening. (2.) The great thing is to note where the exhaust valve closes. It ought to close on the top of the exhaust stroke or a few degrees past dead centre. The magneto points are about to break when the spark is fully retarded and the piston is dead on top of the compression stroke. (3.) A certain amount of side play in any of the bearings does not matter. Vertical play, of course, must be avoided. (4.) Excessive side play might cause the fouling of the flywheel by the connecting rod, and in this case matters should be looked to. (5.) Your best route would be as follows: Warwick, Banbury, Deddington, Bletchington, Islip, Wheatley, Stokechurch, High Wycombe, Beaconsfield, Uxbridge, Acton. At Askew Road turn right and follow the trams to Hammersmith Broadway. Cross Hammersmith Broadway and follow trams to Putney Bridge.



TOURING IN THE PEAK DISTRICT. A scene on Castleton Hill, one of the most picturesque spots in Derbyshire. Observe the road winding away in the distance.



## Aldershot to Windermere.

? Will you let me know—(1.) The best route from Aldershot to Lake Side, Windermere, avoiding large towns if possible? (2.) The distance? (3.) Is it too long a journey for one day on a  $3\frac{1}{2}$  h.p. single? I do not want to do any night riding, but should not mind starting early.—L.H.R. (Dover).

Your best route would be as follows: Aldershot, Odiham, Reading, Streatley, Wallingford, Shillingford, Oxford, Woodstock, Shipston-on-Stour, Stratford-on-Avon, Alcester, Bromsgrove, Kidderminster, Bridgnorth, Wellington, Whitchurch, Tarporley, Warrington. Here ask your way to Prescott, and go through Rainford, Ormskirk, Rufford, Preston, Garstang, Lancaster, Kendal, to Windermere. The journey is almost too long to be undertaken in the day at this time of the year. What we should advise you to do is to start at daybreak and get as far as you can in one day, and then complete your journey the next day.

## A knock when picking up speed.

? At the end of July I bought a brand new T.T. machine of well-known make, and now, when I start, or pick up after turning corners, it knocks a great deal if I do not retard the spark. The engine is quite free from carbon deposit, and is always kept perfectly clean. The gear is 4 to 1. (1.) What is the cause of this? The machine runs very well, but is not as fast as I should like it to be. (2.) Will a long exhaust pipe make much difference? (3.) Will an extra air pipe to the carburetter make any difference?—R.E.S. (Woking).

(1.) The symptoms may be due to a loss of compression since the machine was new. Inspect the valves and seatings. Probably the best way to get it tuned up would be to send it to the makers, or write to them for advice. (2.) The long exhaust pipe certainly causes less back pressure than a silencer. (3.) This depends upon the adjustment of the carburetter, though a long pipe does seem to effect an improvement, chiefly in consumption.

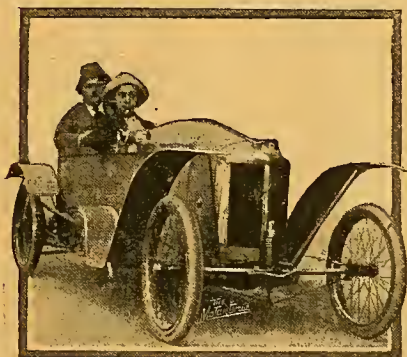
## Carburetter too close to engine.

? I should be glad of your advice on the following questions: (1.) Should a B. and B. carburetter on a  $3\frac{1}{2}$  h.p. J.A.P. engine get too hot to be touched with the hand in a short ride of, say, four or five miles with sidecar? If not, what is the probable cause? The compression is good and the inlet valve in good condition. Is there any danger of the carburetter catching fire? (2.) Does vaseline or grease damage the covering of Bowden wire? (3.) What is the best way to keep the accumulator of an electric light set when not in use, i.e., laid up for the winter?—AT 1146.

(1.) The fact that the carburetter is hot may be due to its proximity to the engine, and perhaps to too strong a mixture. There should not be any danger of fire. (2.) No; vaseline or grease does not damage the covering of Bowden wire. (3.) Really the best plan is to get it charged from time to time; otherwise, you may run down the cell through a lamp and fill it up with distilled water.

## Broken Window.

? I have had the misfortune to have a small smash with my cycle and sidecar. The facts are as follows, and can be borne out by an entirely independent witness. I was taking the machine back to the garage and was proceeding about two or three miles per hour (the machine was going on its own momentum), and I blew my whistle in turning up the road to the garage. One man would not give way to me, but seeing that I was in danger of doing serious damage to some shop windows at last gave in, but too late to allow me to get round the corner. I managed to swerve and avoid knocking him down, but my machine took the kerb and the sudden swerve of the front wheel sent the handle-bar through the window. I must add that the kerb at this point is only about 2ft. or 2ft. 3in. wide. The very fact that the machine is not scratched beyond the lamp glass broken, and that I myself did not get any cuts, prove that I used all reasonable caution and care, and that the speed was not excessive. I am an experienced driver and have driven and owned four



L'Automobilette, the French tandem seated cyclecar described on page 1094 last week. The engine is a twin cylinder water cooled pattern, the radiator being wedge shaped.

machines. The insurance company (the windows are insured) have sent me a letter saying that they will put through a bill for replacement in due course. Before acknowledging their letter I should be glad if you will advise me if they have any claim against me, and whether I should repudiate responsibility. My witness saw the whole affair and came voluntarily to offer his services.—A.A.

Our legal adviser writes as follows: "If the court is satisfied that the facts as stated by your correspondent are correct, I think the insurance company would have great difficulty in obtaining damages. At the same time, details as to how the accident actually occurred are rather meagre, and when a motor cyclist turns from the road to cross into premises, it does not necessarily follow that he must expect pedestrians to stand still while he crosses. It is just as much the business of a motor cyclist to get off and walk it across the pathway as it is for the pedestrians to be on the look out. I think the proper plan is for your correspondent to dispute all liability, and then if the insurance company proceed he

should go with his witness to a solicitor and take his advice on the matter. In order to succeed, the insurance company must show that your correspondent was negligent or careless in his riding, and this is a question of fact which can only be settled by hearing the evidence on both sides."

## Petrol Consumption.

? I have a  $3\frac{1}{2}$  h.p. James motor cycle with an Amac carburetter and sidecar. I can only go fifty-five to sixty miles on a gallon of petrol. The engine is in good trim. I might say that with throttle lever about a quarter open or less I can fully open the air lever without the engine misfiring. I use a No. 32 jet, and if I use a smaller I cannot get sufficient power to finish hills.—J.A.C. (Wolston).

Failing the use of a smaller jet you must increase the air supply, as at present there is insufficient when the throttle is open. If the machine is really pulling well it would be hardly worth while your upsetting things for the sake of saving a few pence on about every hundred miles of travelling. As a matter of fact, an average of 60 m.p.g. with a sidecar and engine of 86 x 96 mm. is good.

## EXPERIENCES WANTED.

"Waverley" (Reading). G.W.K. cyclecars, for business purposes.

"M.M." (Ecclefechan). A.C. Sociable, particularly with regard to the carbonisation of engine.

"X.Y.X." (Lewes).  $3\frac{1}{2}$  h.p. 1911 two-speed Humber with sidecar.

"S.W." (London).  $2\frac{3}{4}$  h.p. two-speed Douglas. Reliability and power after 5,000 miles.

"L.C.D." (Wolverhampton). T.M.C. and 8 h.p. water-cooled Williamson for solo and sidecar. Reliability and running costs.

"H.R." (Scalby). No. 7 Chater-Lea and sidecar. Tyre wear and petrol consumption.

"T.B.R." (Cleethorpes). Clyno and T.M.C. sidecars. Wear and reliability.

"A.P." (Bristol).  $4\frac{1}{2}$  h.p. Excelsior and 5 h.p. Rex de Luxe with sidecar.

"W.H.W." (Willesden). Roc and other two-speed gears suitable for 8 h.p. and sidecar.

"W.H.E." (Armagh).  $2\frac{3}{4}$  h.p. Winchester. Hill-climbing and petrol consumption.

"F.W.C.G." (Fremington).  $3\frac{3}{4}$  h.p. Scott with sidecar. Retention of crank case compression.

If "Novice" (Northampton) will send a stamped envelope together with his name and full postal address, a reply will be sent to his query.

## "The Motor Cycle" Photographs.

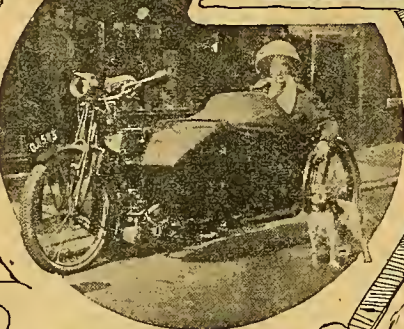
Duplicates of photographs appearing in "THE MOTOR CYCLE" will be supplied at the following rates:—Unmounted prints, half plate,  $1/6$  post free; mounted,  $1/9$  post free. This refers only to photographs taken by "THE MOTOR CYCLE."

Orders, which must be accompanied with remittance, should be addressed to the Photographic Department—Iliffe and Sons Limited, 20, Tudor Street, London, E.C.



# AN UNOFFICIAL 1,000 miles TRIAL

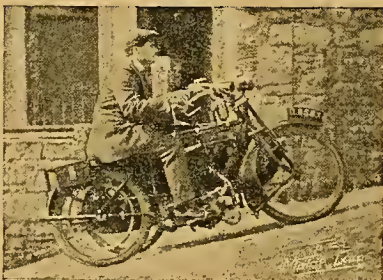
The Sychnant Pass from Dwygyfylchi.



A stop for petrol at St. George's, near Wellington.



A bend on the Sychnant Pass, Penmaenmawr mountains in the background.



On the steepest portion of the Great Orme, Llandudno.

On many occasions have wordy warfares raged in these columns on the subject of single-cylinder machines for sidecar work, the majority contending that the  $3\frac{1}{2}$  h.p. mount is not sufficiently powerful for general touring requirements. Such may be the case with engines of under 500 c.c., but after a tour extending to nearly a thousand miles, and embracing North Wales, the Midlands, and the South Coast, mounted on a James of 558 c.c., the writer can state emphatically that every  $3\frac{1}{2}$  h.p. cannot be saddled with the verdict above mentioned. True, it had a three-speed counter-shaft gear and enclosed chain drive, and was, in fact, a 1913 model, which accounts for why it came into my hands last month to undergo test.

Starting away from Coventry soon after 10 a.m., good going was made *via* Stonebridge to Castle Bromwich, and along the Watling Street to Cannock Chase and St. George's, where the first stop was made for petrol, and the run continued *via* Shrewsbury (the second speed being brought into operation on Wyle Cop) to Llangollen. On this latter section, the engine, which it may be observed was brand new, in addition to the bicycle and Canoelet sidecar, refused to climb as before, demanding the air lever to be almost closed—a sure sign of a choked jet. This rectified, Chirk and Llangollen soon hove in sight, and the long ascent to Corwen climbed mostly on top gear. The road surface hereabouts deteriorated rapidly, thanks to motor 'bus traffic, and there was no possibility of dodging the pot-holes, for they abound everywhere.

## Caution required in Wales.

It rained sharply when nearing Bettws-y-Coed, but the machine climbed gaily on top gear the rise leading to Llanrwst. In this town I was disgusted with a police officer who, gossiping and joking at an acute bend with two yokels, was entirely unconcerned when a motor char-à-banc swung round at over the 10 m.p.h. limit without sounding a horn, and only just left room for the sidecar to squeeze through. In this connection I should like to warn readers in their own interests to travel most cautiously in Wales, for few heed the rules of the road, and drivers of public vehicles seem the worst offenders.

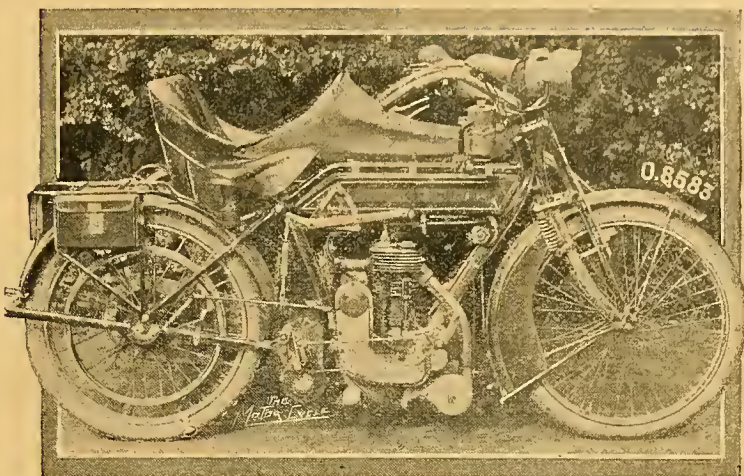
The wind increased in violence as we neared the coast and our objective—Llandudno. The run had proved most enjoyable, our only involuntary stop being to clear the jet. It did not take long for me to realise that in the 1913 James I had a machine of the first





**An Unofficial 1,000 Miles Trial.—**

water, and as for the multi-plate clutch I was soon full of praise. It is exceptionally smooth in action, and would start the combination on the middle gear with ease. Our average, including all stops, was  $19\frac{1}{2}$  m.p.h. Some facts and figures may interest the economically minded. The journey of approximately 150 miles was accomplished on less than three gallons of petrol and one quart of oil, say 6s. 6d. for two persons, which result was equalled on the return journey. But what a boon it is to have a motor of some description at a seaside resort and be independent of trains and chars-à-bancs! Nearly every day the James was on the road, my wife and I visiting most of the interesting places roundabout, and much more cheaply than the ordinary methods of conveyance would have entailed.



The 1913 model James with three-speed counter-shaft gear and kick starter, also chain drive with grease bath chain cases.

**An Ascent of the Great Orme.**

We climbed the Great Orme by the coast road on second gear, but, not satisfied with this achievement, attempted the ascent by the tram track, which boasts two sections of 1 in  $3\frac{1}{2}$  gradient. For 300 or 400 yards the engine tugged gamely on its lowest ratio, but came to a full stop at the gate, this with our touring tackle aboard. My passenger was so thoroughly frightened that she positively refused to try a second ascent, so descending, I made an attempt with the sidecar empty. I had chanced to meet a friend, Mr. T. Blyth Clayton, of Birmingham, who, lucky man! had his Wolseley car and Bradbury motor cycle with him. Being a camera man, he stationed himself about halfway up. Securely tightening the engine valve caps, which had a habit of working loose, and injecting two charges of oil, I turned a deaf ear to the tram conductor, who assured me that dozens of motor cyclists try but few succeed, and commenced the climb. The ascent was comparatively easy this time, however, for relieved of the weight of the passenger, the James engine turned over merrily, and the speed of the machine was only governed by the lumpy road surface. The second pitch of 1 in  $3\frac{1}{2}$  near the top demanded full throttle and a retarded spark, but there was never any doubt of the machine's ability to accomplish the ascent. I climbed Beggar's' Roost in

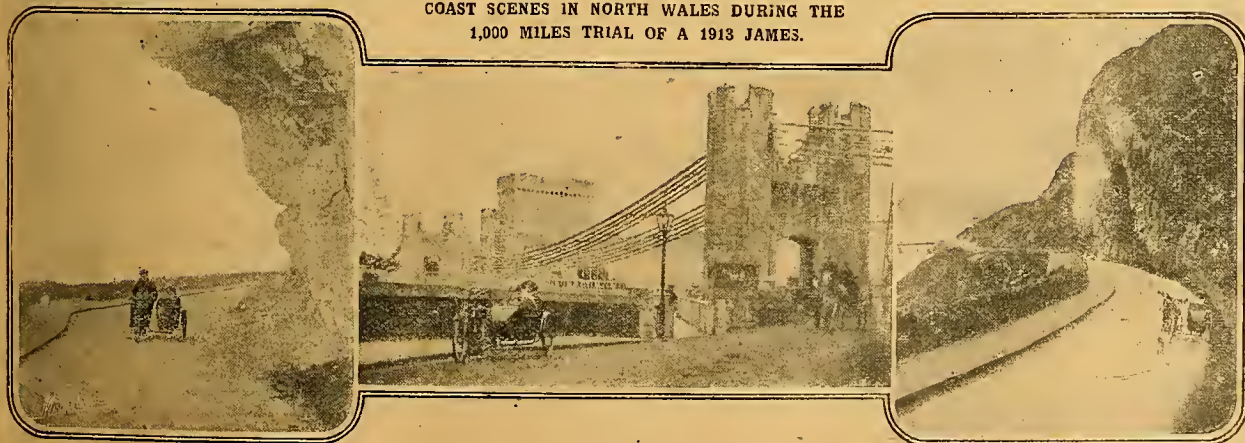
Devonshire a month previously, but I do not consider it quite so steep as the Great Orme, and the performance left me with a great respect for the capabilities of the  $86 \times 96$  mm. 1913 model James. Mr. Clayton's three-speed Bradbury was not geared so low as mine, but he reached a point about 200 yards from the top. The descent proved a genuine brake test, but again our trusty mount was not found wanting.

Another climb worthy of special mention during our travels—especially as it was the only main road climb calling for the lowest gear ratio—was the Sychant Pass, between Penmaenmawr and Conway. On the low gear, loaded as we were with touring kit (and not forgetting a Blenheim spaniel who loves motors), the engine did not seem distressed in the least when we slowed down to a walking pace in order to pass two horse brakes, and then opened out again.

**Through the Centre of England.**

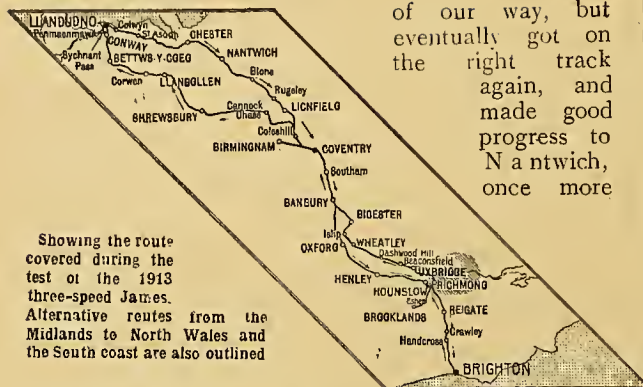
Being keenly interested in the 150 miles race to be held at Brooklands on the Saturday following, we set out for Coventry on a Tuesday, this time preferring the route *via* Colwyn Bay, St. Asaph, and Chester. In parts the road surface was frightfully cut up, and only a staunchly-built sidecar could stand incessant bumping such as we endured. After lunch in Chester, we took the wrong turn and went several miles out

COAST SCENES IN NORTH WALES DURING THE  
1,000 MILES TRIAL OF A 1913 JAMES.





## An Unofficial 1,000 Miles Trial.—



of our way, but eventually got on the right track again, and made good progress to Nantwich, once more

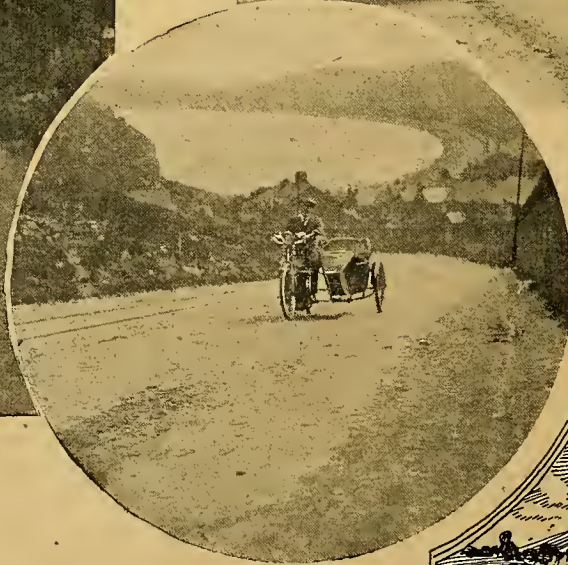
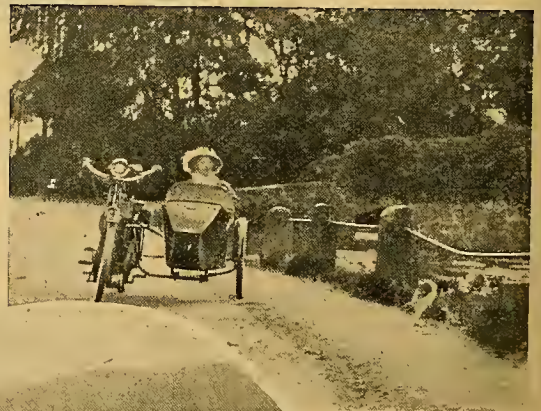
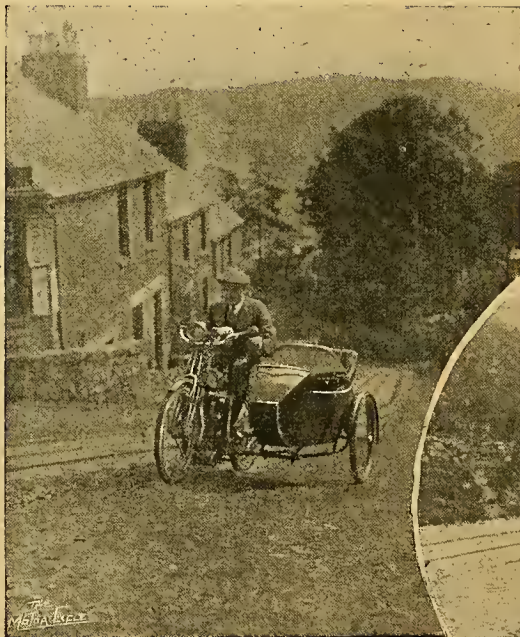
overshooting the turn for Stone and Rugeley, and finally reaching Coventry by way of Lichfield and Coleshill, the steep hill in which town was actually climbed on top gear with a hot engine. Again the average worked out at approximately 26 m.p.h., inclusive of stops, the machine several times attaining a speed of 40 m.p.h. on secluded stretches of road. The James continued to run as regularly as ever, but I thought it time to tighten the driving chain slightly. Grease retaining cases entirely enclosing the chains are a fea-

ture of the transmission, and I noted with pleasure that every link was well greased whenever I peered inside the axle hole. I have only one fault to find with such complete cases, and that is that they prevent one testing the chain tension. Inspection windows seem desirable.

## Along the Thames Valley.

Next morning the journey to town was commenced, but the run *via* Banbury, Oxford, Henley, and Maidenhead was just as featureless as formerly, except for a sooted plug to vary the monotony. A day at Brooklands proved a welcome change, though we came away having seen and heard of every imaginary engine trouble, and during the run back to town in the dark we were haunted by visions of broken valves, pistons, connecting rods, and seized engines. Any reader who desires to retain a good opinion of the reliability of motor cycles should on no account deign to watch a long-distance race on Brooklands. Is it in the air, I wonder?

A run to Brighton next day in company with an owner of a 6 h.p. twin-cylinder two-speed sidecar served to demonstrate the advantages of three gears over two in hill-climbing. Not only would the James on its middle gear rapidly overhaul the two-speeder, which on gradients of 1 in 10 to 12 was either labouring on its high gear or hopelessly undergeared on the



Ascending the Great Orme, Llandudno, by the tram track The gradient at the point in the left hand photograph is 1 in 24.



**An Unofficial 1,000 Miles Trial.—**

low, but it was very little slower on the level, as the adoption of a three-speed gear enables a higher top ratio to be selected. There is no acclivity on the famous London-Brighton road worthy the name, which may account for our average speed being so good (24 m.p.h.), but Handcross and Reigate on the run back necessitated a change down. Near Reigate misfortune befell my companion, for the locking rings of the rear sprocket came undone and caused some damage. Being dusk, it was resolved to leave the machine for the night, and the only thing to do was to find a seat for the driver on the carrier of the James and for the passenger in the sidecar. Thus we progressed with four up the twenty miles to Richmond, but even under such severe treatment as this the engine did not cry out, and there was no need to stop and cool down, as would certainly have been necessary not many months ago. The James won another golden opinion that night, and again next day when it transported its owner and a partner of the Holbrook Garage, Richmond, to the scene of the mishap. Matters were soon righted on the twin with the assistance of daylight.

**Over the Old Quarterly Trials Course.**

In order further to vary the roads traversed I selected another route home to the Midlands, *via* Uxbridge and the old Quarterly Trials course to Banbury. My chief object was to try Dashwood Hill, which regularly stopped motor bicyclists in the trials, but with a hot engine we got to the summit comfortably on middle gear, which is surely testimony to the lasting qualities of the engine, for it had not had a

valve touched, or in fact any adjustment since the start fourteen days' previously. The final jaunt to Coventry and Birmingham needs no special reference, for the machine pulled as well as ever, and I parted with it quite reluctantly.

**Summary of Experiences.**

Handing the combination over to Mr. A. D. Arter, I learned that it had no special shock absorbing mechanism other than the clutch, yet the flexibility of the engine had hidden this fact from me. The only point one can criticise is the change-speed lever, which may appear somewhat cumbersome, though easily manipulated after a little practice. I like the foot-controlled clutch, and once as a test actually started from a standstill on a gradient of 1 in 5 with the sidecar loaded. The kick starter is well designed and substantial, sturdiness being a feature characterising the whole outfit. The petrol consumption may appear rather high—50 to 55 miles per gallon—but a smaller jet than the one I had could be used with impunity. The engine, too, it must be remembered, is nearer 5 h.p. than  $3\frac{1}{2}$  h.p. The chains were still smothered with grease when I parted with the machine, so there is no doubt about enclosed chain drive being a distinct advantage. As for the Canoelet sidecar my passenger speaks in high terms of praise; the new waterproof scuttle distinctly enhances its appearance and comfort. I suppose I must have been in luck's way, for though the James had three different makes of tyres on—a Dunlop sidecar, Palmer front, and Rom rear tyres, I had no punctures or trouble at all. The fact is that if in 1914 my holiday tour is as enjoyable and free from trouble I shall be contented. G.S.

**A RUN ON A WALCYCAR.**

ONE day last week Mr. A. W. Wall, the maker of the Walcyar (a new title), illustrated in *The Motor Cycle* of July 25th, called at our offices to take us for a short trial run on the latest model. Mr. Wall was careful to explain that it was not his intention to indulge in any record-breaking hill-climbing feats or speed attempts: he merely wished us to gain an impression of what the vehicle was capable of under ordinary riding conditions, particularly with regard to the comfort of the body and the springing. The run embraced about twenty-five miles of Warwickshire roads, and when we say that the road from Coventry to Warwick constituted part of it, we have said sufficient about road surfaces to prove that if the vehicle were comfortable when driven over this road it would be luxurious practically anywhere else. It was only when the wheels went down into an exceptionally large pot-hole that one felt the bumps unduly.

The secret of the springing of the Walcyar is that the frame is sprung from the wheels, and in addition the body is supported by a second set of springs which insulate it from engine vibration.

The Walcyar is possessed of a fair turn of speed, and presents quite a natty appearance. The springing is exceptionally good for a low priced runabout of this description, and we have no fault to find with the amount of space provided in the body. We took the driver's seat for a short distance, and found that the steering was quite easy and the control quite simple.

It cannot be said for a cyclecar that it holds the road like a big and heavy four-cylinder car, but the Walcyar steers quite well enough for the speed such a vehicle is able to attain with comfort to the passengers. The control of the engine would be improved were it provided with an automatic carburetter, but, of course, the engine being of the motor cycle class, viz., a V twin Precision, it is fitted with the standard carburetter supplied with variable hand-controlled throttle and air. The fitting of an automatic carburetter would, however, be a very simple alteration, and one which we know Mr. Wall would undertake for anyone who desired it.

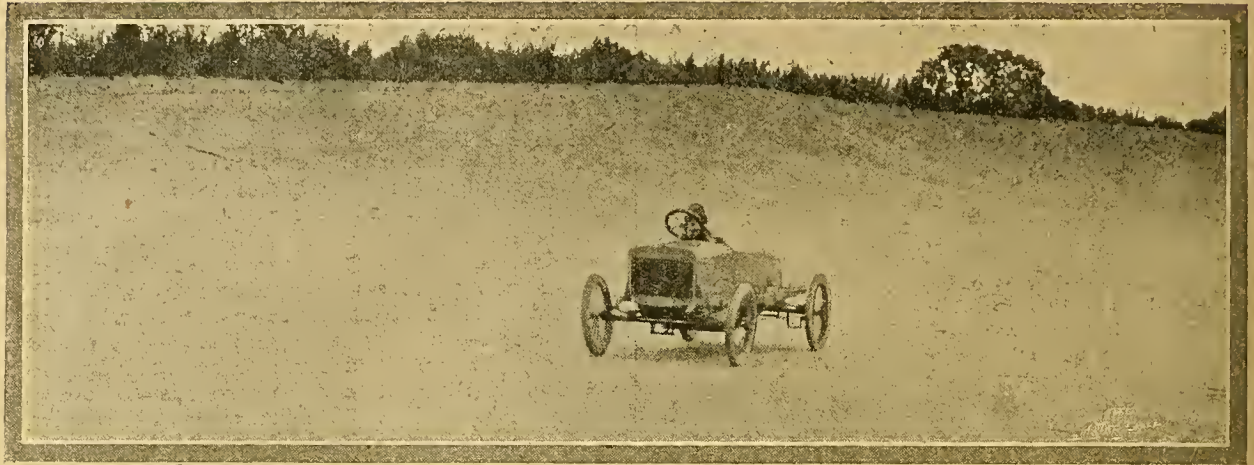
The Walcyar can be supplied with an 8 h.p. twin J.A.P., 85 x 85 mm., or a 6-7 h.p. M.O. twin Precision, 75 x 80 mm., both air-cooled engines.

The standard gear ratios are  $5\frac{1}{4}$  and  $10\frac{1}{2}$  to 1, and the starting of the car and change of speed are effected by means of two pedals. This simplifies the control immensely, because in the case of a pure novice he need not concern himself with the control of engine speed, valve lifting, or similar methods employed for easy changing of gears. All he has to do is to start the engine, depress the low speed pedal, and when the cyclecar is under way release the low speed pedal and apply the high speed. We estimated our average speed to be 25 m.p.h., and a top speed of 35 m.p.h. was possible without unduly accelerating the engine. No speedometer was fitted or we should have been able to make a more accurate statement.

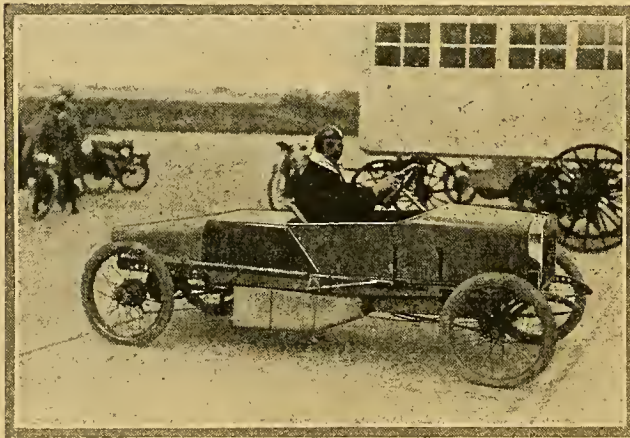


## NEW CYCLECAR RECORDS.

A G.W.K. breaks the Hour and Fifty Miles Records.



ON Wednesday afternoon at 2.27 p.m., J. T. Wood set out on an attack on the hour, fifty miles, two hours, and 100 miles records on Brooklands Track. The day was fine and a light north-easterly breeze was blowing. Started by Mr. A. V. Ebbelwhite, the G.W.K. went off in excellent form; thanks to the friction drive, which enabled the driver to raise his gear gradually as the speed increased,



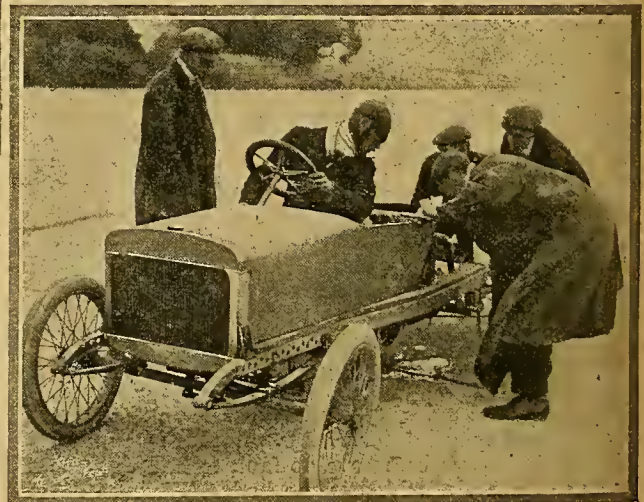
J. T. Wood on the starting line. Observe the streamline tail on the G.W.K. cyclecar.

but was a long time completing the lap, so that it was evident that some trouble had been experienced. When Wood arrived it transpired that the plug below the main jet of the Zenith carburetter had fallen out. Fortunately, the ingenious driver was not long in discovering that a sparking plug would fit the orifice, but unfortunately the particular plug used was too long and the joint was not petrol tight.

### Over Fifty-five Miles per Hour.

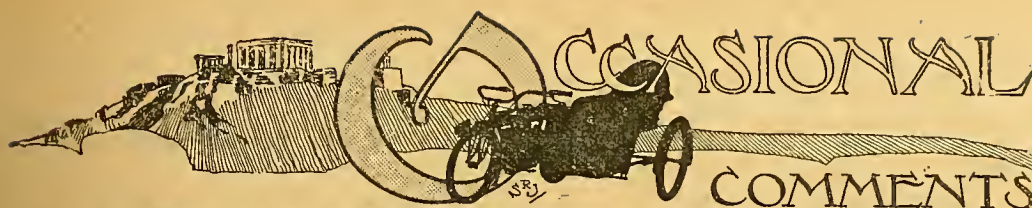
Luckily, *The Motor Cycle* representative unearthed a Sphinx Gnat plug, and having filed off the points and fixed a washer we offered it to Wood, who found it an exact fit, and, having tested it on a trial lap, started

on his record ride at 2.50. His first lap (standing start) was covered at the rate of 49.72 miles an hour, and his next lap at 53.99. For the first few laps (excluding the first) his average was 54 m.p.h., and in the tenth lap he managed to attain the excellent speed of 55.15 miles an hour. This looked extremely hopeful, but, unluckily, a plug failed in the fifteenth lap, necessitating a stop. His next flying lap was reeled off at 50.96 miles an hour, which speed he improved to 52.05. Despite the stop the hour record was broken by 2 miles 886 yards, as against the Bedelia's performance on the previous Friday of 45 miles 504 yards. Fifty miles were covered in 1h. 2m. 32s., previous best Bedelia 1h. 6m. 29s. Wood then continued in an attempt on the two hours' and hundred miles' records, but was forced to stop at the twenty-fifth lap, owing to a cracked water jacket, due to a leak at the water pump connection. The G.W.K. is propelled by a twin-cylinder vertical engine.



A stop to inspect a leakage in the water jacket.





BY 'IXION'

### The Improvement in Free Engine Clutches.

A few years ago a very sensitive toe was necessary to effect a clutch start on the level with the best free engines then on the market. To-day many a novice starts a single-gear clutch model with ease and smoothness at his first essay. Perhaps the main need of the present day is a really perfect handle-bar clutch control. The fingers are always more delicate in manipulating controls than the foot can ever be, especially when it is shod by a great hob-nailed boot, and the one-leg balance of the machine is a trifle precarious.

There are several fairish handle-bar clutch controls on the road, but I cannot help thinking that there is still room for improvement. Clips twist on the bar, ratchets strip, and the heavy leverage is usually tiring to the fingers, and apt to disturb the steering. I do not see why we should not eventually obtain a handle-bar control which will be as easy as opening the throttle. The rawest novice would then be able to effect low-gear restarts on precipitous gradients, while balancing his machine with both legs straddled, and both feet on the road.

### The American Saucer Track Smash.

The later American press comments on the terrible saucer track smash at Newark, N.J., are not pleasant reading. It is alleged that Hasha had been in the doctor's hands for a week past, and only started in the race under pressure from the management. These saucer tracks are not technical testing grounds; they are rather a kind of open air music hall, run simply and solely as money-making affairs, and for Hasha to be on the track and not to turn out was as awkward for the management as a night's indisposition of Harry Lauder would be for a hall where he was billed, or Hamlet with the part of Hamlet omitted. A racing veteran, Frank Hart—the man whose leg was broken in the smash he had with de Rosier last year—was standing just opposite the point where Hasha's machine ran amuck; he says Hasha fainted, and left hold of his handle-bars, so that his Indian simply swirled over the top of the steep banking, and ran round along the faces and chests of the spectators in the front row.

Allbright was close on his back wheel, and was knocked off the banking immediately; the wives of both men were present, and saw their terrible end. The same witness denounces the track management and the F.A.M. (a body corresponding to our A.C.U.) for setting six men, all capable of lapping at 90 m.p.h., to race on a track of the four laps to the mile type, on which there was only room for three men to ride abreast. Seymour, who was leading when Hasha fainted, covered two more laps before he could pull up, and this at the rate of little worse than ten seconds per lap.

After the smash the crowd stole most of the fragments of Hasha's machine as souvenirs. Hasha received a fee of £30 per night. Naturally the career of a saucer track racer is extremely brief, and men

are attracted to the work by the prospect of earning enough in two seasons to start in business.

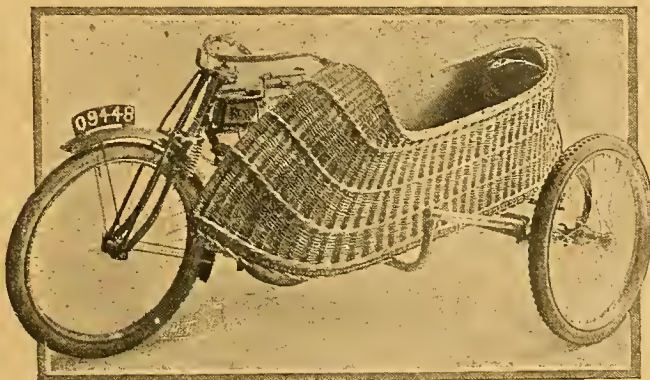
The whole affair leaves a very nasty taste in one's mouth, and makes us hope that these morbid and perilous exhibitions will never become popular in Great Britain; they are too nearly akin to the gladiatorial shows of ancient Rome to be termed sport. There are few issues of the American motor cycling papers which do not record smashes on either the saucer or dirt tracks; in this accident six persons were killed on the spot, and a score more received serious injuries.

### Increased Taxation.

We cannot very seriously complain that a revision of motor taxes is impending; the present scheme bristles with absurdities. In our own field, a tenth-hand  $1\frac{1}{4}$  h.p. featherweight bought for, say, £10, and a brand new 8 h.p. with sidecar costing about £80, both pay the same tax. In the car sphere, a third-hand 50 h.p. 30 cwt. car, picked up at auction for under £100, pays a higher tax than a de luxe lightweight up-to-date chassis weighing, say, 17 cwt., bought brand new for £500. It may be questioned whether horse-power is the correct basis. I suppose the really fundamental principle underlying sound taxation is to discover the man with the biggest income and make him pay in proportion.

A horse-power basis is a roughly accurate method, since the more powerful the motor, the more it costs to run; but as the motor industry grows more adult and complex, it caters for the needs of two classes. In both car and cycle worlds you find the man who wants the maximum of power and pace obtainable for his money, and, side by side with him, another man who wants the absolute cream of design and workmanship, irrespective of speed and horse-power.

Taxation based simply upon horse-power misses this distinction. I expect the wisest compromise would be to tax machines bought as second-hand upon their second-hand price, or to reduce their taxable value by a certain percentage for each year of their life.



The Regal racing sidecar built by Smith and Woodhouse, Ltd., for track work. The chassis was illustrated in our last issue, page 1097.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### Winter Riding.

Sir,—The winter will soon be upon us, and I should like to call readers' attention to what I consider the best boots for keeping one's feet warm and dry. I am an all-weather rider, and find military leather riding boots over a pair of woollen stockings the thing. They keep out the weather, have no laces to collect mud, and are easily cleaned. At the end of a journey they polish up splendidly, and are neat in appearance. It is advisable to rub a little French chalk inside the boots—at the instep and just above the heel—when they will slide on and off quite easily. FRANCIS WM. FLEXMAN, JUN.

#### Rowdy Behaviour.

Sir,—It seems that certain motor cyclists recently amused themselves by "blinding" through a meet of staghounds on their low gears, with open exhausts, after which they proceeded to repeat the performance in front of a quiet hotel, which they afterwards entered dripping with mud and rain.

They have since boastfully owned to this behaviour, which inclines me to suppose them innocent. Surely the A.C.U. should take steps to investigate the truth of the matter, and, if it be proved, suspend the offenders indefinitely.

C. P. SYMONDS.

#### Suggested Revision of the Motor Acts.

Sir,—Surely the time has come now for one of our wealthy organisations to agitate for a drastic revision of the Motor Acts? Members would appreciate far more legal permission to travel at reasonable speeds in the country than the most ingenious and expensive scheme for outwitting the police. The excuse so far seems to have been that matters would adjust themselves automatically; no one can say this has been the case—on the contrary, ten-mile limits multiply monthly. This could be tolerated if accompanied by increased freedom on the open road, but even there we are submitted to split second timing in zealous endeavours to detect technical breaches of the law. Meanwhile, the guardians of our sport apparently remain apathetic. Can it be that they fear to lose members when the principal reason for the existence of their patrols and guides is past?

C.H.M.

#### An Appeal to Car Drivers to give Motor Cyclists More Room.

Sir,—Will you or any of the readers of *The Motor Cycle* suggest some scheme which will bring chauffeurs of large motor cars to understand the absolute necessity for giving motor cyclists, especially sidecarists, full share of the road?

It is the one danger completely out of the control of the motor cyclist, excluding mechanical troubles of course. Every now and then one sees accounts of accidents, motor cyclists colliding with motor cars, but very few of us are suicidally inclined, and I believe these collisions are frequently due to the careless and negligent driving of the larger cars, in that they will not go far enough to their own side of the road.

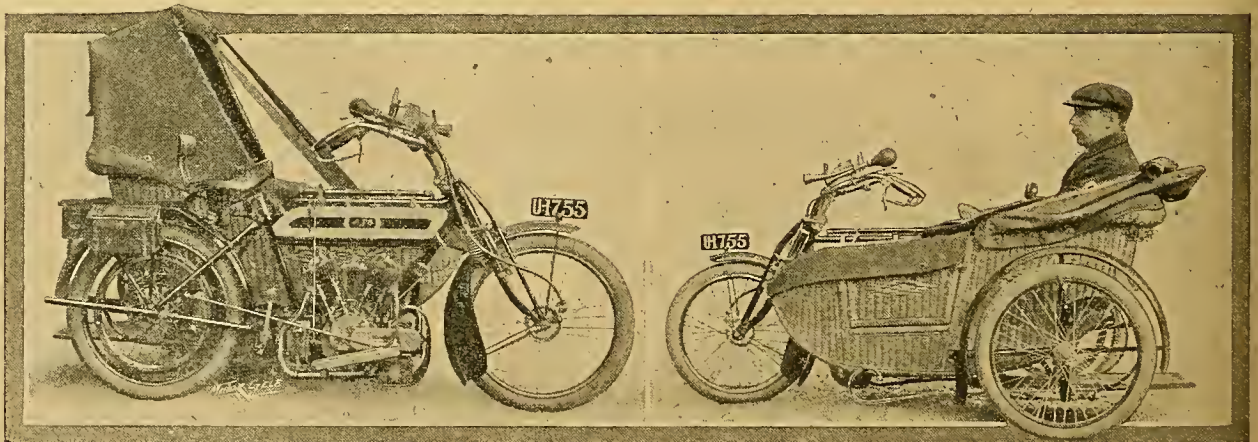
The sidecarist is squeezed to the very edge of the kerb, perhaps on to it, or some similar obstruction at the side of the road. This causes a wobble, the handle-bar touches some part of the car, and, in many cases, all's over. The story is then told at the following inquest by the survivors (always the car), and, *nemine contradicente*, it is accepted. I am quite aware of the seriousness of such a statement, and I am not making it in a light-hearted manner. I am making it after due consideration and after many unpleasant experiences—but fortunately without the wobble or handle-bar catching the passing car—but only because of luck in not striking the kerb, and just managing to keep the outfit in a steady course. No credit to the driver, however, for that, who quite unnecessarily compels one to go through these ordeals, with three, four, five or more feet to spare on his side.

MEDICUS.

#### A Hooded Sidecar.

Sir,—Having seen in your issue of the 12th ult. a motor cycle with sidecar having a special hood, apparently made in France, I venture to send you photographs of my sidecar with hood designed by myself and ably carried out by Messrs. Brownlow, of Leeds. The bodywork is of best canework and the latest torpedo design. The hood when up has a sloping front to cut the wind, with a tale window in it, also a ventilator opening behind. The front flap rolls up as shown in the photograph, and when down fastens on to the stays at the side and on the apron at the bottom. The machine itself needs no words of mine to praise it.

A.J.S.



An efficient sidecar hood designed by a Yorkshire reader. See letter signed "A.J.S."



## Single-cylinder Sidecars.

Sir,—I think I would like to give a small account of a three weeks' tour my wife and I enjoyed this August in spite of the delays of rain day after day. I first of all took delivery of a 1912 popular chain drive. From the moment I had machine trouble begun with a slipping clutch; this I had attended to by efficient engineers on no less than four different occasions, but the money I spent did the clutch no good. Not to be discouraged about a  $\frac{3}{4}$  h.p. and sidecar, I took delivery of a Rudge-multi, on which, in three weeks, I travelled, with my wife as passenger and two suit cases, 1,500 miles by speedometer, going over some of the worst roads in England and Scotland. During the whole time, the engine never faltered, nor did the belt slip through all the bad weather, which was, I think, partly due to the multi gear.

New York, U.S.A.

ALBERT PERRY.

## Change-speed Gears.

Sir,—I think "H.W.B." and others have rather misjudged the two-speed counter-shaft gear box. I have tried both hub and counter-shaft gears and find the latter much superior in many ways. The two machines that I have had with hub gears have given me trouble, the latter one especially. They may be all right for lightweights, but certainly not in the same street with the gear box for sidecar work. There are two very good reasons why hub gears are unsatisfactory. (1.) There is more power developed in the back wheel than in the counter-shaft owing to the gear ratio from engine pulley to counter-shaft being less generally than from the engine pulley to the back wheel, therefore more strain on the back wheel. (2.) There is more room for gears in the frame. Most of the good two-speed gears are larger without clutch than the hub gears with three gears and clutch. Change-speed gears are the coming thing—therefore why cramp them up into as little space as possible?

W.B.E.

## Substitutes for Petrol.

Sir,—I should like to have your readers' opinions regarding a device in connection with the use of paraffin instead of petrol.

At present, so far as I can gather, the carburettors made for use with paraffin make it essential to have a small petrol supply for starting the engine when cold. Do you think that by having a pipe fitted from the exhaust pipe to the carburettor (forced feed) it would remove the difficulty of starting a cold engine on paraffin? The feed pipe would have to be of sufficient length to cool the exhaust gas, I suppose, as in the case of the latest Martin-Jap machines. While the machine was run with the exhaust valve lifted, would there be sufficient power in the exhaust pipe to drive air through the forced feed pipe, thus making a high velocity past the jet? Would not this vaporise the paraffin sufficiently to enable one to start an engine on paraffin?

I should be pleased to hear if any of your readers have made this experiment, and whether the defects exceeded the advantages, or otherwise.

L. E. S. VAILE.

## Dilatory Attention to a Foreign Order.

Sir,—One or two letters have recently appeared in the columns of your valuable paper, showing how the American manufacturers are striving to push their machines and accessories into Canada, and is it really suprising, when one hears so continually the delay experienced in the delivery of the "British" manufactured articles?

On the 10th of April last I ordered through a large Calcutta firm, a six guinea speedometer from an accessory firm in London who advertise these articles, together with lamps and generators, and after waiting three months without receiving the article, wrote and asked the reason, and the reply was to the effect that they had sold out the make I required last Olympia Show and had not been able to get one from the makers since, but that they would execute my order in the course of the next week or so, but no further news up to the present.

The worst part of it is, one has to pay the usual deposit with order, and wait the manufacturers' leisure for the order to be executed. From the 10th April to 20th August should be sufficient time for the making of one speedometer.

Barrackpore, India.

DISGUSTED.

## Motor Cycle Taxation.

Sir,—I should like to say a word about the proposed alteration of the tax on motor cycles. If there is going to be any alteration, why not do away with the licence and put an extra tax on the petrol? Such an alteration would be just to everyone: all would pay in proportion to the use of the roads, also in proportion to the power of the engine. It would also be a good thing for the industry.

R. GREEN.

Sir,—I was astounded to read the paragraph relating to motor cycle taxation, which is most unfair to motor cyclists generally.

If the recommendation becomes law, an entirely different type of engine will be demanded to evade the tax. The outcome of the experience gained has brought about the general design of engine of to-day, which has approximately equal bore and stroke, and to compare and place on the same taxation basis with the motor car engine, with stroke twice the bore, is ridiculous. Again, the power developed by an air-cooled engine is twenty-five per cent. below that of a water-cooled engine of equal bore and stroke, and even that only for short periods.

The existing jigs, drawings, patterns, and in some cases special machines, will become a dead loss to the makers, except for renewal purposes.

To my mind, there should be some relation to the value of the machine in the basis of taxation, and I hope every motor cyclist will make an endeavour to combat this unjust proposal, even if it does not affect him, but for the sake of the poorer end of the body, motor cycling is the poor man's motoring.

BILL JACKS.

Sir,—Manufacturers of all twin sidecar and cyclecar outfits realise that the proposed taxation means the last straw to over half their customers. Do sidecarists know that with this additional imposition on top of our present taxes it will cost them 2s. 6d. every time they go out? I am taking the majority of sidecarists to be the week-end rider, whose average journeys would not be more than forty in the year. Has the fact been brought to this Motor Taxing Committee's notice that the majority of motor cyclists are just a working class of individual whose only hobby is his motor, for which he already pays too dearly?

J. TASSELL.

Sir,—It was with consternation that I read of the proposed increase in taxation of motor cycles. I purchased for £55 a second-hand motor cycle (8 h.p.) and sidecar. My yearly expenses are about as follows:

	£	s.	d.
Petrol, 60 galls. at 1s. 3d. (exclusive of tax)	3	15	0
Oil	...	...	15 0
Tyres and belts	...	...	8 10 0
Repairs, about	...	...	1 10 0
	£14	10	0

I already pay petrol tax (60 gallons at 3d.) 15s., driving licence 5s., motor cycle licence £1, total £2. It is proposed to increase this by £2 2s., or to £4 2s. Is it seriously thought that a person who can, by strict economy in other directions, pay £14 annually for his recreation, including use of machine on his summer holiday, also pay £4 2s. in taxation, especially having regard to the present inflated and unjustifiable price of petrol? I should like to see the petrol companies mulcted instead. It may be a slight matter to wealthy owners of large cars, but to the small fry it is a most serious thing. Even to those who can afford £80 odd for a first-class new sidecar combination it is oppressive. To the workman who picks up a small-powered second-hand machine for £12 or £15 the tax of £1 5s. is equally hard. A motor cycle and sidecar is a poor man's machine. I have about fifty rides per year. The taxes would be 1s. 8d. *per ride!* What with income tax, duties on tea, coffee, spirits, beer, and tobacco, servants' insurance stamps, employees' liability insurance, heavy rates, etc., the middle class (incomes, say, £300 to £600) is being crushed out of existence.

The man who keeps a dogcart and six horses (one for every day in the week, and must have an income of £2,000 or so to do it) gets off with 15s. for the dogcart. [Bridle horses also pay no tax.—Ed.] It is proposed that I pay £3 3s., or as much as the owner of a luxurious car, who may



afford £150 per year or more to keep it going. I bought my 8 h.p. machine solely to have power for hills, not for speed work, having found that a 3½ h.p. machine was no good for bad hills if a sidecar were attached. My speed, except on hills, is no greater with the 8 h.p. machine than with the 3½ h.p.

All I seem to get for my £2 5s. at present is a species of purgatory in riding over the twenty miles or so (out and home) of badly-kept suburban roads in getting to the country. I am sure the proposed increase, if made law, will be the most disastrous blow ever dealt to the motor cycle industry. The manufacturers and dealers will soon find this out. I for one shall have to give up motor cycling.

I would suggest that strong representations be made to members of Parliament by all motor cyclists and by the manufacturers and dealers, protesting against any increased taxation and asking for a reduction of the present tax of £1 in the case of machines under 500 c.c.

#### ONE OF THE SMALL FRY.

#### Three and Four-wheeled Cyclecars.

Sir,—Mr. B. H. Davies always makes interesting and usually instructive reading, but inasmuch as his article, "Points in the Choice of a Cyclecar," will probably be perused by prospective as well as actual owners of these vehicles, I am tempted to champion to some extent the three-wheeled variety, being an extremely satisfied driver of one over a distance of 1,100 miles. Firstly, with regard to the disastrous results or otherwise of a "burst rear tyre," I fear personal experience of such is nil, for in nine years' almost daily motoring vagaries on cars, cycles, and cyclecars, I have never had a burst tyre on the road, and hence the odds are against my three-wheeled friend letting me down for a similar cause. Secondly, I am very much in accord with his opinion that "the average motor cycle engine is not designed to tick over slowly." My cyclecar is engined with a very popular 8 h.p. air-cooled cycle engine, but it has a big flywheel, and it will "tick over slowly." When I took delivery of same, its racing propensities, in the free engine and when changing gear, were appalling to a sensitive driver; this difficulty I entirely overcame by the simple expedient of fitting my carburettor with a variable jet controlled by a lever on the dashboard. My driving involves constant stops (level crossings, etc.), and embraces hills above the touring average, but anything approaching engine racing is a thing of the past, and incidentally my petrol consumption has increased from fifty to sixty-two miles to the gallon.

In conclusion, I can, as a motorist of ample experience, anticipate no improvements that could render my own three-wheeler more efficient and more delightful to use, and I am amply repaid by the result for a weary wait of seven months before delivery.

FELICITAS.

Sir,—The battle of three and four-wheeled cyclecars has been fought on paper with spirit by both sides, but is it not time to ask for facts and not fancies?

A contributor to *The Motor Cycle* asks where would the rider of a three-wheeler be if his back tyre burst? From

regrettable incidents lately, it would seem that the fate of the driver of even a large four-wheeled car is not always a happy one in such circumstances. There are very many more three-wheeled cyclecars on the road to-day than four-wheeled, to say nothing of the host of sidecars. Have more serious mishaps from burst tyres occurred to the former than to the latter? If so, when and where?

As regards reliability, the English Six Days' Trials, which one hoped might be decisive, left the three-wheeler with an indecisive victory. One G.W.K. (four-wheeler) out of two entered gained full marks and gold medal. The one Morgan (three-wheeler) entered did the same, and beat the G.W.K. on Porlock. One A.C. (three-wheeler) obtained a bronze medal. All the other cyclecars failed. It might perhaps be taken into account that the only successful four-wheeler cost nearly half as much again as the successful three-wheelers.

Let us by all means "cut the cackle" of theorising, and come to the practical test of up-to-date experience. Would the principal makers of cyclecars of both types submit to some severe comparative test, and would the A.C.U. or the R.A.C. carry it out *pro bono publico*?

W. COUPLAND.

#### Amateur Police Traps.

Sir,—I read with mingled surprise and regret the paragraph under the above heading, which appeared in your issue of the 26th ult. Surprise that a well-informed journal like *The Motor Cycle* should have given publicity to such a ridiculous rumour, and regret at the underlying hostility to the C.T.C. which can be read into the last sentence of the paragraph.

Permit me, sir, to state most emphatically that the council of the Cyclists' Touring Club knows nothing of the independent amateur detective agency referred to by *The Autocar*, and if the proposed enterprise on the part of a few individual members of the C.T.C. in a certain district is ever brought officially to the notice of my council I am well assured it will not meet with either their sympathy or their approval.

The Cyclists' Touring Club aspires—and with conspicuous success I venture to assert—to cater fully for motor cyclists. It is using all the resources at its command, its organisation, its experience, and its funds to attract and keep this section of the wheeling public. This being so, the suggestion that it contemplates a war on motor cyclists is unthinkable. I trust that, in common fairness to the C.T.C., you will find space for this letter in your next issue.

W. S. BURKE, Secretary C.T.C.

#### SUMMARY OF CORRESPONDENCE.

"O.P." writes: "It may interest your readers to know that I successfully drove my 4½ h.p. Regal-Precision right to the summit of the Great Orme, Llandudno, above the hotel, with sidecar and passenger last month, having previously taken a passenger on the carrier. The machine was fitted with a Sturmey-Archer three-speed."

A letter signed "Spectator" complaining of the delay, timing, and other matters in connection with Torbay and District M.C.C. hill-climb is withheld. Communications such as these should appear over the writer's signature.

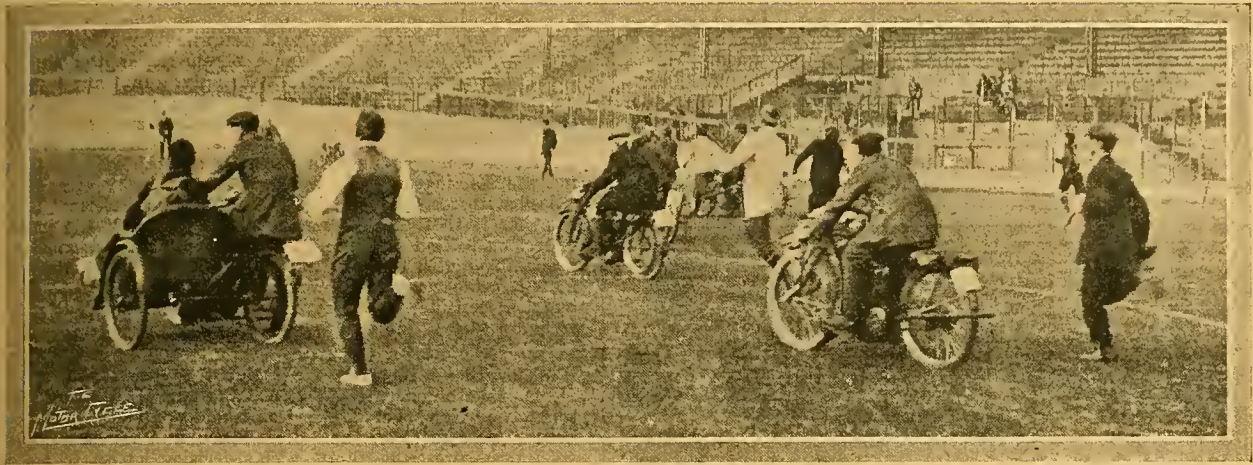


Sheffield and Hallamshire M.C.C. hill-climb at Cordwell Hill, Derbyshire. A group of competitors and friends at the foot of the hill.



# GYMKHANA AT THE STADIUM.

High Horse Powers and Insufficient Banking cause Two Accidents.



N.W. London M.C.C. race meeting and gymkhana at the Stadium. "Take the pig to market" race. This and some other events were run off on the grass.

THE North West London M.C.C. held their annual gymkhana on Saturday last. Unfortunately, there were two accidents owing to speeds being attained on machines which were too powerful for the banking of the track. A. J. Dreydel had a fall and a bad shaking at practice, and in the multi-cylinder race D. Grey Blakey lost control; he was thrown quite eighteen yards, and sustained a compound fracture of the arm, in addition to sundry cuts and bruises. In the open events only lightweights were allowed, but the members might use any machines they pleased. Later enquiries showed that Blakey was progressing favourably. Results:

## "Take the Pig to Market" Race.

- I. Passenger Machines Handicap (three lap).—1, S. Hiltouse (3½ Zenith sc.); 2, W. C. Knight (8 Zenith sc.). Time 2m. 13s.
- II. Lightweight Scratch Race (two lap).—1, W. Cooper (Douglas); 2, P. H. Goddard (Douglas). Time 59½s.
- III. Scratch Race (three lap—for singles).—1, E. F. Laurence (Rudge); 2, E. Gwynne (Rudge). Time 1m. 22s.
- IV. Taking the Pig to Market (for motor cyclists and foot passengers, holding a seven foot string).—1, O. Hill (Douglas).
- VA. Lightweight Handicap (three lap).—1, H. J. Pooley (2½ Premier); 2, H. E. Taylor (2 Humber). Time 1m. 56s.

Vb. Douglas Handicap (three lap).—1, P. H. Goddard (12s.); 2, W. Cooper (scr.). Time 1m. 37½s.

VI. Multi-cylinder Scratch Race (three lap).—1, R. L. Printz (5 Bat); 2, A. Brunton (5 Bat). Time 1m. 15½s.

VII. Air Balloons.—1, G. H. Hollis; 2, A. Brunton.

VIII. Open Lightweight Scratch Race (three lap).—1, F. G. Barker (2½ Zenith); 2, R. Holloway (2½ Premier). Time 1m. 23s.

IX. Single-cylinder Handicap (four lap).—1, E. Gwynne (Rudge); 2, E. F. Laurence (Rudge). Time 1m. 55s.

## Attempt on Mile Record.

Attempt on the mile record for engines not exceeding 330 c.c., which stood at 68½s.—H. Martin (1½ Martin, 270 c.c.), 64s.; F. E. Barker (2½ Zenith, 294 c.c.), 71½s.

X. Musical Chairs (lady passengers).—H. E. Taylor and Miss Taylor; (solo machine) R. L. Printz.

XI. Open Lightweight Handicap (four lap).—1, F. E. Barker (2½ Zenith), 5s.; 2, H. Martin (1½ Martin), scr. Time 1m. 46½s.

XVI. Relay Race.—Pink Team: H. Berlandina (Douglas), C. Rose (Rudge), A. Brunton (5 Bat), and E. G. Westcott (3½ Zenith sc.).

XVII. Solo Machine Handicap (nine lap).—1, P. H. Goddard (Douglas); 2, W. Cooper (Douglas); 3, E. L. Buchanan (3½ Premier).

XIII. Turks' Heads.—1, H. J. Pooley; 2, G. H. Hollis.

Start of the three-lap open scratch race. The winner, F. E. Barker (2½ Zenith), is seen on the left of the picture.

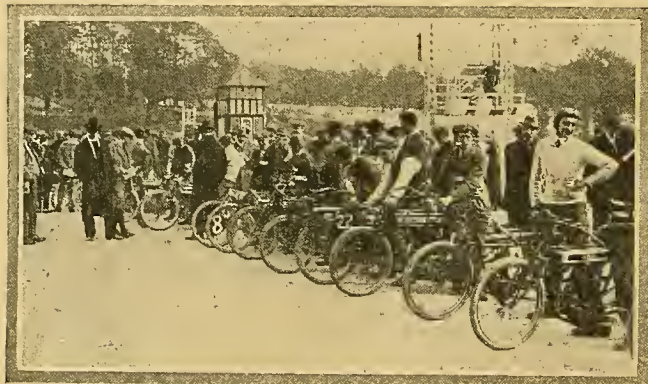




# Motor Cycle Racing at Brooklands.

## The Last B.A.R.C. Meeting of the Year.

**T**HE last meeting of the year of the B.A.R.C. on Saturday last was a distinct success. The weather was glorious, and the attendance was very good. Unfortunately, the wind was too high for flying. The one motor cycle race had attracted twenty-six entrants, of whom twenty-three took the line at the fork. At the start all got away without difficulty. McNab's Douglas gathered speed with marvellous rapidity, but Bailey's machine did not on this occasion appear to accelerate quite so quickly. The



Final meeting of the 1912 season at Brooklands. Competitors lined up for the twelfth short motor cycle handicap.

two inseparables, Jacobs and Le Grand, both on identical machines (2½ h.p. Singers) had exactly the same start, and went off with but a few yards between them, but at the finish several places divided them. The race appeared in the programme as the Twelfth Short Motor Cycle Handicap. The machines had to pass the fork once and then enter the straight. The prizes were as follows: The entrant of the winner £10 or cup at option, the entrant of the second £5 or cup at option, the entrant of the third £3 or cup at option. The order past the fork at the end of the first lap was as follows: Square, Jacobs, Le Grand, Cocker, Bailey, Pressland, Walker, Hall, Manners-Smith, Hill, McNab, Elce, Stanley, Garrett, Roberts, Lavender, Axford, Remington, and Keller. Remington (Matchless) gradually forged ahead, and came in first with ease. Owing, however, to the failure of

his front brake he went straight up the banking and over the top. Great excitement prevailed for a few seconds, after which, much to everyone's relief, Remington stood on the bank waving his arms reassuringly. Immediately after his disappearance the nearest policeman rapidly scaled the bank perceptibly, slowing up as the gradient steepened. Panting, he changed to first, or, in other words, dropped on to all fours, being so busy in securing a foothold that he did not see Remington, who had had such a lucky escape, convulsed with merriment at his well-intentioned efforts. Report also has it that another man climbed the bank hat in hand expecting to find a corpse. The fortunate rider escaped with a shaking and a few scratches from the brambles into which he fell, while his machine was not much damaged (both wheels buckled) considering the severe nature of the accident.

### Brake out of order Causes Disqualification.

Major Lloyd reported the incident to the stewards, Col. H. C. L. Holden, F.R.S., R.A., and Mr. J. W. Orde, who took the view that Remington should have seen that his brakes were in order, and disqualified him for not stopping within the prescribed limit. This decision let up L. Hill (¾ Rudge) to first place, W. H. Elce, on a similar mount, being second. His speed was 73½ m.p.h. The result was as follows:

Rider and machine.	Bore and stroke.	c.c.	H'cap.	
			m. s.	
1. L. Hill (1 cyl. Rudge) ...	85×88	499	0 42	
2. W. H. Elce (1 Rudge) ...	85×88	499	0 42	
3. S. L. Bailey (2 Douglas) ...	61×60	350	1 4	
H. H. Square (1 Robin-Minerva)	69×69	258	3 0	
W. Jacobs (1 Singer) ...	69×80	294	1 56	
J. A. Manners-Smith (1 Triumph) ...	85×88	499	1 4	
S. Hall (1 Rudge) ...	85×88	499	1 14	
C. Pressland (1 Rudge) ...	85×88	499	1 24	
S. F. Garrett (1 Green-Precision)	85×88	499	0 50	
F. A. McNab (2 Douglas) ...	61×60	350	1 14	
J. P. Le Grand (1 Singer) ...	69×80	294	1 56	
S. R. Axford (2 Martin-Jap) ...	76×55	499	0 42	
G. Roberts (1 Rudge) ...	85×88	499	1 4	
A. Symes (1 Triumph) ...	85×88	499	1 14	
A. G. Walker (1 Rudge) ...	85×88	499	1 4	

The winner's speed was 65½ m.p.h. Thacker (Martin-Jap) retired owing to a broken belt.



Motor cyclists who rendered signal service on Covenant Day at Belfast. Ulster motor cyclist despatch riders and signalling corps starting out with heliographs and flags to flash messages from outlying districts to Belfast.



# Paris-Tours Reliability Trial.



The start of the Paris-Tours Reliability Trial last Sunday, in which over fifty competitors, including several British riders, took part.

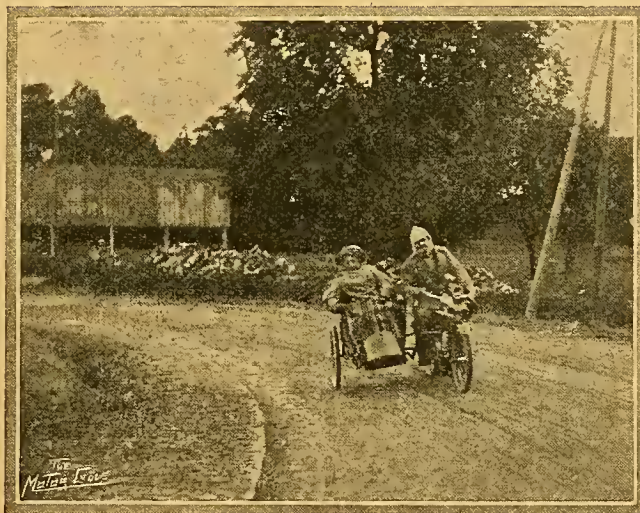
The above event, organised by the Touring Club of France in conjunction with the Veloce Club of Tours, and under the regulations of the Automobile Club of France, took place on Sunday last. The following British competitors and machines took part: Pollack (2½ Singer), W. D. South (3½ Rudge), A. J. Dixon (3½ Singer), Rex Mundy (3½ Rudge), and C. L. Scott (3½ Rudge). Devay, the winner of the Grand Prix de la Sarthe, rode his 3½ Triumph. Altogether fifty-three entries were received in four classes. Vernon Taylor who had entered was, owing to his recent suspension, replaced by C. L. Scott. Unfortunately, the winners of the various classes cannot be announced, as the flexibility test, which was to decide the winners, could not be held owing to darkness falling before the close of the event. The flexibility test will take place in the neighbourhood of Paris at a later date, when the prize winners will be officially announced. The following lost no marks:

## CLASS I.

Lacroix (Peugeot) | Kamermant (Lurquin - Cou-  
Tatin (X—) | dert)

## CLASS II.

Poulain (N.S.U.) | Pollack (Singer)  
Gompertz (New Hudson) | Vuillemin (Clément)  
Guyot-Desvarennes (N.S.U.) | Golaz (Gladiator)  
Fenton (Clément) | Finat (Peugeot)  
Sweerts (Terrot) | Robertson (Motosacoche)  
Pernette (X—) | Honorez (N.S.U.)  
Barberet (Motosacoche) | Paul (N.S.U.)  
Peau (Peugeot) | Gabriel (Clément)  
Brunet (Griffon) | Colas (Peugeot)



Desitter (6 h.p. Twin N.S.U. and sidecar), a successful competitor in the Paris-Tours Reliability Trial.

## CLASS III.

Closs (N.S.U.) | Mundy (Rudge)  
Burghard (Rudge - Whit- | C. L. Scott (Rudge)  
worth) | Dubost (René Gillet)  
Devay (Triumph) | Rousseau (New Hudson)  
W. D. South (Rudge) | Brubach (Peugeot)  
Touchet (Wanderer)

## SIDECARS.

Desitter (N.S.U.) | Lightfoot (N.S.U.)  
Honorat (Indian)

Results of the speed trial on the Velodrome:

	secs.		secs.
1. Golaz (Gladiator) ...	44	6. Devay (Triumph) ...	49
2. Pernette (X—) ...	4	7. Closs (N.S.U.) ...	50
3. Vuillemin (Clément) ...	47	8. South (Rudge) ...	50
4. Paul (N.S.U.) ...	48	9. Fenton (Clément) ...	55
5. Scott (Rudge) ...	49	10. Brunet (Griffon) ...	54

The race for the Grand Prix resulted as follows:

First Round.—1, Pernette; 2, Bruneng; 3, Hervé.

Second Round.—1, Pernette; 2, Bruneng; 3, Hervé.

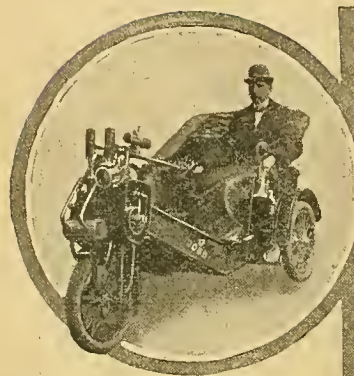
The last-named was disqualified for cutting in on Bruneng.



A rear view of some of the competitors reproduced to show the very legible numbers they carried on their backs.



## DUTCH PRIVATE OWNERS' RE-RUN TRIAL.



Lt. H. Daalmeyer (6 h.p. Cyclonette), winner of the P. and M. cup.



The start. The winner is on the extreme right of the picture.

It will be remembered that on the occasion of the English-Dutch reliability trial five members of the Dutch M.C.C. tied for the P. & M. Cup, offered for the best performance by a Dutch private owner. The trial was re-run last week over the same course and under the same conditions. Three motor cyclists rode with each competitor to ensure that he made a non-stop run, and club officials occupied the spare seats of the passenger machines. Four riders experienced no mechanical trouble whatever, the fifth, H. Dieters, on a Phanamobile, with A. Citroen, the hon. sec., as checker, ran into the canal between Apeldoorn and De Steeg. The occupants clung to the machine and ultimately managed to scramble out. The result was: Lieut. H. Daalmeyer (6 h.p. Cyclonette), n.s., error in time 0; G. Th. Arends (2 h.p. Vulkan), n.s., 1; J. H. Nieuwenhuys (2½ Douglas), n.s., 1; P. N. Jelsma (2½ Eysink), n.s., 2.

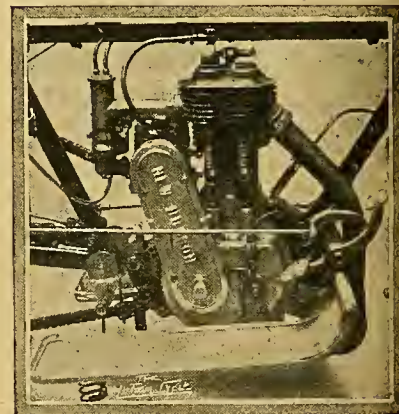
## A STEEL-TREADED TYRE.

Thanks to the courtesy of Mr. A. W. Torkington, of Torkington Tyres, Ltd., 76, York Street, Westminster, S.W., we are enabled to give details and illustrations of the Stelastic motor cycle tyre, which behaved so well in the Six Days' Trials.

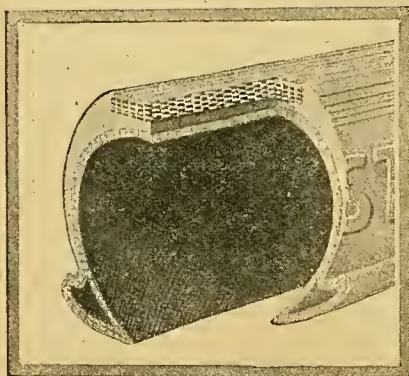
As regards its construction, the carcass of the tyre, beyond being of the very best material, presents no special features, as it is no departure from standard practice, the whole novelty

the rubber and steel do not part. A layer of rubber is inserted between the armoured tread and the fabric, so that the springs cannot penetrate. As a non-skid, the cover is effective on wood and asphalt, but in its present form, owing to its having no projection, it is not quite so effective in slimy mud as a studded tyre. All those who have used the cover have told us that cuts in the tread are impossible; punctures are almost entirely prevented, and the only record of a puncture we have heard of is from a thin nail, which was apparently struck at the correct angle and entered between the layers.

Mr. Torkington has gone the right way to work, and has not put the Stelastic covers on the market without first of all putting them to some private and public tests, not only on high powered cars, but on motor cycles from 3½ to 7 h.p. We hope shortly to test the cover on one of our own machines, and shall report upon its behaviour.



Valve side of the 1913 2½ h.p. three-speed New Hudson power unit. The magneto is chain-driven, and the spring footboard will be noted.



Sectional view of the Stelastic tyre. The tread is composed of coil springs with rubber forced between the coils by hydraulic pressure.

being in the tread. The accompanying sketch shows of what this is composed. Coils or springs of hardened steel piano wire are woven into the fabric, and under hydraulic pressure of 70 lbs. to the square inch pure rubber is forced into the former. Each piece then becomes practically a sheet of rubber.

## Springs add to the comfort.

This is guillotined off into strips, which are placed upright side by side and form the tread. Since the steel is springy, the resiliency is not affected, as when the rubber is compressed by the weight of the motor cycle on the road the springs compress in harmony, while

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 17s. 4d. per annum.

COLONIAL AND FOREIGN AGENTS.—UNITED STATES: The International News Agency, New York. PARIS: Smith's English Library, 248, Rue Rivoli. AUSTRALIA: Gordon and Gotch, Ltd., Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania). NEW ZEALAND: Gordon and Gotch, Ltd., Wellington. AUCKLAND: Christchurch, and Dunedin. CANADA: Gordon and Gotch, Ltd., 132, Bay Street, Toronto. SOUTH AFRICA: Central News Agency, Ltd.

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## HILL-CLIMBING IN WESTMORLAND: Longsleddle to Kentmere Pass.

Mr. Nelson, of the Westmorland M.C.C., recently challenged any fellow-members to climb the above ascent, and of course the challenge was taken up by a number. It was climbed for the first time in history about a fortnight ago by W. Westwood on a three-speed (Sturmey-Archer) Triumph, but one day this week quite a large party turned out to scale it. Zeniths, Ridges, Indians, Bats, Matchless, Braithwaites, Premiers, Scotts, B.S.A.'s, and Enfields, etc., were represented. A start was made from a bridge on the main road, a lane then turns sharp to the left into a farmyard, and then to the right and left again. The surface is grass-grown most of the way, enlivened here and there by small watercourses across the track. The gradient for the first 150 yards is about 1 in 5, then follows about 200 yards of fairly easy climbing, after which the fun commences. The gradient gradually reaches 1 in  $3\frac{1}{2}$ , and of course the usual corkscrew piece is included.

The determination of the riders in attacking the climb was very creditable, some trying six or eight times. The following conquered the hill:

J. Braithwaite ( $3\frac{1}{2}$  h.p. Braithwaite),  $6\frac{1}{2}$  to 1 fixed gear.  
G. W. Braithwaite ( $3\frac{1}{2}$  h.p. Rudge), Bowden two-speed, bottom ratio 10 to 1.

R. Bowness ( $3\frac{1}{2}$  h.p. Matchless),  $5\frac{7}{8}$  to 1 fixed gear.  
E. Jefferys (5-6 h.p. twin Bat-Jap),  $6\frac{1}{2}$  to 1 fixed gear.  
W. Westwood ( $3\frac{1}{2}$  h.p. Triumph), Sturmey-Archer three-speed gear.

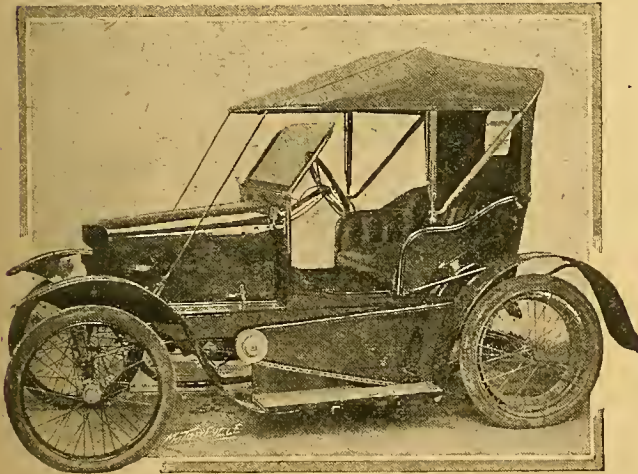
Several failed through various causes. Sidecars need not attempt the hill, as they could not be driven round the

corners. The hill is practically unclimbable in wet weather, as the surface is treacherous when wet and causes side slipping. The foot of the hill is about ten miles from Kendal, and is reached by turning off the Shap to Carlisle road  $4\frac{1}{2}$  to 5 miles out of Kendal.



Hill climbing in Westmorland. R. Bowness ( $3\frac{1}{2}$  h.p. Matchless-Jap), who at the twelfth attempt got up Longsleddle to Kentmere Pass with a fixed gear of  $5\frac{7}{8}$  to 1. This was the highest fixed ratio used by any of the party.

## LATE CLUB RESULTS.



Side view of the Kendal cyclecar with hood and wind screen. This cyclecar is made by Kentall's Motors, Sparkhill, Birmingham, and has an 8 h.p. twin-cylinder engine, 80 x 94 mm., ash frame, plate clutch, two speeds forward, and 26 x 2 1/2 in. tyres. The final drive to rear wheels is by belts which are well protected.

## Liverpool A.C.C. Trial Results.

The results of the trial described on page 1130 reached us on going to press. They are as follows:

WINNER OF RELIANCE CUP AND CLUB GOLD MEDAL.—E. F. Baxter (6 Rex).

BEST PERFORMANCE BY A LADY.—Miss M. Hind (6 Rex).

BEST PERFORMANCE BY LOCAL AMATEUR.—E. F. Baxter

BEST PERFORMANCE ON LIGHTWEIGHT.—W. Heaton (23 A.J.S.)

BEST PERFORMANCE BY AMATEUR SIDECARIST.—J. R. Haswell ( $3\frac{1}{2}$  Triumph sc.)

CLUB MEMBERS AWARDS.—Trade: A. J. Jenkins (23 Douglas). Amateurs: L. Mogridge ( $3\frac{1}{2}$  Mead-Precision).

Among those who gained medals are:

E. A. Eastwood (23 Douglas), S. W. Phillpott (23 Humber), H. New ( $3\frac{1}{2}$  Triumph), V. E. Horseman ( $3\frac{1}{2}$  Singer), S. Crawley ( $3\frac{1}{2}$  Triumph), P. Shaw ( $3\frac{1}{2}$  P. and M.), Mrs. Baxter ( $3\frac{1}{2}$  Rex), H. J. Marston (8 Dot), F. Smith (5-6 Clyno sc.), A. Marston (8 Bat), T. Smyth (5 A.J.S.), M. Rimmer (Zenith), and F. C. Jones ( $3\frac{1}{2}$  Zenith).

## Manchester Amateur M.C.C.

Amended result of hill-climb held at Axe Edge on the 22nd ult.: Class II.—1, P. W. English (7 Indian); 2, H. Marsden (8 Matchless), 1m. 4s.

## Cumberland County M.C.C.

The last event of the season, a speed-judging competition, was held on the 28th ult. The start was from Fendley's garage, Carlisle to Milburn's garage, Penrith, a distance of eighteen miles. The result was as follows: 1, Hilton Robinson ( $3\frac{1}{2}$  B.S.A.); 2, William Beck ( $3\frac{1}{2}$  T.T. Triumph); 2, Stanley ( $3\frac{1}{2}$  P. and M.)

## Aberdeen and District M.C.C.

On Saturday last a flexibility trial was held on the Slug Road. The weather was dry and cold, and there was a large number of spectators. Results: 1, T. Smith ( $3\frac{1}{2}$  B.S.A.), winner of rose bowl presented by the vice-president Mr. J. Spencer; 2, A. Stewart ( $3\frac{1}{2}$  Rudge); 3, W. Simpson ( $3\frac{1}{2}$  Rudge); 4, G. Cumming (2 1/2 Levis). The Levis arrived with a sidecar attached and a 12 stone passenger.

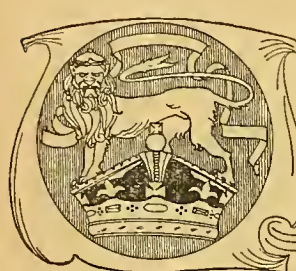
## Burnley A.C.

A reliability trial will be held on the 6th inst. Route, *via* Whalley, Trough of Bowland, Lancaster, Morecambe (stop of about three hours), Garstang, Preston, Mellor, and Burnley. The start will be from the Old Red Lion Hotel, Burnley, at 9 a.m.



Manchester M.C. gymkhana. The cigarette race.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Oct.	3rd	...	6.33 p.m.
"	5th	...	6.28 "
"	7th	...	6.24 "
"	9th	...	6.20 "

## Stolen Machines.

A 1912 2½ h.p. two-speed F.N., No. 32892, has been stolen from 465, Battersea Park Road, S.W. Information concerning it should be sent to the owner, S. C. Buxton.

## To Birmingham and District Riders.

The A.A. has circularised its Midland members, pointing out that the Chief Constable of Birmingham has approached the Association, to see what can be done to prevent certain motor cyclists riding at excessive speeds, and without proper consideration for others. The Association appeals to the good feeling of all Birmingham motor cyclists to assist in preventing further complaints being received.

## The Silencer Question.

The silencer which is the outcome of the preliminary A.C.U. trials has now been made and fitted to a Rudge motor bicycle, which has been tested before Colonel Holden, who is satisfied that it gives the correct degree of silence. Invitations will be sent out this week by the A.C.U. inviting manufacturers to enter for the trial, which it is hoped will be held this autumn. We understand that the Local Government Board is shortly about to issue regulations affecting the use of cut-outs on motor cycles.

## New Irish End-to-end Record.

J. Stewart did an excellent performance on the 25th ult., on his Douglas, as he reduced the previous record made by C. E. Murphy by sixteen minutes, and the lightweight record held by himself by two hours and eighteen minutes. His time for the whole distance was twelve hours and fifty minutes, giving an average for the journey of thirty-one miles per hour. Stewart started at 5.30 a.m. from Mizen Head; the morning was cold and the roads loose. Better roads were met with near Cork, but much delay was caused by herds of cattle. Cork (81 miles) was reached at 8.23. Breakfast was taken at Cashel, after which the journey was resumed at 10.30, when good progress was made, till a horseshoe nail caused a puncture. This was too hastily mended, and a nip soon followed. The road through Dublin was taken in preference to the shorter road through the bog. Near Dundalk, Stewart ran short of petrol, but by tilting the tank and free wheeling down the hills managed to reach a supply. The journey was finished at 6.20 p.m., and the time occupied was twelve hours fifty minutes.

## C. and M. T. Benevolent Fund Dinner.

The Seventh Annual Banquet of the Cycle and Motor Trades Benevolent Fund will be held at the Connaught Rooms, Great Queen Street, on Thursday, October 24th, at 7 p.m. Mr. Albert Brown will be in the chair. This Society is one which is deserving of the greatest support.

## A Record Signpost?

Just off the Preston-Lancaster Road there is a sign post near Garstang with three arms, and the total mileage thereon totals up to 2,493½. It would be interesting to know whether this constitutes a record for one post. It certainly would for three arms. Below are the distances:

North: Lancaster 12, Kendal 33, Carlisle 77, Edinburgh 171, Glasgow 172, Thurso 454.

South: Liverpool 41, Manchester 42, Chester 59, Holyhead 144, London 224, Penzance 387.

East: Chipping 9½, Slaidburn 21, Clitheroe 19, Skipton 36, York 80, Hull 121, Lincoln 131, Lowestoft 260.

## The Motor Cycle in War.

F. Whitaker, of Orpington, who participated in the army manoeuvres on the Blue side, writes that he had to carry a despatch from Wimpole Park to Wendy. The message was from Major Duncan to the effect that the umpire, Major Bridger, was to be at a certain spot at a given time, and that he was unable to go on horse back. The motor cyclist despatch carrier therefore took the umpire on his carrier to the rendezvous and had several minutes to spare.

A prominent journalist writes that in his opinion motor cyclists will supersede cavalry. This is after a fortnight with the combined armies and from an observant writer.

## SPECIAL FEATURES.

### MOTOR CYCLE TAXATION.

### UNOFFICIAL 1,000 MILES TRIAL.

### PARIS-TOURS TRIAL.

## The Institution of Automobile Engineers.

A meeting of the Birmingham Centre of the Institution of Automobile Engineers will be held on Thursday, 17th October, in the theatre of the University Buildings, Edmund Street, Birmingham, when Mr. Douglas Leechman (member) will read a paper entitled "The Influence of Low Production Cost on Quality." The chair will be taken at 8 p.m. by the president of the institution, Mr. T. B. Browne, and an invitation is extended to all those who are interested in the above subject.

## Motor Cycle Taxation.

The A.C.U. is forming a strong committee to deal with the taxation question, the duty of which will be to show up the injustice of the present proposals and suggest alternative ones. Questions will be asked in the House, and, if necessary, the Chancellor of the Exchequer will be asked to receive a deputation. This committee will be under the chairmanship of Mr. Otto Thomas, while Mr. T. W. Loughborough will act as secretary. The three members representing the A.C.U. will be Major Lindsay Lloyd, Major D. F. Nicholl, D.S.O., R.A., and Mr. Archibald Sharp. The following bodies will also be invited to send three representatives each: The Scottish Motor Cyclists' Union, the M.C.U. of Ireland, the Motor Cycle Manufacturers' Union, the Commercial Motor Users' Association, and the A.A. and M.U.



N.W. LONDON M.C.C. GYMKHANA.

The start of the sidecar race at the Stadium on Saturday last, won by S. Hilhouse (3½ h.p. Triumph), who is seen in the centre of the photograph.





J. Farnsworth (3½ h.p. three-speed Rover), the contributor of the article on military motor cycling in this issue.

### Fresh Registration Marks.

The new London County Council registration marks are L.H. This is in addition to A, LC, LN, LB, LD, LA, LE, and LF.

### The Inventor of the Low Engine.

Dr. A. M. Low, D.Sc., the inventor of the Low forced induction engine and the Low detonating plug, has recently been made a doctor of science.

### A Denial.

The Triumph Cycle Co., Ltd., wish us to deny a rumour which has gained ground in Scotland that it is their intention to close their depot in Glasgow. The firm say that they have never even contemplated such a course.

### Military Motor Cyclists.

It is interesting reading to hear that officers who commanded the combined armies in the recent manoeuvres have expressed a wish that next year's motor cyclist despatch riders should be "a proper unit of the Army" instead of being collected by the motoring organisations. We echo the desire.

### Definition of Cyclecars.

A few manufacturers of cyclecars have queried us with regard to the admission of cyclecars at the Olympia Motor Cycle Show. The Manufacturers' Union has decided that the A.C.U. definition of a cyclecar must be followed, viz., chassis weight with tyres 6 cwt., cylinder capacity not exceeding 1,100 c.c. The definition of a chassis according to *The Autocar*, which is an authority on such matters, is: Chassis includes tyres, all tanks (empty), bonnet, mudguard irons, running board irons and dash.

### The Worst Roads in England.

*The Sanitary Record*, in a paragraph headed "The Worst Roads in England," says much that is to the point about the Devonshire highways. *The Birmingham Daily Mail* has quoted the paragraph under the same heading, but says nothing about the Warwickshire roads. If the Devonshire roads are worse than the Warwickshire ones, they are indeed bad. After the splendid surfaced highways of Herefordshire and some parts of Worcestershire, it is purgatory to bump over the Warwickshire apologies for top dressing.

### Italian Road Race.

The Targa Florio car course in Italy was used for an important motor cycle race recently. England, France, and Italy were represented, the winner being an Italian named Revelli, who rode a 3½ h.p. Triumph. The distance was 240 kilometres.

### Interest in the Cyclecar.

Humber agents assembled in force at the Coventry works of the company last week, and of all the new models open to their inspection, none attracted more genuine interest than the new cyclecar, to be known, by the way, as the Humberette. It is common knowledge that the Humber Co. have been experimenting with a twin-cylinder air-cooled three-speed shaft-driven cyclecar for eighteen months, in fact ever since the original two-speed model was dealt with in *The Motor Cycle* in the spring of 1911. They are now able to offer a vehicle of proved reliability which has undergone a 6,000 miles test on the road. Last Thursday, the engine of the cyclecar was

FUTURE EVENTS	
Oct. 5.	Manchester M.C. Open Hill-climb.
" 5.	Herts County A.C. Open 100 miles Reliability Trial.
" 5.	Exeter and District M.C.C. Open Hill-climb.
" 12.	B.M.C.R.C. Race Meeting.
" 12.	Liverpool A.C.C. Open Hill-climb.
" 26.	A.C.U. Autumn Open One day Trial.
Nov. 2.	N. Middlesex M.C.C. Open Winter Reliability Trial.

started at 11 a.m., and so great was the demand for trial runs on the car that it was kept going until after dark. Everyone is enthusiastic in praise of the Humberette.

### Ladies and the Pastime.

Ladies tour on motor cycles now as easily as men. Mrs. S. Robinson, of Northampton, has just completed a long tour to Scotland and back on a lightweight machine fitted with a 2½ h.p. J.A.P. engine and three-speed gear. Mrs. Robinson, who has taken to motor cycling with great enthusiasm, considers the pastime a most fascinating one, and hopes that other ladies in Northampton will follow her example.

### A New Use for Sidecar Bodies.

In the current issue of *The Autocar* appears a novel suggestion entitled "A New Use for the Sidecar." The recommendation is that, in the case of a two-seated car with narrow wind cutting tandem body, if the owner wishes at any time to take extra passengers, instead of seating them on the stepboard as is so often done, a detachable sidecar body could be fitted on the running boards in such a way that an extra passenger could be carried on each side in a wicker or cane sidecar bodies, pannier fashion. Of course the body or bodies would be made easily detachable, and so fitted that they did not overhang the overall width of the wings.

### Open Championship at Brooklands Meeting.

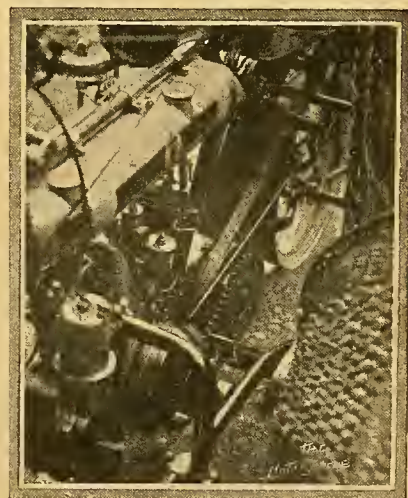
In addition to the Auto Cycle Union Championship Races to be held at the B.M.C.R.C. open meeting on the 12th, and announced in our last issue, the following events will be run off in the morning: The Fourth 1912 Time Trials, One Hour Cyclecar Race, and One Hour Sidecar Race. Entries close on Saturday next, the 5th inst., and should be sent to Mr. T. W. Loughborough, hon. sec., Dell View, Shooters Hill, Kent.

### A Dangerous Practice.

The old trick of placing a string across the road on a level with the head of the rider of a motor cycle or pedal cycle has cropped up again in Bishop Auckland. It would be well if the police were to take very drastic action in cases of this kind, as serious injury can be caused to a rider's eyes, not to speak of knocking him off his machine, blinding him, or cutting his throat with the taut string. In the particular instance under discussion, the string was supposed to have been placed in position by some boys about twelve years of age. The birch is the only cure for this kind of thing.

### Gaillon Hill-climb.

This French event is a combined sporting and social function, and practically amounts to the hill-climbing championship of France. It will take place on Sunday, the 6th inst., and entries should be sent to *L'Auto*, 10, Rue du Faubourg, Montmartre, Paris. For motor cycles, etc., the cost of entry is 10 frs., entries closing to-day (Thursday). Gaillon is most accessible from Dieppe, the distance being only about sixty-one miles, so that one can cross by the morning boat and reach Gaillon, or the immediate vicinity, the same evening with only about half an hour's night riding. Not only motor cycles, but big cars will take part, and there is always a possibility that the record for cars of 158 kilometres (ninety-six miles) an hour might be beaten. The route is a most enjoyable one, and we advise the journey to be made by road. Week-end tickets from Newhaven to Dieppe cost 18s.



The change speed gear fitted to Harry Reed's Dot-Jap in the Liverpool A.C.C. Trial last Saturday.



## The Liverpool A.C.C. One Day Trial.

THE Liverpool A.C.C. laid itself out to give its competitors a sporting course, and if a series of gruesome corners, steep hills, and vile surfaces are considered to attain this end, it succeeded admirably. Seven lady riders appeared at the start, but we have never seen less of a lady's trial. On the other hand, the trial was a fine test for machines, and anything that could make a non-stop over the course chosen may be considered capable of going anywhere. We heard several complaints of the course being very badly marked, but though we had a little difficulty in places, the officials had obviously worked hard, for, to begin with, there was a confetti trail, and then came arrows and pain marks, but there were so many corners on the course that it was almost impossible to mark them all. The local police did good work in directing competitors and deserve great praise.

The start took place from Hamilton Square, Birkenhead, and, in consequence, the Birkenhead hotels were full. We were lucky in meeting S. Crawley on our arrival in Liverpool the night before, who warned us of the state of affairs and advised staying in Liverpool.

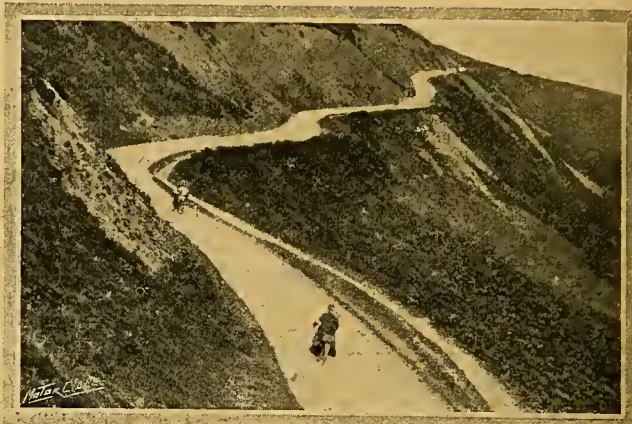
Among the interesting machines, we noticed H. Reed's Dot which was fitted with a new three-speed counter-shaft gear and chain-cum-belt drive; the gear will be fitted in 1913 with either a similar drive or chain drive throughout. Haswell's three-speed Triumph was fitted with a long change speed lever working in a quadrant fixed to the tank, and a 3½ Bradbury and sc. had a N.S.U. two-speed on the engine-shaft and a Sturmey-Archer three-speed hub, giving in all five changes of gear; this machine also had a useful belt guard fitted. The 6 h.p. Clyde-Jap looked a useful machine, and we were glad to see it entered in a big trial.

At 8.30 the first competitors were got away, and one of them ran over a dog almost immediately, fortunately without serious results.

A few miles from the start S. Child (2½ h.p. New Hudson) shed his front brake shoes with a rattle, but no further damage was done, and he was able to continue.

Special arrangements had been made for competitors at Queensferry Bridge, but as we were without an official number we had to pay a 6d. toll.

The run to Llangollen was comparatively uninteresting in view of what was to come, and little of moment occurred. Some competitors went astray at Hawarden, and Miss Baxter, who was pluckily riding a 2½ h.p. Douglas which had only been delivered to her the night before, had trouble with the low gear refusing to engage. About three miles from Llangollen came the first warning of trouble in the form of a long steep ascent which joins the Corwen Road at the top. This hill proved a stumbling block to many; in fact, none of the early arrivals made clean ascents. Probably many failed on account of the strong cross wind affecting their carburettors; certainly Fenn (2½ h.p. Humber), who failed at the first attempt, came up well afterwards, protecting the



Bird's eye view of the old road from Llangollen to Ruthin, known as the Horseshoe Falls road. The rider in the foreground is Mrs. Hardee (P. & M.), who made a clean ascent.

air-intake with his hand. No speed could be attained on account of the awful cross gullies. After this hill we were taken over a narrow road towards Bryn Eglwyls. This road led through slate quarries and bristled with hairpin bends, the surface being narrow and bad. As we descended one little piece of about 1 in 6 over lumps of slate and boulders with a narrow gate to follow we wondered what would become of the side-car outfits, and subsequently heard that one at least had overturned. However, on reaching the main road again we had a good run into Bala. (Lunch stop.)

After lunch the mountain road to Festiniog was traversed. The scenery was grand, and the surface for a mountain road good. In Festiniog we took a sharp right-handed hairpin corner to Blaenau Festiniog, and thence up the long hill out of the town; the surface of this was good, and it did not trouble the majority of the competitors. Then followed more fine scenery to Llanrwst, and afterwards a long steady pull up on the Abergele Road. After this we were taken down lanes to Llausanman, and until we reached the main Denbigh Road competitors were too much occupied in trying to retain their seats to worry about scenery.

This section of road was all up and down heavy gradients, the lanes being very narrow, and the surface simply appalling. We cannot think that any tourist would choose this sort of road for pleasure, and it was with a sigh of relief that we regained the main road, and so into Denbigh. Here a twenty minutes' stop was allowed for tea and refreshments. After a short stop and a chat with a few competitors we continued on

Six out of the seven lady riders in the Liverpool A.C.C. trial. From left to right they are Mrs. Hardee (3½ P. & M.), Miss Pickles (3½ Rudge), Miss May Walker (2½ Hobart), Mrs. Baxter (3½ Rex), Miss Muriel Hind (6 Rex), and Miss Baxter (2½ Douglas).





**The Liverpool A.C.C. One Day Trial.**

the third and last section, on parts of which it was quite hard to find the way. We reached Mostyn by devious routes, and caught a fleeting glimpse of the sea. Here we descended a bad hill on to the coast road along which the route led until it turned up the hill to Holywell. Then came Penyball Hill, the *pièce de résistance* of the trial. There is a long steady pull up hill, then two right-angled turns in the narrow village streets, and then the real hill. Failures were extremely numerous.

At the top of this hill the road disappears for a short distance, and one takes the choice of a rocky path or grass (personally we preferred the grass). The route then led back to Holywell, and thence to the finish at Queensferry. Results will be found on a previous page.

We cannot refrain from mentioning a little incident which occurred early in the trial. A certain lady competitor who had trouble with her machine prevailed on a kind-hearted marshal to let her have his machine, on which to ride to the nearest railway station, while he mounted her damaged machine and was towed over ten miles of dangerous mountain roads. To prove her gratitude for this kindness, instead of stopping at the station the lady rode on a further twenty miles to the lunch-stop at Bala, and left her unfortunate benefactor to cool his heels for nearly four hours at a dismal railway station.

Our thanks are due to Mr. Carson, of the Excelsior Motor Cycle Co., who kindly suggested that we should ride a  $4\frac{1}{2}$  h.p. Excelsior fitted with the G. and H. gear and Binks carburetter. The machine ran splendidly throughout the day, and climbed all the hills with the greatest ease. We stopped on two or three of the worst for observation purposes, and each time restarted comfortably. The gear ran

silently and sweetly, and the slipping clutch renders it as flexible as any belt. The carburetter also was a great convenience, and gave plenty of power, a quick pick up, and beautifully slow running in traffic.



Restarting after lunch at Bala. N. Brown (Indian) leading off.

## CLUB NEWS.

**North Middlesex M.C.C.**

The remaining competitions arranged for this year have been cancelled.

**Manchester M.C.**

An open motor cycle hill-climbing competition will be held on the 5th inst. at 1 p.m. The hill is practically straight and safe. There will be five classes.

**Cowbridge and District M.C.**

A non-stop reliability run and speed judgment competition was recently held in connection with the above club. The course was over a distance of fifty-five miles, which included two stiff hills. Five competitors made non-stop runs and the awards were as follows: 1. F. E. P. Dunn ( $3\frac{1}{2}$  h.p. two-speed Humber); 2. B. S. Bird ( $3\frac{1}{2}$  h.p. Triumph). A hill-climb, followed by a supper (when the prizes won during the season will be distributed), will be held on the 9th inst.



The old road from Llangollen to Ruthin, A. S. Pierson (6 h.p. Rex-Jap sidecar) half way up the hill.

**Sheffield and Hallamshire M.C.C.**

On Saturday afternoon, the members held a hill-climb up an old grass grown lane near Owlbar, Derbyshire. After a tie, Flint ( $3\frac{1}{2}$  Norton) won.

**Feilding (New Zealand) M.C.C.**

A flexibility hill-climb was held on Brickfield Hill recently. Fast.—1, E. Hinds (7 Indian); 2, E. Ford ( $3\frac{1}{2}$  Triumph). Slow.—1, E. S. Pecs (2 $\frac{3}{4}$  Douglas); 2, P. S. Pecs (2 $\frac{3}{4}$  Douglas). E. S. Pecs was the winner.

**Motor Cycling Club.**

The paperchase announced for the 28th ult. will be held on Saturday next, the 5th inst.

The annual dinner and presentation of prizes will be held at the Adelaide Gallery on December 7th. Particulars will be sent out in due course.

**Welsh A. and Ae.C.**

A hill-climb was held on the 21st ult. at Llethryd Hill. Results on A.C.U. formula:

Sidecar Class.—1, A. Jackson, .287; 2, F. C. Harrison, .255; 3, D. G. Hughes, .241.

Motor Cycles (Solo).—1, Edgar Thomas .294; 2, Edgar Morgan, .254; 3, W. Trow, .240.

**Manchester M.C.**

The second gymkhana and sports for this season took place on the 28th ult., at Hoo Green, Cheshire. The weather was fine, but the cold wind was responsible for keeping many away. In the tag of war, car owners v. motor cyclists, the car owners, being much the heavier, won easily. The meeting was most successful.

**Harrogate and District M.C.C.**

On Saturday last an impromptu hill-climb was held on a fairly stiff hill of about half a mile in length. Each competitor had to ride the hill once, and afterwards to again ride up the hill as near as possible to his original time. There was some remarkably fine running, the first four competitors being within one second of their previous times. Result:

1. W. E. Grange ( $3\frac{1}{2}$  Bradbury) ... 0 $\frac{1}{2}$ s. difference.
2. W. B. Dickinson (2 $\frac{3}{4}$  Douglas) ... 0 $\frac{1}{2}$ s. difference.
3. C. A. Nettleton ( $3\frac{1}{2}$  New Hudson) 0 $\frac{3}{4}$ s. difference.
4. H. W. Fortune ( $3\frac{1}{2}$  Brown) ... 0 $\frac{3}{4}$ s. difference.



## Club News.—

## Walthamstow M.C.

The above club held a handicap speed trial over a private course, distance fourteen miles, on the 29th ult. Results: 1, A. E. Uffelman (6 Rex-Jap); 2, A. R. Abbott (3½ Bradbury); 3, F. A. Applebee (7 Indian). F. A. Applebee made the fastest time of the day.

## Aberavon, Port Talbot, and District M.C.C.

A speed trial was held on the sands at Aberavon on the 19th ult., with the following results:

	Rider and machine.		Weight. Cts. Lbs.	c.c.	Time.	Fig. of M. S. merit.
1.	G. Jones (James)	...	3 1	558	1 4½	689
2.	J. Locke (Zenith)	...	3 42½	750	1 0½	732
3.	R. M. Lewis (T.T. Premier)	...	3 7½	499	1 13½	787

## Southampton and District M.C.C.

The annual hill climb for members took place at Gravel Hill, Shedfield. The hill was in good condition, and not too steep, so that everyone had a sporting chance. The results, with figures of merit, were as follows:

Solo class.—1, J. Tuffin (3½ h.p. New Hudson), 21.2; 2, W. Winckworth (3½ h.p. Sun-Precision), 19.3; 3, H. Scott (3½ h.p. Ariel), 18.0.

Sidecar class.—1, W. Winckworth (3½ h.p. Sun-Precision), 24.8; 2, J. Tuffin (3½ h.p. New Hudson), 21.6; 3, J. Silvey (6 h.p. N.S.U.), 16.1.

## Birmingham M.C.C.

The fourth annual flexibility hill climb was held on Saturday last. There were some forty entries, and the climb was run off very promptly. Each competitor had to make two ascents of the hill in each class, one slow and the other fast, the greatest difference between the times was taken as being the "flexibility" of the machine. The results are as follows:

## CLASS I. (for variable geared machines).

		Time difference.
K. Holden (3½ B.S.A.)	...	8m. 24s.
V. Busby (3½ Humber)	...	8m. 14s.
N. C. Pickering (2½ A.J.S.)	...	5m. 40s.

Holden also made fastest time of the day.

## CLASS II. (for fixed gear machines, or variable geared machines with gears fixed).

N. Ball (3½ Triumph)	...	3m. 40s.
J. J. Woodgate (4 Singer)	...	2m. 43s.
H. J. Cox (2½ Forward)	...	2m. 20s.

## CLASS III. (for variable geared passenger machines).

K. Holden (3½ B.S.A. sc.)	...	6m. 26s.
J. J. Woodgate (4 Singer sc.)	...	4m. 35s.
Dr. B. Fawcett (8 Chater-Lea-Jap and Lowen sc.)	...	3m. 52s.

The hill was about one-third of a mile long, and had a gradient of about 1 in 8 at the steepest part.

## Essex M.C.

The annual dinner and distribution of prizes will take place on December 14th at the Great Eastern Hotel, E.C.

## Dundee and District M.C.C.

Open speed trials will be held on the sands on Monday, the 7th inst. These are the first open events of this nature held on sands in Scotland.

## Bristol B. and M.C.

The above club recently held a sporting trial through the hilly and picturesque country near Stroud, the course being from Bristol to Wotton-under-Edge, Dursley, up Uley Hill, Stroud, Nailsworth, and Chipping Sodbury. There were fourteen starters, eleven making non-stop runs. So close did the majority run to time that a special secret check was utilised to find a winner, the result being: 1, A. S. Richards (2½ A.J.S.), 2, F. C. Wasley (2½ Douglas), 3, R. H. Bishop (5 A.J.S. s.c.). The principal prizes were tyres, presented by Messrs. Wood-Milne Tyre Co., and Messrs. the Kempsall Tyre Co. After the run some thirty members and friends sat down to tea at the Grapes Hotel, Chipping Sodbury.

## M.C.U.I. (Ulster Centre).

The above centre held a series of hill-climbs on Saturday last on a hill situate midway between Dromore and Ballynahinch, County Down. The climb was exactly half a mile, and the gradient averaged about 1 in 7. There was an open and a lightweight class, and the entries totalled twenty-two. The competition was decided in heats on the "knock-out" principle, and J. Stewart (2½ h.p. Douglas) won both events. J. Hobson (3½ h.p. Singer) won the novice prize. Results:

Open Class (Final).—J. Stewart (2½ h.p. Douglas), handicap 10s., beat J. Martin (3½ h.p. Triumph), 5s.

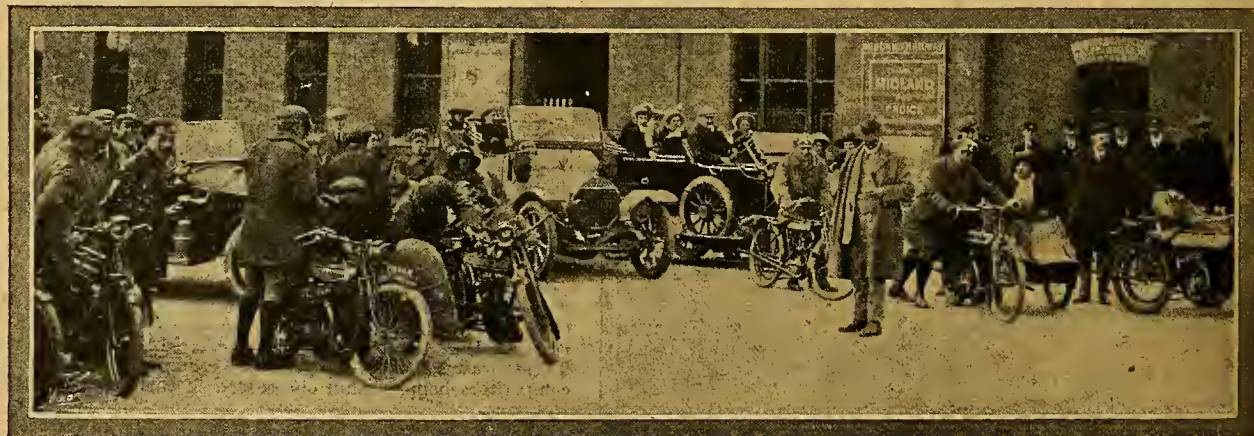
Lightweight Class (Final).—J. Stewart (2½ h.p. Douglas), scratch, beat S. Stewart (2½ h.p. Singer), 3s.

## Mersey M.C.

An open hill-climb will take place on the 12th inst. at Pen-y-ball (Holywell). Class I., singles and twins up to 300 c.c.; Class II., singles and twins between 300 and 600 c.c.; Class III., singles and twins between 600 and 1,000 c.c.; Class IV., sidecars and cyclecars. Awards: Gold, silver, and bronze medals in each class for best performances on formula and fastest times. Formula as recommended by *The Motor Cycle*  $\frac{C \times T^2}{W}$ . A Palmer tyre (presented by Palmer Tyre, Ltd.) will be awarded to the best performance on time and to the best performance made by a novice.

N.B.—The definition of a novice is a competitor who has never won any prize in any open hill-climb.

Entries close on Tuesday, the 8th inst., at noon, at ordinary fees, and up to October 12th, at noon, at double fees. Entry forms can be obtained from Mr. S. W. Carty, hon. sec. Mersey Motor Club, 5, Red Cross Street, Liverpool.



Mr. Alec Ross (A.C.U.) despatching competitors at the start of the Sutton Coldfield A.C. petrol consumption trial.



# Bowden Two Speed Gear

## A simple countershaft Gear to fit **YOUR** Machine.

The Bowden Two-Speed Gear is simply and substantially constructed, and in it is incorporated every form of advantage associated with the countershaft type of gear. Transmission is by chain from engine shaft to gear box, and thence by belt from an 8in. pulley. Belt slip from this large pulley is negligible.

### One of many unsolicited testimonials.

Bristol, 27th August, 1912.

Dear Sirs,—I have had your gear fitted to a Triumph with Millford sidecar and have been running it all the summer. The result has been most satisfactory, and I've given it some jolly hard work to do, including a run over Dartmoor the other day through Two Bridges and on to Tavistock and Plymouth.—T.R.P.

Price (Standard Gear, Engine Sprocket unborred) £10 : 10 : 0.

May we send you a descriptive leaflet?

**BOWDEN WIRE LTD. (Dept. 9), PRATT STREET, CAMDEN TOWN, LONDON.**

**World's ..  
Sidecar ..  
Record ..  
Broken ..  
by 104 m.**

— on —

**"1,656 miles in the Six Days . . . the engine never once showed any signs of getting hot."**

(Extract of letter given below, original at our Office.)

### EVERY MOTOR CYCLIST SHOULD READ THIS LETTER.

23, Queen Street, Horncastle.

Messrs. The British Monogram Oil Co., Ltd., Acton Vale, W.

Dear Sirs,—I used your Oil last week when I broke the World's Sidecar Record by 104 miles. I covered 1,656 miles in the six days. As you know, this is a very severe test, as machine and passengers weighed 6 cwt., but your Oil was splendid, and during the whole six days the engine never once showed any signs of getting hot, which is wonderful on a severe journey like this. There is not a doubt your Oil is perfect, and I wish you every success.—Yours truly,

(Signed) WM. J. CLARKE.

**THE BRITISH MONOGRAM OIL CO., Ltd., The Vale, Acton, London, W.**

Telephone—No. 1012 Chiswick.

Telegrams—"Oilogramic, London."

# MONOGRAM



**FIRST and BEST.**

# ARMSTRONG

## 3-SPEED MOTOGEAR.

The ARMSTRONG is the PIONEER MOTOGEAR and not an EXPERIMENT—it has been used by riders for the last THREE YEARS and not found wanting.

---

---

**IMPROVED PATTERNS 1913.**

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**MARK V.** Normal Middle Drive.  
Ratios:  $4\frac{3}{4}$ ,  $6\frac{1}{2}$ , 9.

**MARK VI.** Solid Top Drive.  
Ratios:  $4\frac{3}{4}$ ,  $7\frac{1}{8}$ ,  $11\frac{1}{4}$ .

**SPECIAL POINTS.**

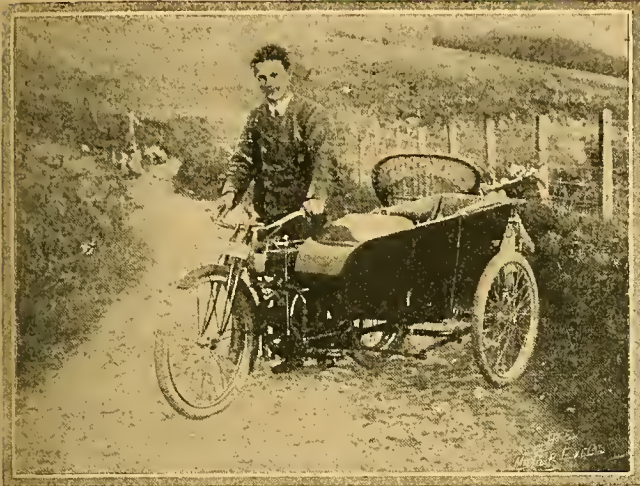
FOR MOTORS UP TO 6 H.P.  
ENGINE STARTS WITH BACK  
WHEEL ON GROUND.

---

**ARMSTRONG WORKS, BIRMINGHAM.**



## Club News.—



## SCENES AT THE AMULREE HILL-CLIMB.

A. H. Alexander (2½ h.p. two-speed Douglas) on which he competed in the sidecar and lightweight classes.

## Bedford and District M.C.C.

The above club will hold a reliability trial on the 5th prox., starting at midnight from Bedford to York and back.

## Kingston and District M.C.C.

This club held recently a reliability trial and speed-judging test from Kingston to Oxford *via* Dashwood. Eleven members competed for the G. G. T. Butler challenge cup. The winner was T. A. Edwards (¾ Premier); 2, D. W. Morgan (¾ Triumph).

## Redditch and Stratford-on-Avon M.C.C.'s

The result of the inter-club reliability trial between the Redditch and Stratford-on-Avon M.C.C.'s was a win for Stratford by 288 points. Seven rode on each side, the top score being made by C. W. Barnard (¾ T.T. Triumph), who gained full marks.

## Cheltenham M.C.C.

The results of a recent reliability trial were: 1, H. Lewis (¾ h.p. Triumph); 2, G. Nash (¾ h.p. Triumph); 3, W. B. Gibb (2¾ h.p. Douglas). The competitors were started from the Belle Vue Hotel, and the route lay through Prestbury to Cleeve Hill, then through Sevenhampton, Synford, and Stow-in-the-Wold back to Cheltenham.

## Manchester Amateur M.C.C.

A flexibility hill-climb was held at Axe Edge on September 22nd, the course being about a mile and an eighth long, with a splendid surface. Before the actual start was made, H. Marsden (7-9 h.p. T.T. Matchless) and J. McCann (7-9 h.p. T.T. Indian) ran off a tie on the "knock-out" principle. The course being clear, the riders streaked up the hill neck and neck, H. Marsden eventually running home by a couple of wheels. Unfortunately, however, their times were not taken.

The results of the flexibility hill-climb, based upon the difference between fast and slow ascents, are as follow:

## CLASS 1.—Singles up to 550 c.c.

- |                                      |          |
|--------------------------------------|----------|
| 1. R. Birkett (T.T. Triumph) ...     | X        |
| 2. H. D. Ashworth (T.T. Triumph) ... | 0m. 50s. |
| 3. R. N. Earwacker (2½ Levis) ...    | 1m. 16s. |

## CLASS 2.—Twins up to 1,000 c.c.

- |  |          |
|--|----------|
| 1. P. W. Englebach (7-9 Indian) ...    | X        |
| 2. J. McCann (7-9 T.T. Indian) ...     | 0m. 32s. |
| 3. H. Marsden (7-9 T.T. Matchless) ... | 1m. 24s. |

## CLASS 3.—Sidecars.

- |                                |
|--------------------------------|
| 1. S. H. Y. Birley (8 Zenith)  |
| 2. C. R. J. Roberts (6 J.A.P.) |
| 3. T. Y. Arnfield (6 Enfield)  |

Fastest time of the day was made by J. McCann (Indian).

## Bradford M.C.C.

There were twenty-nine entries and some fine racing was witnessed at Bucliffe Woods Hill on the 21st ult. Results: 1, C. Sydney (¾ T.T. Bradbury), Dyson shield and gold medal; 2, Haswell (¾ Bradbury), silver medal; 3, Fenton (7 Indian), bronze medal. Passenger machines: 1, W. Gilyard (8 Gilyard cyclecar), P. and M. cup and gold medal; 2, C. Finn (6 Enfield sc.), silver medal; 3, G. Gilyard (8 Chater-Lea sc.), bronze medal.

## Liverpool A.C.C.

The reliability trial for the Hobbs cup, postponed a few weeks ago, was run on the 22nd ult. The course was a circular one of about seventeen miles through the narrow winding roads of the Wirral district. The start was from the Clegg Arms, Gayton, which had to be passed four times. A dozen competitors took part, the first to come round dead on time was N. Brown (7-9 Indian), followed by Mrs. Baxter (Rex). Several lost the way. The final calculation showed that Mrs. Baxter (Rex) was nearest to schedule time, being eighteen minutes out in the seventy-five miles run, and she was judged the winner.

## Clapton and District M.C.C.

The above club held its second reliability trial to Cambridge and back on the 22nd ult. Fifteen minutes stop were allowed at Cambridge, but with that exception no other stop was allowed, and the competitor who succeeded in riding the whole distance (104 miles) under these conditions nearest to a consistent speed of 20 m.p.h. between all checks was declared the winner. Speedometers and watches were barred. Results:

Rider and machine.	Total error.
1. A. Hewitt (¾ Premier sc.) ...	12m. 20s.
2. P. Bowman (4 J.A.P.) ...	14m. 53s.
3. R. Wright (¾ Centaur sc.) ...	21m. 15s.

## Leven and District M.C.C.

The above club held an invitation hill-climb on Lang Young's Hill on the 21st ult. Results:

CLASS I. (sidecars on formula).—1, A. H. Alexander (¾ Zenith)\*; 2, J. Christie (¾ Kerry); 3, J. Williamson (6 Rex-Jap).

CLASS II. (singles on formula).—1, A. H. Alexander (¾ Zenith); 2, H. Braid (¾ Norton); 3, R. J. Braid (¾ Trump-Jap).

CLASS III. (twins on formula).—1, A. H. Alexander (2¾ Douglas); 2, A. J. Carlow (6 Rex-Jap); 3, A. G. Braid (¾ T.T. Indian); 4, J. R. Alexander (7 Indian)\*

CLASS IV. (under 600 c.c.).—1, A. H. Alexander (¾ Zenith)\*; 2, A. G. Braid (¾ T.T. Indian); 3, R. J. Braid (¾ Trump-Jap).

CLASS V. (unlimited, over 600 c.c.).—1, J. R. Alexander (7 Indian)†; 2, A. J. Carlow (6 Rex-Jap); 3, J. Wares (6 Rex).

\*Denotes fastest time. †Denotes fastest time of day.



The machine on the scales is a 2½ H.P. two-speed Douglas on which A. H. Alexander was conspicuously successful at Amulree and at the Leven Club's hill climb, the results of which are given above.



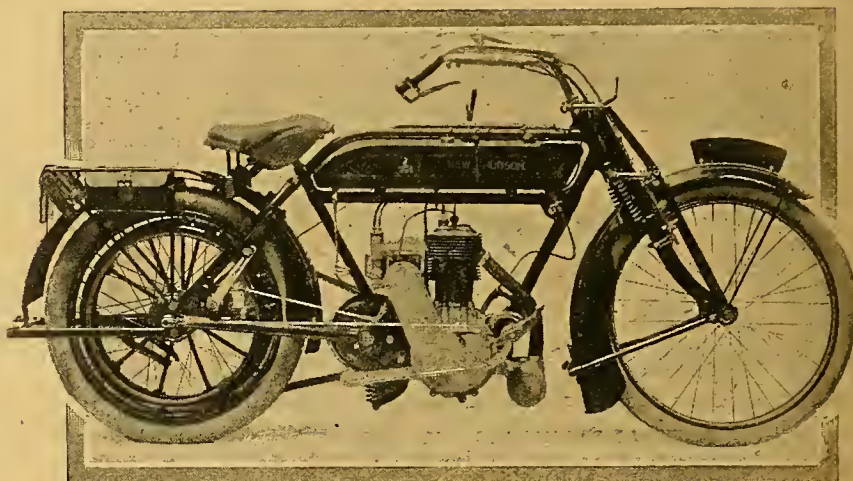
## 1913 NEW HUDSON MODELS.

Features: Combined belt and chain drive, hand starter, and decompressor.

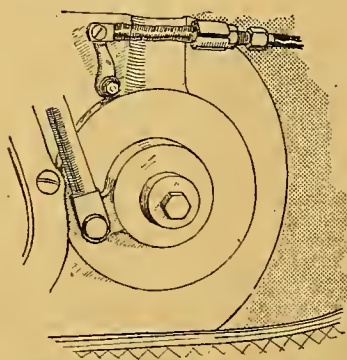
THE New Hudson Cycle Co., Ltd., Birmingham, are introducing for next year a range of chain-cum-belt models, which will replace the direct belt drive used hitherto. A description of the  $3\frac{1}{2}$  h.p. model (which we illustrate herewith) will give our readers a general idea of what the firm will produce in 1913, for the new  $2\frac{3}{4}$  h.p. model has an engine of 350 c.c., but is otherwise on similar lines to those of the  $3\frac{1}{2}$  h.p. The engine of the  $3\frac{1}{2}$  h.p. remains the same as last year, with the exception of a decompressor working on the exhaust valve gear, and operated by a neat handle-bar control lever. By this means the lift of the decompressor cam and the escape of gas can be varied.

The chain wheel side of the crank case is now fitted with a long plain bearing, in addition to the usual ball race, so as to minimise the overhang of the crankshaft. The drive is taken from the engine by chain to a sprocket mounted between two phosphor-bronze plates kept in contact by powerful springs.

This device is, of course, for the purpose of absorbing any harshness in the chain drive, and is mounted with the large diameter belt pulley on a double row of Skefko ball bearings, the whole having an eccentric chain adjustment in the bottom bracket. The engine chain is entirely enclosed in a neat oil-tight aluminium case, which may be detached by the removal of a few screws. It is strong, and does not rattle, and allows for ample chain clearance. To accommodate this new form of drive, the frame has been slightly altered in the region of the bottom bracket. A link belt conveys the drive to the belt rim of the Armstrong Mark V. gear. While we were in the works we caught a glimpse of a similar machine fitted with the New Mark VI. gear, which is mentioned elsewhere in this issue.



1913 model  $3\frac{1}{2}$  h.p. three-speed New Hudson with combined belt and chain transmission.



The New Hudson decompressor, showing method of operation.

At the present time a handle starter is geared by chain to the rear wheel sprocket, but it is possible that this will be replaced by a kick starter.

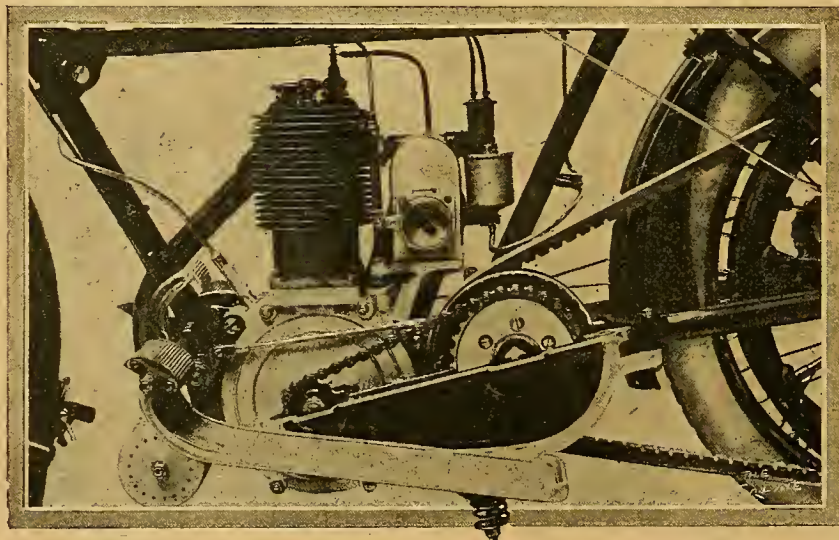
Very neat aluminium footboards are fitted, which pivot at the front on the front footrest bars, and are sprung at the rear. The rubber pads are still retained on the front rests, and give a complete change of position.

As regards equipment, a  $2\frac{1}{2}$  in. tyre has been wisely adopted for the rear and a  $2\frac{1}{4}$  in. in front. The saddle is a Lycett, enabling a very low riding position in conjunction with the dropped frame. The popular Druid forks are used, also stands front and rear, and pannier bags. A much stronger gear-changing rod is used, and the lever is placed about the middle of the tank.

As for the finish and detail work, they are the usual New Hudson standards, which have already made such a good impression on the public.

### AN AMERICAN CYCLECAR.

A few weeks ago we stated that there was a rumour abroad that an American firm was about to place a cyclecar on the British market to sell at about £65. We further stated a few weeks later that the rumour refused to be laid, despite the Ford Co.'s reply to our query that they had no intention whatever of making a cyclecar. We now understand that the Ford Co. is not the firm, but another important American concern is contemplating the manufacture of a cyclecar with either single-cylinder or twin-engine, chain drive to the counter-shaft and thence to the back wheel. The sample vehicle has only one of two rear wheels driven, and the gear box is of the dog clutch two-speed type. It is undecided at present whether the manufacture of this vehicle will be undertaken in England or the States, but the price is to be about £50, and sociable seats are decided on.



The New Hudson power unit, showing spring footboards, detachable chain case, and method of transmission.

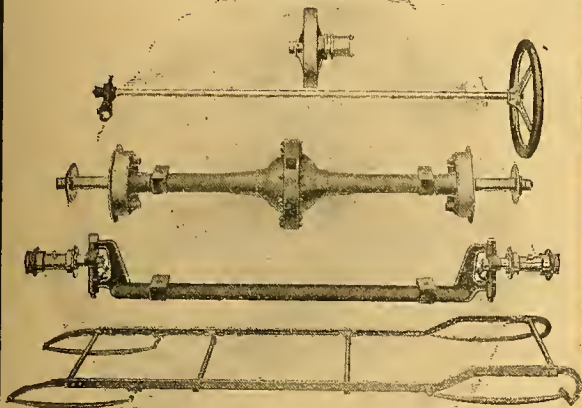


## CYCLE CAR PARTS

### SLIP TOGETHER LIKE MAGIC.

You can turn out quantities by dealing with us.

Shaft and chain drive components, or complete chassis now ready.



Belt and friction drive parts under way.

We can make you any part from clutch pedal to complete car or chassis.

Four-cylinder, Two-cylinder, V type, or Vertical (air or water cooled).

Everything neat and good, and at reasonable prices.

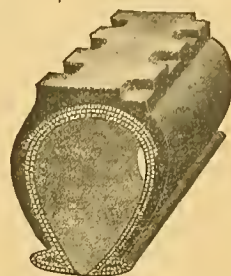
**THE NEW MERLIN CYCLE CAR CO., LTD.,**  
GOUGH ROAD, BIRMINGHAM.

## 'SKEWS'

were fitted on the  
G.W.K. Car, which  
gained a

### GOLD MEDAL in the

A.C.U. SIX DAYS' RELIABILITY TRIALS,  
and in the SCOTTISH " " "



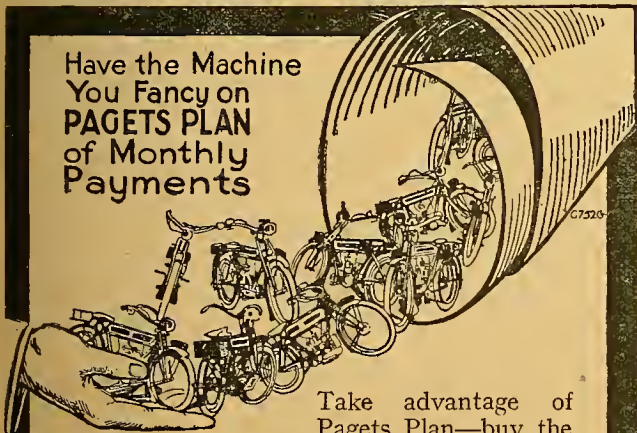
#### PRICE LIST

and SECTION sent on  
application to the  
MANUFACTURERS:

**OYLER'S, Ltd.,**  
35, New Cavendish St.,  
LONDON, W.



Have the Machine  
You Fancy on  
**PAGETS PLAN**  
of Monthly  
Payments



Take advantage of  
Pagets Plan—buy the  
make of new machine

you prefer—and use it whilst paying for  
same in small monthly instalments

Could you imagine a more commonsense,  
satisfactory way of buying a motor cycle?  
Then purchase your new machine on Pagets  
Plan, and secure

**EARLY DELIVERY OF BEST-KNOWN MAKES.**

Let us post you full details.

**PAGETS LIMITED, 10 & 11, Jermyn St., London, S.W.**

# PAGETS PLAN

## MOTO-REVE

2 - 2½ - 3 and 4 h.p.

Dear Sirs,

You will no doubt be interested  
to hear what your machine will do.  
Riding one of your 2 h.p. 27 guinea  
models, I came from Offord, Hunts.,  
to Scarborough, 186 miles, at an average  
of 18 miles per hour, including stops  
for petrol. Considering that I weigh  
11 stone, this, I consider, is a  
remarkable performance for such a  
small machine, and one which only  
weighs 80 lbs. Congratulating you  
on this remarkable little engine,

Yours truly,

L. M. J.

NOTE NEW ADDRESS:

**MOTO-REVE Co., Ltd., Alperton, Middlesex.**

In answering these advertisements it is desirable to mention "The Motor Cycle."



# Reduced Prices

at end of Season.

**MATCHLESS.  
HAZLEWOOD.  
A.S.L.  
CALTHORPE.**

ACCESSORIES.

REPAIRS.



Established

1907.

**184, Great Portland Street, W.**

Tele { phone: 4839 Mayfair.  
grams: "Motenance, London."

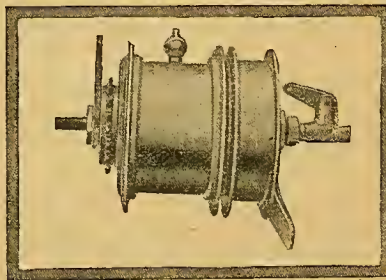
## THE THORNTON 2-SPEED AND FREE ENGINE HUB.

Combining—  
STRENGTH,  
SIMPLICITY,  
AND  
EFFICIENCY

Price £3

Particulars from

**THE LEICESTER GEAR CO., THORNTON LANE, LEICESTER.**



### The Guest Decompressor. PATENT.

THE little article illustrated herewith makes motor cycle starting simplicity itself, and not an athletic feat as heretofore.

EASY TO START THE ENGINE, AND  
GOES DEAD SLOW IF REQUIRED.  
SIMPLE TO FIT.  
SUITS ALL STANDARD MACHINES.  
FITS INTO EXHAUST CAP.  
NOTHING TO GET OUT OF ORDER.

Price **12/6** each.

Postage 4d.

GUEST DECOMPRESSOR CO.,  
107, HIGH ST., WEST BROMWICH.

## Bristol . . . . . Engineering . . . . . Exhibition. . . . .

February, 1913.

The promoter of this Exhibition having been appointed organiser of the Bristol International Exhibition for 1914, and expects to leave for Canada almost immediately for an extended period, has felt compelled to ABANDON the project for 1913, more particularly in view of the fact that heavy machinery could not be accommodated in the building already arranged; but he would, however, be glad to receive enquiries for the larger proposal of 1914, for which a site of upwards of 50 acres of land, close to the city, has been acquired.

Write **THE MANAGER,**  
Central Chambers, St. Augustine's, Bristol.

## BOOKS

FOR

### Motor Cyclist-Photographers

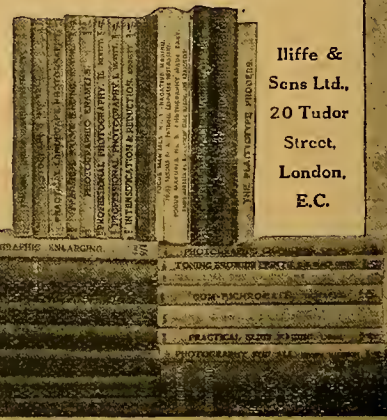
Every Motor Cyclist who uses a Camera will find these books instructive and interesting.

Photography for All. Photography by Rule.  
Practical Slide Making. Practical Frame Making  
Toning Bromide Prints.

Price of any of the above

1/- nett per volume. By post, 1/2.

Send  
Postcard  
for full  
List of  
Photo-  
graphic  
books.



liffe &  
Sons Ltd.,  
20 Tudor  
Street,  
London,  
E.C.

In answering these advertisements it is desirable to mention "The Motor Cycle."

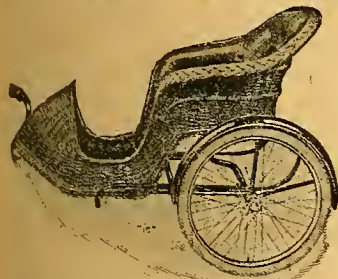


# CORONET SIDE CARS

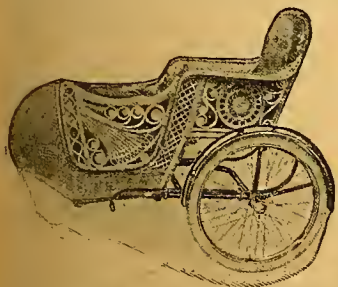
## Don't Carry Overweight.

"Coronets" are strongest and lightest. Why fit a heavy sidecar to a 3½ h.p. machine? You have no surplus power, why take surplus weight? Fit a "Coronet," and you will be right.

CAN BE OBTAINED FROM ALL DEALERS.



Model 1. High-class Canoe-front Body, Cranked Axle, and other improvements, £6 6 0.



Model 4. Ornamental Cane Body, as illustration, or close Reed Cane Body, £8 8s.

## 4½ H.P. PRECISION ENGINES.

We carry a large stock of these well-known engines. We will make a liberal allowance for your under-powered engine in exchange. Therefore why not

## GET RID NOW.

All models of Precisions supplied, with or without magnetos, carburettors. Remember—

## POWER IS GRAND.

## WEATHER-PROOF MAGNETOS.

Get rid of your out-of-date magneto, coil, or accumulator, and let us take them in exchange for the latest water-tight magneto.

**BOOTH'S MOTORIES,**  
KEIGHLEY MILLS, BEDFORD ST. NORTH  
(off Pellon Lane), HALIFAX. Tel. 1062.

## MOTOR BICYCLES FOR SALE.

TRIUMPH, clutch, late 1911, little used, spares; £35, offers.—E.S.G., 7, Chapel St., Preston. [X6359]

1911 Free Triumph, as new, spares; £43-79, Clarendon Rd., Chorlton-on-Medlock, Manchester. [X5695]

1912 B.S.A., 2-speed, lamp, horn, spares, excellent condition.—Mawson, Wharfedale Garage, Skipton. [6023]

EXCELSIOR, 3½ h.p., free engine, and sidecar, new June, 1911; £34-479, Stretford Rd., Manchester. [6145]

DOUGLAS, 1912, K., perfect condition, little used, spare tyre; £40.—Long, 15, Park View, Wigton. [X6322]

MINERVA, 3½ h.p., low torpedo tank, H.T. mag., perfect condition; £14-30, Clive Place, Bradford. [X6439]

SCOTT, 1912, perfect, powerful, plating as new, all accessories, and spares; £55-29, Oak Lane, Bradford. [6170]

1910-2½ h.p. lightweight, low, comfortable, 1912 var. B. and B., h.b.c., perfect.—Moore, Hymers House, Hull. [X6059]

MOTOSACOCHE, mag., new Palmer, excellent condition; £17.—Seen and tried at Hall's Garage, Tadcaster. [X6424]

2½ h.p. F.N., 1910, mag., spring forks, good condition; must sell; cash needed, £10/10-168, The Moor, Sheffield. [6018]

1912 Clyno, £6 spares, £23 sidecar, same tyres, not scratched; £75; trial.—Burrows, Cudworth, Barnsley. [X6306]

1912 (Aug. 24th) 3½ h.p. 2-speed Lincoln Elk; cost £42, offers; must sell.—Burrows, Cudworth, Barnsley. [X6271]

TRIUMPH, free engine, August, 1911, perfect, just overhauled; nearest £39.—Welcome, Great Marton, Blackpool. [5999]

3½ h.p. Triumph, very good condition throughout, all tools and spares; £26.—Urmsan, 393, Ashton Rd., Oldham. [6086]

1912 Bradbury, little used, perfect throughout; sacrifice £36, unusual bargain.—Myekymke, 93, Wallgate, Wigton. [X6416]

1912 Free Engine Ridge, not delivered; £50; getting higher power for sidecar.—Tomlinson, Great Marton, Blackpool. [5998]

TRIUMPH, 1912, standard, equal to new, horn, valve, etc.; genuine bargain, £38.—Topping, 169, Mariebonne, Wigton. [X6276]

T.T. Chain-driven Clutch Rex.—No nervous folks should apply for particulars to T. Bradbury, 55, Frizinghall Rd., Bradford. [X6392]

1912 2½ h.p. Brown-Precision, perfect condition, lamp, horn, Jones speedometer; accept £32.—Allred, 241, Middleton Rd., Oldham. [6014]

HUMBER Lightweight, late 1911, unpunctured, like new, spare tube, whistle, etc.; £23, no offers.—Highton, Lord St., Southport. [X6398]

1912 P. and M., 3½ h.p., 2 speeds, Hutchinson, Kempshall, back rest, key whistle, reflex, spares; £56.—Peters, 4, Wilfred Rd., Bolton. [6244]

TRIUMPH for sale, 3½ h.p., newly painted and overhauled, new tyres, splendid condition; cheap, £18.—Apply, County Hotel, Lancaster. [X6158]

HUMBER, 1911, 2-speed, Whittle, horn, spares, just overhauled, and new gear fitted, splendid condition; £32.—Daley, Electra Palace, Sheffield. [6172]

3½ h.p. N.S.U. Motor Cycle, h.b.c. carburettor, mag., 26 in. x 24 in. wheels; £18, or exchange for higher power.—Carley, 20, Bradley Ave., Castleford. [6129]

DOUGLAS, 1912, model K, latest improvements; immediate delivery, no waiting; £50; cash or deferred terms arranged.—Hitchen's, Ltd., Morecambe. [4708]

1912 P. and M., colonial models; immediate delivery, no waiting; £65; cash or deferred terms arranged.—Hitchen's, Ltd., Morecambe. [4709]

1912 Scotts, latest pattern, brand new, just in from works; immediate delivery, no waiting; with X'Fall saddle; £65/10; cash or deferred terms arranged.—Hitchen's, Ltd., Morecambe. [4710]

1912 Matchless, 6 h.p., 2-speed, just in from works, one of the finest sidecar machines on market; listed £69/6, offers wanted; cash or deferred terms arranged.—Hitchen's, Ltd., Morecambe. [4711]

6 h.p. Zenith, 1912, F.E. device, latest pattern; no waiting, immediate delivery; listed £70/7; cash or deferred terms arranged.—Hitchen's, Ltd., Morecambe. [4712]

1912 7 h.p. 2-speed Indian, latest improvements, just come in; £75; cash or deferred payments arranged; immediate delivery.—Hitchen's, Ltd., Morecambe. [4714]

1912 Bradbury, with N.S.U. 2-speed or Sturmeys Archer 3-speed; write for prices, must be cleared.—Hitchen's, Ltd., Morecambe. [4715]

1912 Clyno, brand new and unpacked; listed at £52; will accept £60 to clear.—Hitchen's, Ltd., Morecambe. [4707]

1909 Rex, 5½ h.p., and sidecar, F.E., handle starting, mag., h.c., new Palmer car back, unpunctured, Whittle, accessories; offers.—39, Park, Woodlands, Doncaster. [X6432]

## Booth's Best Bargain.

We offer a Brand New High-grade  
**1911 3½ h.p. PREMIER**

as turned out by makers and fitted with  
stand-carrier, toolbag, tools, number plates,  
etc., fully guaranteed, for £36 10s.

## A REDUCTION OF £11.

We will supply the same machine fitted  
with free engine for £5 5s. extra.

**STURMEY-ARCHER 3-SPEED GEAR**  
supplied for £10 extra, making it the best  
sidecar machine on the market.

CLYNO, 1912, only run 200 miles	£57 10
HUMBER, 1911, 3½ h.p., 2 speeds, handle starting, and Millford sidecar	£33 15
PREMIER, 3½ h.p., 1911 model	£27 10
MOTO-REVE, 1910, splendid condition	£16 10
N.S.U., 3½ h.p., 1908, magneto, 20 in. wheels	£13 10
REX, 3½ h.p., 1908, spring forks, magneto	£16 10
Twin DOT, 7½ h.p., 2-speed, handle starting, with sidecar	£36 10
VINDEC, 5 h.p., 1910, 2-speed	£35 0
REX, twin, 1910, Speed King	£17 10
REX DE LUXE, 5 h.p., twin, 1911, M.O.V., with 112 12s. Rex sidecar	£47 10
REX, 3½ h.p., vertical engine, magneto	£8 10
BRADBURY, 1910, 3½ h.p.	£20 0
HUMBER, 1910, 2-speed gear	£29 10
SAROLEA 5 h.p. Tricar, P. and M. gear	£10 10
ENFIELD Lightweight, 1910	£18 10
QUADRANT, 3½ h.p., magneto, spring forks	£16 10
N.S.U., 4 h.p., single cyl., 1910, special sidecar model, with two-speed gear, complete with sidecar	£35 0
VINDEC SPECIAL, 5 h.p. twin, magneto, spring forks, h-b. control, 2 speeds, free engine	£25 0
3 h.p. CLYDE, M.O.V. magneto	£8 10
WOLF Lightweight, 1910	£10 0
QUADRANT, 3 h.p., vertical engine	£5 10
FAFIR, 3 h.p., M.O.V.	£6 15
MINERVA, 2½ h.p., nice order	£6 10
REX DE LUXE, 7 h.p., 1911, 2-speed	£40 0
REX DE LUXE, 5 h.p., 2 speeds, magneto	£22 10
TWIN DOT, 1912, 6 h.p., J.A.P. engine, M.O.V., 2 speeds, complete with sidecar; cost £80	£47 10

PUSH CYCLES TAKEN IN EXCHANGE.

## £2,000 WAITING.

We are buyers of good magneto machines in any quantity, either new or second-hand. Send us full particulars of the machine you wish to sell, and lowest cash price you will take.

## ENGINES.

7 h.p. Twin REX, 1911, M.O.V.	£9 10
9 h.p. DARRACQ, water-cooled, pump, and carb.	£9 10
3 h.p. CLYDE, M.O.V.	37/6
4 h.p. ORIENT	£3 0
2½ h.p. MINERVA	£2 10
2½ h.p. DE DION	30/-

## MISCELLANEOUS.

WANTED.—XL All Spring Forks.	
New 1912 B. and B. Carburettor	23/6
26 x 24 in. Heavy Pedley Cover	25/-
Fittall Two-speed Gear	£3 5
Nearly new 1912 Senspray	23/6
Bradbury Pattern Handle-bars	6/6
Lowen Sidecar; cost £14	£5
Mabon Clutch, fit 1911 twin Rex	35/-
Long Handle bars, dropped ends	5/6 and 6/6
Coronet Silencers, up to 5 h.p.	3/3 and 4/6
Sidecar lamp brackets	1/6
Wide Mudguards, 4 in.	pair 2/11
B. and B. Amac, h.b. control	13/6
New Amac Carburettor, h.b. control	12/6
Montgomery 12-guinea Castor Sidecar	£6 0
Mills-Fulford Sidecar	£3 15
Tubular Carriers, with drop ends	4/6
Cyclecar Chassis, wheel, tyres, P. and M. 2-sp.	£10 10
Eisemann Magneto, good order	£1 10

## Booth's Motories,

Keighley Mills, Bedford Street North, Halifax.  
Telephone 1062.



# MAUDE'S BARGAINS

## THE PORTLAND IDECAR

Lightness



Security

FITS ALL MACHINES.  
OUR LIST EXPLAINS FULLY.



£6 6 0      £7 7 0  
£8 8 0      £9 9 0  
£11 11 0      £12 12 0

ALL FULLY GUARANTEED.

Rigidity



Elegance

## PRECISION ENGINES.

Your present engine accepted in part payment and good allowance made for the new 4½ h.p. or other Precision engine.

**J.A.P. & PEUGEOT**  
also supplied. Trade supplied.

### MISCELLANEOUS.

1912 B. and B. Carburettors Our price	22/6
1912 ditto, variable jet ....	24/6
Amac, h-b. control, second-hand .....	15/-
B. and B., tank control .....	10/6
Jap Automatic Carburetter .....	15/-
7ft. 6in. Lyso Belt, rin. ....	11/6
8ft. Stanley Dermatine, rin., new .....	12/6
8ft. 6in. Stanley Dermatine, rin., new ..	11/6
8ft. 6in. Stanley Dermatine, rin., new ..	14/-
7ft. gin. Watawata, rin., new ..	15/-
Long Handlebars, heavy gauge .....	6/6
Post Horns, with Dust Screen .....	10/6
Three Twist, Triumph pattern .....	4/-
Two-note Horns .....	3/6
Three-note Horns .....	4/6
Kumfi rubber handle grips .... Per pair	1/2
Pair Greenwood car headlamps, new ....	60/-
Dropped gear, new .....	17/6
200 amp., 6 volt. car accumulator .....	32/6
too volt., 3 amp. dynamo or motor .....	65/-
Soiled 26 x 2 Continental M/S covers ..	25/-

**MAUDES MOTOR MART.**  
136 GREAT PORTLAND STREET,  
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Telephone 552 Mayfair  
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## MOTOR BICYCLES FOR SALE.

**PREMIER, 1911, 3½ h.p.,** Millennium 2-speed gear and free engine, perfect condition, very little used; 240.—Fairbairn, chemist, Northallerton. [6049]

**HUMBER Forecar, 3½ h.p.,** free engine, good order; cheap, £16, or exchange for good motor cycle.—H. Bellwood, 43, Cambridge St., Scarborough. [X6242]

**ENFIELD, 1912, 2½ h.p.,** 2-speed, free engine, in perfect condition, very little used, with lamp, horn, spares, etc.; £36.—H. Pinck, Tadcaster. [X6290]

**3½ h.p. Motor Cycle, good hill-climber,** tyres good, belt new, B. and B. carburetter, spring forks; £18, or best cash offer.—Haverth, Settles, York. [6026]

**DOUGLAS, 2½ h.p.,** 2-speed, splendid condition, lamp, chain, horn, speedometer, with all spares; £36, or nearest offer.—197, South View Rd., Sheffield. [X6260]

**EASY Payments for Humbers, Bradburies, Rudges,** at cash prices; this week only to reduce stock; immediate delivery.—Cooke's, Longsight, Manchester. [5654]

**BRADBURY, 1912, 2-speed,** remarkably good condition throughout; cost £55 few months ago, our price £36 cash; deferred terms arranged.—Hitchens's, Ltd., Morecambe. [5757]

**N.S.U. mag. ignition, B. and B. carburetter, h.b.c.,** decent condition, running order, reliable mount; £9 cash; deferred terms arranged.—Hitchens's, Ltd., Morecambe. [5759]

**ROYAL Enfield, 1912, brand new, 2-speed and free** engine, chain drive, makers' full specification; listed £52/10, our price £42 cash, deferred terms arranged.—Hitchens's, Ltd., Morecambe. [5760]

**1909 Wolf, 2½ h.p.,** new accumulator and back tyre, running order, 20in frame, 26 wheels; £7/10, or exchange 22in push bike and cash.—Walby, 2, Hollis Grove S., Darwen. [X6466]

**1912 James, 3½ h.p.,** free engine, new July, perfect, £41/10; 1912 Humber, 2½ h.p., new Aug. 6th, absolutely new condition, £22; giving up.—Coupe, 7, Pilot St., Accrington. [X6419]

**3½ h.p. Calthorpe, September, 1911, perfect condition,** 32 just overhauled, and 25 worth spares; expert examination welcomed; £30; reason buying car.—Plowman, Sheriff Hutton, York. [X6052]

**1908 Triumph, all accessories, X'll saddle, new John** Bull cover, new Pedley belt, splendid running order, £25; also rigid sidecar, £2/10.—Fielding, tobacconist, Hebden Bridge. [X6361]

**MACHINES for sidecar work now in stock include** 1912 P. and M., Scotts, A.J.S. twin, Bradbury, N.S.U. gear, 3½ h.p. Zenith, etc.—W. F. and Co., 5, Cheltenham Parade, Harrogate. [X6229]

**NEW Hudson, 1912, 2½ h.p., 3-speed, Rom back,** nearly new; cost, £50, take £39.—Above. [X6426]

**GENUINE De Dion, 2½ h.p.,** plain coil, Hellesen dry battery, 2 pulleys, belt rim brake, 1911 B.B. carburetter, 3 Crown rubber belt; 24/10 the lot.—W. Scholey, 56, Chapel St., Wath-on-Dearne. [6158]

**CLYNO, July, 1912, 600 miles,** Palmer cords, X'll saddle, lamp, horn, practically new, £55; with Montgomery spring wheel sidecar, £60.—Garson, Linskill House, Southfield Rd., Middlesbrough. [X6229]

**END of Season Bargains—1909 T.T. Triumph, £25;** 1910 standard Triumph, Mahon clutch, £34; 1911 Bradbury, a flier, £30; 1911 Rudges, £32; 5½ h.p. Clyno, new, 60 gos.—Cross, agent, Rotherham. [X6427]

**THE Following Latest 1912 Models (new), to be cleared** at bargain prices: 3-speed Rover, 3-speed Colonial New Hudson 2-speed Bradbury, clutch 4½ h.p. Rex-Jap, standard Kerry-Abingdon, 2 clutch Kerry-Abingdon.—Apply immediately, Northern Depot, Ltd., Everything Motorish, Lece St., Liverpool. [X5398]

**GREAT Sale 2nd-hand Motor Bikes, must be sold—** 2½ h.p. J.A.P. £8/10; 2½ h.p. Rex, mag., £12; 3½ h.p. Triumph, mag., £17; 2½ h.p. Moto-Reve, free engine, 1910, £14/10; 3½ h.p. 4-cl. F.N., with 2-speed gear, £18/18; 1910 Triumph, new condition, £26; 1909 P. and M., 3½ h.p., with 2-speed and sidecar, new condition, £36; 1910 Douglas, £28; 1910 Rex, with 2-speed gear, £20; 1912 Rex and Sidecar, practically new, £50.—Motor Cycle Exchange, 160, Young St., Sheffield. [60100]

### SECTION III.

**Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.**

**PHELON and Moore, new standard touring model,** just arrived.—Moss, Wem. [X6335]

**SCOTT, 1912 model, absolutely as new, only run 200** miles, makers' full guarantee; £59.—Moss, Wem. [X6336]

**NEW 3½ h.p. Rover, and 2nd-hand ditto, to be sold** cheap.—J. Cooke, Sandbach. [X6056]

**1912 3½ h.p. Rover, free engine, shop-soiled; what** offers to clear?—Lester's Garage, Lichfield. [X6385]

**1912 3½ h.p. Singer, free engine, shop-soiled; what** offers to clear?—Lester's Garage, Lichfield. [X6386]

**1912 2½ h.p. Singer, 2-speed gear, shop-soiled; what** offers?—Lester's Garage, Lichfield. [X6387]

**3½ h.p. Rover Motor Cycle, free engine, as new—** 32 Smith, Welsh Row, Nantwich. [X6053]

**BRADBURY, 1911, free engine, 1,000 miles; what** offer?—Best, Whitaker Rd., Derby. [X6445]

# MAUDE'S BARGAINS

## EXCHANGES

## EASY PAYMENTS

### ON ANY OF UNDERMENTIONED:

1912 REX (sidette), 6 h.p. ....	£7
1912 REX (de Luxe), 6 h.p. ....	£8
1912 REX (sidette), 4 h.p. ....	£7
1912 REX (de Luxe), 4 h.p. ....	£5
1912 ARIEL, 3-speed, 3½ h.p. ....	£5
1912 RUDGE (free engine) ....	£5
1912 RUDGE (multi) ....	£6
1912 ZENITH, 3½ h.p. ....	Gns. 5
1912 ZENITH, 6 h.p. ....	Gns. 8
1912 NEW HUDSON, 3½ h.p., 3B, 1913 gear,	
kick start .....	Gns. 5

All Brand New and for Immediate Delivery.

A FEW  
AT  
**1912**  
REDUCED  
PRICES  
TO CLEAR.  
CALL FOR PARTICULARS.

### SECOND-HAND.

<b>RUDGE,</b> 3½ h.p., T.T. 1911 model, very fine order .....	£2
<b>DOUGLAS,</b> 2½ h.p. standard 1911 model, fine machine .....	£2
<b>P. &amp; M.,</b> 1911, 2-speeds, Cowey meter, Millford sidecar. A beauty .....	£5
<b>A.C.</b> Sociable, 1912 de luxe model, hood, screen. All lamps. Like new .....	£8
<b>ZENITH,</b> 6 h.p., 1912 standard, not run 50 miles .....	£8
<b>HUMBER,</b> 3½ h.p., 1911, 2-speed, and sidecar .....	£3
<b>INDIAN,</b> 7/9 h.p., 1911, 2-speeds, and 18/8 sidecar .....	£8
<b>MINERVA,</b> 2½ h.p., Bosch magneto, French grey .....	£1
<b>REX,</b> 5 h.p., spring forks, twin, handlebar control .....	£1
<b>ARIEL,</b> 2½ h.p., handlebar control, 26in. wheels .....	£1
<b>A.J.S.,</b> 3 h.p., twin, just been overhauled and re-enameled .....	£2
<b>F.N.,</b> 5/6 h.p., four-cylinder, exceptionally good order .....	£2
<b>MOTO REVE,</b> 2½ h.p., grey finish, 1910 model twin .....	£2
<b>DOUGLAS,</b> 2½ h.p., 1911 model, 2-speeds, as new .....	£2
<b>PUGH,</b> 7/9 h.p., T.T. model, Bosch magneto .....	£2
<b>F.N.,</b> 5/6 h.p., good tyres, 1910 model ..	£2
<b>F.N.,</b> 4½ h.p., 1909 model, good running order .....	£1
<b>KERRY,</b> 2½ h.p., very nice lightweight ..	£1
<b>REX,</b> 3 h.p., vertical engine, handlebar control .....	£2
<b>MOTOSACOCHE,</b> 1½ h.p., magneto, handlebar control .....	£2
<b>WERNER,</b> 2 h.p., vertical engine, 6 h.p. 1912 de luxe, 2-speed. Fine order .....	£2
<b>REX,</b> 1910 3½ h.p. tourist, Druid forks ..	£2

**MAUDES MOTOR MART.**  
136 GREAT PORTLAND STREET,  
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Telephone 552 Mayfair  
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# WANTED

Orders for

**RUDGES**

**ZENITHS**

**SCOTT'S**

**DOUGLAS**

**LEVIS**

**JAMES**

**CLYNO**

1913 Models.

# SCOTT'S

POWELL STREET, HALIFAX.

- 1913 Models.

NUMBER, 1912, 2-speed, handle starting £44 0

NEW HUDSON Lightweight, 2½ h.p. lap, like new, 3-speed gear, a bargain £35 0

RUDGE, Standard 1912, 3½ h.p. .... £38 0

PREMIER, 3½ h.p., 1912, complete with sidecar, 3 speeds ..... £55 0

NEW HUDSON, 3½ h.p., 1912, not done 300 miles, 3 speeds ..... £45 10

NUMBER, 3½ h.p., 2-speed and free engine, take a sidecar ..... £39 0

TRIUMPH, 3½ h.p., late 1908, a beauty £26 0

TRIUMPH, with 2 speeds and free engine ..... £26 0

TRIUMPH, clutch model, 1910½ ..... £28 0

INCOLN ELK, 3½ h.p., 2-speed and kick starter ..... £36 0

EX, 1908, 3½ h.p., h.b.c., ..... £16 0

& M., complete with 9 guinea sidecar £32 0

EX, 1910, 5-6 h.p., 2-speed, and free engine complete with sidecar ..... £36 0

EX, 1911½, 2-speed, free engine ..... £26 0

HAMPION, 1911, like new ..... £26 0

N. Lightweight, 1911-12, shaft drive, shop-soiled, complete with £10 worth of spares ..... £38 0

N., 5-6 h.p., fitted with 2-speed gear and free engine at a cost of over £80, a bargain ..... £38 0

MINERVA, 3½ h.p., h.b.c., magneto ignition, spring forks ..... £15 0

NUMBER, 3½ h.p., and forecar, P. & M. 2-speed, ..... £18 0

50/- down and 5/- per week secures the following :

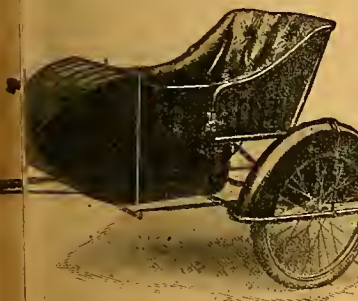
JADRANT, 3½ h.p., h.b.c. .... £10 10

S.U., 3½ h.p. .... £16 0

JADRANT, 2½ h.p., spring forks .... £8 0

EX and Forecar, complete, with free engine h.b.c. .... £14 0

9 guinea Sidecar, second-hand ..... £4 4



Guaranteed for 12 Months.

As Illustrated, 10 GUINEAS.

Write for Sidecar Catalogues.

We claim to have the finest and strongest Sidecar on the market. No fear of a wheel dropping off.

**WATFORD SPEEDOMETERS**

A Models. Liberal allowances made on old ones.

Rests, post paid ..... 2/10

**SCOTT, Victoria Motor House,**

**POWELL STREET, HALIFAX.**

Tribone—433 National.

Trans—"SCOTT, Powell Street, Halifax."

# MOTOR BICYCLES FOR SALE.

TWIN Humber, 2½h.p., Armstrong 3-speed gear, 2½in rear tyre, double footrests, belt guard, spare belt, lamp, horn, and spares, splendid condition; near offer to £40.—Geoffrey Smith, Dunelm, Northumberland Rd., Coventry. [X2077]

ROVER, 3½h.p., 1912, Sturmer-Archer 3-speed gear, delivered June last, ridden 1,400 miles; listed at £59, will accept £49/10; would take a sidecar anywhere; no offers or exchanges entertained; may be seen by appointment.—P. W. Johnson, 22, St. George's Rd., Coventry. [0163]

2½h.p. Clement-Garrard, Eisemann, B. and B., h.b.c., Whittle, spring forks, N.A.B., Brooks B100, 2 brakes, new Hutchinsons, Michelin, Autocycle, generator, footrests, horn, stand, carrier, outfit, pump, cyclometer, overalls; £10.—Wells, "Twistwo," Wareley Rd., Kenilworth. [6285]

TRIUMPH, 1912, clutch model, £55, just arrived; new Zenith Gradua, 3½h.p., T.T. Rudge, 2½h.p. Singer lightweight, what offers; 1911 Triumphs, standards, not ridden 1,000 miles, £35; 1912 4½h.p. Singer and sidecar, £57/10; must sell.—Midland Cycle Co., Coalville, Leicester. [X6382]

BARGAIN.—Triumph, 1907 model, with 1911 cyl. and piston, 1912 improvements, new belt, Dunlop tyres, Triumph lamp and generator, Jones speedometer, T.T. and touring handle-bars, spurs, and tools in splendid running order; take £27/10, or near offer.—Box No 1,435, The Motor Cycle Offices, Coventry. [X6068]

# SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1908 Standard Triumph, in good going order; £22, all encares.—37 Seale St., Cambridge. [X6063]

NEW Free Engine Triumph, just delivered; twin N.S.U., mag., £19.—Kwen King's Lynn. [X644:]

6-h.p. N.S.U., 2-speed, in perfect order; bargain, £15.—Cox, St. Andrew's Hill, Cambridge. [X6253]

NEW and 2nd-hand Motor Cycles of all makes at greatly reduced prices.—Lambert, Thetford. [X4429]

5-h.p. Clyno, 2-speed; must be sold, £49 for quick sale.—Watson, 5a, Pembroke St., Cambridge. [X6252]

1909 Free Engine Triumph, in real good order and condition; £27.—3a, Bridge St., Cambridge. [X6060]

1912 Triumph, shop-soiled; offers; Scotts and Morgans in stock.—Knaster and Cox, Green St., Cambridge. [X6254]

TRIUMPH, 1912, free engine, just delivered, quite new; offers invited.—Shaw, Waterworks, Royston, Cambs. [6175]

1912 3½h.p. Humber, 2-speed, only 2 months old, very little used, excellent condition; £43.—Parker and Son, St. Ives, Hunts. [6207]

TRIUMPH, 3½h.p., standard, 1908, tip-top order; bargain, £24, or lightweight and cash.—Garham, 96, Crown St., Ipswich. [X6480]

EASY Payments.—Motor cycles, any make; £10 deposit, balance monthly.—General Trading Company, Gt. Yarmouth. [X3058]

TRIUMPH, 1908, Palmer cords, excellent condition, overhauled thoroughly; £20, or nearest.—9, John St., Rose Lane, Norwich. [X5680]

1911 Ariel, free engine, decompressor, very fast, gold medal London-Etete, like new, accessories; £36.—Stiles, 10, Chalk Hill Rd., Norwich. [X6237]

1912½ Douglas K, kick start, 2-speed, free engine, lamp and horn, cost £52/10 in July, not run 400 miles; take £42.—Foil, surveyor Woburn Sands. [X6375]

B.S.A., 1912, 3½h.p., free engine, 2½ tyres, only ridden 1,600 miles, condition as new; owner going, abn. ad.; £40.—1,433, The Motor Cycle Offices, Coventry. [X5698]

1911½ Triumph, F.E., Lucas lamp, Cowey speedometer, new spare belt, new heavy Kempshall tyre (52/6), spare Rich tube, all excellent order; £45.—Wm. Aueritt, Chatteris. [6102]

# SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

B.S.A., 1912, free engine model, used one month only; £40.—Stour Cycle Depot, Stourbridge. [X6390]

1911 Free Engine Triumph, splendid condition, F.R.S. lamp, spares, tyres new; £42.—Woodward, Upper Wick, Worcester. [X6198]

RUDGE Standard, 1912, not ridden 700 miles, perfect, Serpentine horn and Miller's lamp; £38/15.—Edmunds, Windsor Chambers, Peasarth. [X6411]

BRADBURY, June, 1912, perfectly new condition, easily do 50, climb anything; necessity compels sale.—Millward, Treatham, King's Norton, Birmingham. [6128]

CLEMENT, 2½h.p., 1912, B. and B., cylinder rebored and new piston, good tyres, new belt; first reasonable offer.—Box L8,958, The Motor Cycle Offices, 20, Tudor St., E.C.— [6288]

CLYNO, 1912, fitted with Clyno sidecar, 5-6h.p., twin cyl., kick starter, extra large Brooks saddle, exhaust whistle, Palmer tyres sidecar and front wheel, Kempshall back, complete with all tools and spares, in splendid running order, tyres and machine as new; trial run given if desired; cost £85, accept £65 for cash.—On sale at Everitt's Garage, Droitwich. [X6227]

# Collier's Motories,

Westgate, Halifax, England.

# REX-J.A.P., all 1912 Models.

- LISTS FREE ON APPLICATION.

CASH, EXCHANGE, OR EASY PAYMENTS.

ROVER, 1911, 3½ h.p., fine order £39 10

N.S.U., 3½ h.p., 2-speed and magneto £21 10

TRIUMPH, 1910, 3½ h.p., mag. neto and free engine £35 10

REX, 1912, 4 h.p. Tourist, 84½ x 95, new £46 0

REX DE LUXE, 1912, 4 h.p., 2-speed, new £56 0

INDIAN, 1911, 5 h.p., Clutch, spieo-did condition ..... £39 10

REX, 7 h.p., Twin, spring forks, very hot ..... £35 10

ANTOINE, 6 h.p., Twin, mag. neto, spring forks ..... £23 10

REX DE LUXE, 1911½, Twin, 2-speed, new, 1912 frame and control ..... £53 10

REX DE LUXE, 1911, 3½ h.p., 2-speed and new sidecar, very smart lot, with maker's guarantee .. 49 gns.

KERRY, 2½ h.p., runs well .... £8 10

REX, 1911, 3½ h.p., Tourist, very reliable ..... £29 10

REX DE LUXE, 5 h.p., 2-speed Twin, and sidecar ..... £35 0

# 1912 BRADBURY'S

- LIBERAL EXCHANGES.

N.S.U., Twin, 2-speed, magneto, and sidecar ..... £26 10

MINERVA, 2½ h.p., 2-speed, 2½in. tyres ..... £16 10

REX, 1910 Twin, special finish ... £29 10

SCOTT, water-cooled, 2-speed, specia bargain ..... £33 0

REX, 1909, 3½ h.p., Tourist, specially good ..... £23 10

REX, 5½ h.p., Twin, spring forks .. £16 10

MINERVA, 4½ h.p., Twio, spring forks ..... £16 10

OLYMPIC, 3 h.p., vertical engine 2 h.p., single cylinder, very fine condition. .... £7 10

MOTO-REVE, 3½ h.p., magneto spring forks ..... £19 10

WHITE & POPPE, 3½ h.p., 2 h.p., single cylinder, very fine condition. .... £16 10

REX, 5½ h.p., Twin, free engine, good order ..... £18 10

J.A.P., 2½ h.p., Lightweight, spring forks, H.B. control ..... £9 10

REX, 3½ h.p., H.B. control, excellent order ..... £8 10

Every offer duly considered.

# 1912 REX EXCHANGES

SPECIAL QUOTATIONS. OFFERS WANTED.

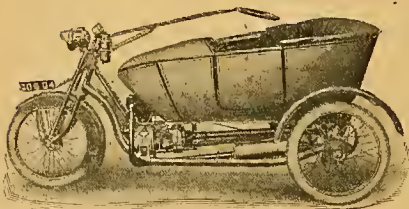
# Collier's Sidecars,

From £5 5s. each.



# ROBERTSON'S

## 1913 "WALL"



5 H.P., 2-Speed, Shaft Drive.

100 Guineas. Come and try it.

1913 C.M.C. CYCLECAR, 100 Guineas  
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## New 1912 Motor Cycles

Scott, Zenith, Bat, New Hudson,  
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- 1234 **MATCHLESS**, 8 H.P. 2-SPEED, Twin belts, F.R.S. and P. & H. lamps, P.M.C. coach built sidcar, 4/4 generator, 4/4 speedometer, spare cover and tubes, etc., etc. Cost £112 in June ..... **£78**
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- 1227 **BRADBURY**, 3½ H.P., 2-SPEED, Belt drive, lamp, horn, and tools, like new ..... **£39**
- 1231 **CLYNO & SIDECAR**, lamp, horn, Cowey, tools. Cost £92 ..... **£72**
- 0250 **IVY PRECISION**, 3½ H.P. Shop-soiled only ..... **£36**
- 1203 **IVY PRECISION**, 3½ H.P. T.T. MODEL. Ridden about 200 miles ..... **£35**
- 0188 **NEW HUDSON**, 3½ H.P., 3-SPEED GEAR SHOP-SOILED ONLY ..... **£54**
- 1236 **F.N.**, 4-CYLINDER, 5-6 H.P. Clutch Model ..... **£32**
- 1175 **ZENITH**, 3½ H.P. In perfect order. Lamp, horn, and tools ..... **£44**
- 1194 **ZENITH**, 6 H.P. Beautiful order. Lamp, horn, and tools ..... **£62**

## 1911.

- 1229 **TRIUMPH**, 3½ H.P. CLUTCH MODEL. Lamp, horn, and tools ..... **£40**
- 1173 **BAT**, 6 H.P. New condition. Lamp, horn, and tools ..... **£36**
- 1142 **BRADBURY**, 3½ H.P. Fine order. Lamp, horn, and tools ..... **£34**
- 1204 **BRADBURY F.E.**, 3½ h.p. All accessories ..... **£36**
- 1207 **F.N.**, 4-CYLINDER, 5-6 H.P., 2-SPEED. Lamp, horn, and tools ..... **£38**
- 1217 **HUMBER**, 2½ H.P., 3-SPEED. Splendid order. Lamp, horn, and tools ..... **£28**
- 1208 **SCOTT**, 2-SPEED 2-STROKE, 2-CYL. water-cooled. Suitable for a lady ..... **£44**
- 1382 **PREMIER**, F.E., 3½ H.P. Fine order. Lamp, horn, and tools ..... **£36**
- 1200 **ZENITH**, 6 H.P. Splendid for sidcar. Lamp, horn, and tools ..... **£52**
- 1149 **ZENITH**, 3½ H.P. Good appearance. Lamp, horn, and tools ..... **£36**

## MISCELLANEOUS.

- 1237 1910 **TRIUMPH**, Clutch Model. Lamp, horn, and tools ..... **£32**
- 1161 1910 **SCOTT**, 3½ H.P., 2-SPEED, 2-STROKE. Lamp, horn, and tools ..... **£28**
- 1211 4 H.P., **STEVENS**, Magneto, H.B. control, spring forks, lamp, horn and tools ..... **£16**
- 1221 1910 **PREMIER**, 3½ H.P. 2-CYL. Lamp, horn, tools. Most excellent condition ..... **£29**
- 1230 1910 **CHATER-J.A.P.**, 5 H.P. Lamp, horn, and tools ..... **£26**
- 1232 1910 **BROWN**, with 1912 N.S.U. 2-SPEED GEAR. All Accessories ..... **£29**
- 1220 3½ H.P. **SWIFT**. All accessories ..... **£12**

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157b, GREAT PORTLAND STREET, W.

## SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

**DOUGLAS**, 1911, 2½ h.p., 2-speed and free engine; £29.—Layton's, Bicester, Oxon. [X6460]

**TRIUMPH**, 1910, standard model; £30.—Layton's, Bicester, Oxon. [X6461]

**F.N.**, 5-6 h.p., 4-cyl., in very nice order and well tyred; £25, or near offer.—Layton's, Bicester, Oxon. [X6462]

1913 Douglas, all models.—Ensure early delivery by ordering now from Gibb, Motors, Gloucester. [5308]

**B.S.A.**, 1912, 2-speed, little used; best offer accepted. K., Simmons, "Inwood," Rectory Rd., Redditch. [6250]

**OXFORD**—Eyles and Eyles, 113, St. Aldate's, have the famous G.W.K. cyclecars; immediate delivery; trial runs. [6250]

**OXFORD**—Eyles and Eyles.—1912 Scotts, B.S.A., Premiers, and Bats, 2nd-hand models; Zenith, Rudge, Premier, Scott, Kerry, Enfield, and N.S.U. machines taken in part payment. [X5565]

**TRIUMPH**, 1909 model, perfect order, horn, whistle, lamp, carefully used; £27.—Cottage, Cromwell St., Gloucester. [X6435]

**TRIUMPH**, 1911, speedometer, footboards, lamp, new Kempsall, new belt, perfect.—Murray, Angel Cafe, Basingstoke. [X6240]

3½ h.p., 1911 Singer, condition perfect; sacrifice £30: 32 trial by appointment.—Harold Whitehead, Kenward, Slough. [6165]

**DOUGLAS**, late 1909, Lyso, Palmer cords, beautiful condition throughout; £20.—A. C. Base, West Wycombe, Bucks. [X6239]

**DOUGLAS**, 1911, P. and H. lamp, horn, Veeder recorder, studded tyres, waterproof coat; £30.—Wood, Beccles, Cheltenham. [6084]

4 h.p., W. and P., 1911 B. and B., mag., spring forks, lamp, accessories; trial willingly; £17.—Lane, Honey St., Pewsey, Wilts. [6224]

**DOUGLAS**, 1912, model H., practically new, splendid running order; price £38, or near offer.—Rossiter, South Rd., Kingswood, Bristol. [X6291]

3 h.p. Quadrant, B. and B., h.b.c., new studded Dunlops, spring forks, smart, grand condition; £9/10.—Electricity Works, Avonmouth. [6091]

**HUMBER**, 1911, 2-speed, free engine, handle starting, perfect order, full equipment; £33.—Humphrys, Holme Villa, Newbury. [X5692]

**TRIUMPH**, 3½ h.p., 2nd-hand, new piston, cyl., pulley, back cover fitted; owner going abroad; what offers?—Cecil Odell, Newport Pagnell. [X6156]

**QUADRANT**, 5 h.p., h.b.c., Brown-Barlow, Hellesen, spring forks, new tyre, perfect order; £8, offers.—65, St. Mary's St., Stantonbury, Bucks. [6118]

**PREMIER**, late 1911, free engine, 3½ h.p., just overhauled, accessories; £35; with Herald sidcar £41, complete.—T., Breydon, Charnminster Rd., Bourne-mouth. [6245]

1910 3½ h.p. Humber, 2-speed, handle starting, complete, horn, tools, etc., excellent condition; £30, or near offer.—Somerville, 8, Melrose Place, Chilton, Bristol. [X6459]

**TRIUMPH**, 3½ h.p., Bosch, B. and B., 2 new belts, absolutely perfect, numerous spares; any value; £22/10: useful exchange.—The Beeches, Ash Vale, Aldershot. [6001]

**ROYAL** Enfield, 2½ h.p., 2-speed, new August 16th, 1912 not ridden 10 miles; cost with lamp and extras £54, sacrifice £42/10, no offers.—H. Harris, Jeweller, Bicester. [X6170]

**DOUGLAS**, 1912, Model K., 2 speeds, clutch, kick start, perfect condition, speedometer, lamp, horn and mud screens; £45.—Captain Robinson, Colewort Barracks, Portsmouth. [6088]

**TRIUMPH**, 1912, free engine model, F.R.S., and all spares, only ridden 3 times, 100 miles total; cost few weeks ago over £60, accept £52/10.—Reynolds, The Lodge, Cosham, Hants. [5868]

**DOUGLAS**, 1909, late, in first-class condition, free engine, clutch, engine just been overhauled, 2 new inner tubes; bargain £28/10; owner going abroad.—Pirgrove, Hucclecote, Gloucester. [X6295]

**DOUGLAS** Model K Motor Cycles in stock, ready for immediate delivery; £50.—The Motor Cycle Depot, 43, Palmerston Rd., Boscombe. Tel.: 1248 Bourne-mouth. Telegrams: Alford, Boscombe. [2119]

**SCOTT**, 1912, new September, horn 400 miles, perfect, Kfall saddle, Lucas lamp and generator and horn; accept nearest offer to £60.—Apply, Newman, 16, Osbourne Villas, St. Michael's Park, Bristol. [6114]

**LATE** 1910 Clutch Triumph, started new 1911, carefully kept, little ridden, magnificent engine, new condition and appearance, mirror, Veeder, accessories; best offer over £35.—Milward, Wood St., Swindon. [6166]

1913 2½ h.p., 2-speed, free engine, multiple plate clutch, shaft driven, F.N. lightweight, cost £47/5 few weeks ago, now 100 miles only, perfect order; sacrifice £39/10.—Alford, Studand, Christchurch, Hants. [6013]

P. and M., late 1910, 2½ h.p., 2-speed, free engine, with B. and B. carburettor, Palmer cord tyres, Cowey speedometer, in good condition, and perfect running order; £30, or near offer.—Lawrie, Farnham Green, Slough. [X5282]

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- 1912 3½ h.p. P. & M., just delivered .... **£60**
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- 1912 5-6 h.p. CLYNO, slightly scratched in railway transit; usual price £68 ss. .... **£61**
- 1912 3½ h.p. **TRIUMPH**, Clutch Model .... **£55**
- 1912 3½ h.p. **BRADBURY**, Clutch Model, hardly soiled ..... **£46**
- 1911 3½ h.p. **BRADBURY**, F.E., and s'car ..... **£30**
- 1911 3½ h.p. **BRADBURY** Tourist ..... **£24**
- 1909 3½ h.p. **TRIUMPH**, fine condition ..... **£25**
- 1912 1½ h.p. **SERVICE WANDERER**, spring frame, hardly scratched ..... **£19**
- 1912 (Early) 5-6 h.p. F.N., 2-speed, perfect ..... **£42**
- 1912 3½ h.p. T.T. RUDGE, very fast ..... **£37**
- 1912 6 h.p. **REX DE LUXE**, 2-speed ..... **£45**
- 1912 3½ h.p. T.T. **BAT**, run about 300 miles ..... **£38**
- 1912 5 h.p. A.J.S., 2-speed, foot-starter, and Gloria sidcar, lamp, and horn, perfect ..... **£66**
- 1909 3½ h.p. **REX** Tourist, fine condition ..... **£20**
- 1909 3½ h.p. P. & M., 2-speed ..... **£34**
- 1911 (Late) 3½ h.p. P. & M. and Gloria sidcar, powerful engine ..... **£63**

Taylor's Competition Waterproof Double Texture Suits.—Double-breasted jacket and separate trousers; 25/6. With seamless trouser overalls; 30/.

North Road Double Texture Bu quality Jackets and Seamless Trouser Overalls; 37/6.

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Special Consignment of

**MOTOR CYCLE EXTRA HEAVY INNER TUBE**. Best quality. 26 x 2 1/2 in., 5/-, 26 x 2 1/2 in., 5/6, 26 x 2 1/2 in., 6/-, Post 3d. Approval.

A quantity of Good 2nd-hand Covers from 3, **COWEY SPEED INDICATOR**.—I only 19 not run 50 miles, guaranteed perfect; 0 £4 4s.; £3 10s. 6d.

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We are Special London Agents for these famous lamps, and take old lamps of any make in p exchange. Trade supplied.

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P. & H. MAJOR SET, GENUINE MANG LENS, very powerful; 45/-. Medium size; 30/

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## MOTOR BICYCLES FOR SALE.

10 Phelan and Moore, with 1911 improvements, carefully used, in excellent order, £36; also 1911 and Moore, new heavy Kempshall back cover, carburettor, very little used, £45.—Willway and Ltd. St. Augustine's, Bristol. [X6153]

11 MPH (mag.), Oct. 1907, perfect order and condition, with 1912 Mabon clutch, new Michelin P.R.S. lamp, new B. and B. carburettor, horn, tube, etc., spring pillion seat included, £25.—L8,962, The Motor Cycle Offices, 20, Tudor St. [X6292]

## SECTION VIII.

ford, Essex, Middlesex, Surrey, Kent, and Sussex.

11 MRER 2h.p. Lightweight not ridden 300 miles; £26.—Rogers, 42, Church Rd., Hendon. [X6401]

12 MPH, 3h.p., 1909, excellent condition, speedometer, pan saddle, lamp and generator; £28.—s, 42, Church Rd., Hendon. [X6401]

13 NO, 3h.p., 2 months old, all spares; £36.—5, Upper Walthamstow Rd., N.E. [X6287]

14 2 Singer, 2h.p., fixed, almost as new; £27/10.—10, Capal Villas, E. Barnet, N. [X6294]

15 2-speed Mag. Roo, 1909; £23; exchange power-lamp twin—75, Edridge Rd., Croydon. [X6415]

16 p. Mioerva, good order; £10, nearest offer.—16, Mayville Rd., St. Peter's, Broadstairs. [X6113]

17 LY, 3h.p., mag.; £16/10, a bargain.—Franklin, 32, London Rd., Kingston-on-Thames. [X5996]

18 U, 3h.p., mag., rebushed, £16/10; sidecar £4/10.—T, 12, Martin's Rd., Shortlands, Kent. [X6179]

19 2 Singer, 2h.p., nearly new, complete; £30.—Lockwood, 19a, Brooksby St., Islington. [X6124]

20 p. Kerry, low, smart, footboards, good running order; £7.—6, Bow Rd., Southwark, London. [X6262]

21 p. Quadrant, good running order; a bargain, £7.—20, Chestnut Grove, Balham, London. [X6166]

22 ITHS, all models, immediate delivery.—Wimbledon Motor Cycle Co., 1, York Rd., Wimbledon. [X623]

23 MBER 2-speed, 1911, almost new; £42.—Address, like, 60, Fellows Rd., Hampstead, London. [X6107]

24 J. Twin Bosch mag., free engine, lightweight; 18, condition as new.—100, Bolsover St., W. [X6204]

25 p. Jap-Chater, low, very powerful; £25.—Barb motor car Co., 142, Shepherd's Bush Rd., W. [X6230]

26 NDSWORTH—F.N., latest 1912, 6h.p., 4-cyl., does 700 miles, as new; sacrifice £45/10.—Below.

27 NDSWORTH—V.S., 1910, 7-9h.p. twin, mag., 2 speeds, cream finish, as new; £38/10.—Below.

28 NDSWORTH—Bat-Jap, 7-9h.p. twin, mag., spring frame and forks, extra powerful; £28/10.—Below.

29 NDSWORTH—Moto-Reve, 1911, 2h.p. twin, mag., Druids, grey finish, as new; £18/18.—

30 NDSWORTH—Roc, late model, 4h.p., m.o.v., mag., Druids, 2 speeds, fine order; £26.—Below.

31 NDSWORTH—N.S.U., 4-5h.p. twin, mag., h.b.c., very fast machine, nice order; cheap, £18/10.—

32 NDSWORTH—Motococche, 2h.p., mag., Druids, uns well; great bargain, first cheque £10/15.

33 NDSWORTH—Singer, 3h.p., mag., 1911, B. and 3, h.b.c., perfect order; here's a bargain; £12/15.

34 NDSWORTH—Rex, 1909, 5-6h.p. twin, mag., new Binks free engine, splendid order; £26.—

35 NDSWORTH—Rex, 3h.p., Druids, perfect; £7/15; exchanges.—Wandsworth Motor Exchange, 4, Wandsworth Station. [X6399]

36 9 Hummer, 2-speed, F.E., 3h.p., only 1,300 miles, first-class condition; £42.—Morris and Co., Swiss N.W. [X6162]

37 MPH, new, clutch model.—Morris, Swiss Cottage, N.W. [X6163]

38 MPH, 1910, clutch model, excellent condition; 6.—Morris, Swiss Cottage, N.W. [X6164]

39 MPH, 1907, just overhauled and enamelled, good condition; £15.—Morris and Co., Swiss Cottage. [X6165]

40 Premier, 3h.p., 2-speed, F.E., in good condition; £27/10.—Morris and Co., Swiss Cottage. [X6166]

41 4h.p. Rex de Luxe, 2-speed, new lin. Lyso and pre, all accessories, as new.—72, Ealing Rd., W. [X6076]

42 Bradbury, shop-soiled, F.E.; must sell, £47, cost £4/10.—46, Walford Rd., Stoke Newington. [X6504]

43 Crimph, 1912, new; must sell, going abroad, at offers.—38, Chancery Rd., Walthamstow. [X6452]

44 Rover, m.o.v., 26x2½ tires, splendid running order; £8/10.—Speckley, 45, Church Rd., Acton. [X6176]

45 S, 1912, 3h.p. twin, N.S.U. 2-speed gear and free line; £30.—Charles, 81, Hereford Rd., Bayswater. [X6126]



# REX-JAP

## THE Sidecar Machine

—a letter of appreciation from—  
**A PRIVATE OWNER:**

Ludwell,  
Salisbury,  
28th June, 1912.

Dear Sirs,

Having covered 2,400 miles on my 1912 6 h.p. REX-J.A.P., the major part with Sidecar, I think I am in a position to express an opinion on its behaviour. It is with a great deal of pleasure that I can express my complete satisfaction.

It is very rare that I have to use the low gear with a 15 stone passenger, the high gear being 4 to 1.

The riding position is excellent—I have ridden for hours without feeling the slightest bit tired. I usually average 30 miles per hour with Sidecar. I have taken the cylinders off once, and then found scarcely any deposit. The engine is wonderfully clean—it would be quite possible to ride in white flannels.

A word of praise for the Dunlop Belt which has gone the whole distance, and is good for many more miles.

You are at liberty to use this in any way you think fit.

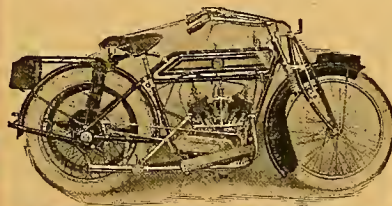
Yours faithfully,  
(Signed) R. Gatehouse.

May we have the pleasure of sending you Catalogue fully illustrating the unique features of the REX-J.A.P. ?

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## MOTOR BICYCLES FOR SALE.

QUADRANT, 2h.p., lamp, B. and B., good order; £7.—5, Osborne Terrace, Hasworth Rd., Hampton. [X6213]

MOTO-REVE, twin just re-bushed, overhauled, new Watwata; £16.—Francis, 20, Albany St., N.W. [X6192]

2h.p. F.N., shaft driven, in excellent order; £20; can be seen any time.—99, Churchfield Rd., Acton, W. [X6024]

INDIAN, late 1911, 6h.p. twin, free engine, exceptionally fast; £37, a bargain.—100, Bolsover St., W. [X6206]

1910 Hummer, 2-speed, F.E., just been overhauled by Humbers; £32.—88, Farleigh Rd., Stoke Newington. [X6505]

DOUGLAS, 1910, nice condition, speedometer, spares, etc.; particulars free.—Ketco Motors, Smarden, Kent. [X6294]

1910 5-6h.p. 4-cyl. F.N., in perfect condition; £25; lower power part payment.—Sinclair, East Molesey. [X6367]

MOTO-REVE, twin, mag., fine engine, perfect condition; £12.—Duke, 2, Monkham's Lane, Woodford. [X6282]

ARNOS! Arnos! Arnos!—3h.p. T.T., £45; 2h.p. T.T., £39; 3h.p., 3-speed Sturmer-Archer, £55; in stock.

ARNO Depot.—Easy payments, no extra charge, one quarter down, balance 12 months.

ARNO Depot.—3h.p. 1912 Rudge, free engine, with torpedo sidecar, all tyres as new; £42/10.

ARNO Depot.—3h.p. 1912 Arno, T.T. model, very fast, new in June; £37/10.

ARNO Depot.—3h.p. 1911 Hummer, 2-speed, complete with sidecar, lamp, generator, speedometer, etc.; £39.

ARNO Depot, 2, The Parade, Kilburn, London. Phone: 4807 P.O. Hampstead. [X6279]

5-6h.p. Penzance, Traffault forks, Amac, h.b.c., Whittle, very fast; £16.—35, Marlborough Rd., Merton, Surrey. [X6191]

1910, June, Indian; £34, very good condition.—Ansell, 27, Albemarle Gardens, New Malden, Surrey. [X6238]

3h.p. Antoine, Amac, Service, Clincher, in splendid going order; £15, or offer.—W. Watson, 27, Spencer Park, S.W. [X6045]

RUDGE Motor Cycle, brand new, 1912, taken for debt; take £40.—Seymour, 10, Mansfield Rd., Hampstead. [X6366]

1912 Chater-Lea-Jap, 4h.p., T.T. roadster, very fast; nearly new; £26/10.—5, Station Rd., Edgware, Middlesex. [X6366]

3h.p. Minerva, fast, spring forks, lamp, horn, and 2 spares; £16; also sidecar less tyre.—29, Wymond St., Putney. [X6117]

V.S., 5h.p., Bosch, B. and B., Traffault, new heavy Kempshall; £23.—Meadowview, Southend, near Catford, S.E. [X6130]

1912 Arno, 2h.p., perfect condition, accessories; trial willingly; 31gns.—H., "Abbotsford," Sevenoaks, Kent. [X6135]

MOTOR Cycles bought, sold, or exchange, at The Ketco Motors, Smarden, Kent. Accessories lowest prices. [X6297]

1912 2h.p. Enfield, as new; £40, or near offer.—Frank Whitaker, The Rendezvous, Green St., Green, Orpington. [X6201]

2h.p. Lightweight, Amac, h.b.c., new belt, tyres perfect; £7; bought sidecar machine.—7, Killarney Rd., Wandsworth. [X6021]

1909 Trumph, 3h.p., speedometer, watch, mirror, splendid condition; bargain, £31.—47, Cauden Grove, Peckham. [X6482]

3h.p. Brown, accumulator, B. and B., h.b.c., good condition; £12.—Toombs, 125, St. Margaret's Rd., Twickenham. [X6033]

ANTOINE, 3h.p., splendid order, good tyres and belt, low, fast; photo; £10.—127, South St., Bishop's stortford, Herts. [X6154]

TRIUMPH, 1911, fitted with Mabon clutch, horn, lamp and generator; £34.—Moss, 1, St. George's Mews, Primrose Hill. [X6150]

1912 Triumphs, free engine models, now in stock; immediate delivery.—F. Spearman, Bridge St., Bishop's Stortford. [X5925]

5-6h.p. F.N., late 1911, ridden thousand miles, lamp, hooter, accessories; £33.—F.N. (England), Ltd., 106, Gt. Portland St. [X6363]

3h.p. 1911 Rover, F.E., first-class condition, new tyre back, 2,000 miles; £35.—Holmewood, Capal Rd., E. Barnet, N. [X6293]

TRIUMPH, 1911, free engine, perfect condition, little used, new back tyre and tube; cash £36.—Gibson, 42, Park Lane, Croydon. [X6218]

PREMIER Motor Cycle, 3h.p. twin, late 1910, condition as new, will take sidecar; £25.—32, Durlston Rd., Kingston-on-Thames. [X6051]

ZENITH, T.T., 3h.p., practically new, Gradna gear; £38, or near offer.—C. Gardner, 12, St. Anthony's Av., Eastbourne, Sussex. [X6036]



## MOTOR BICYCLES FOR SALE.

- TRIUMPH, 1910.** perfect condition, just overhauled, lamp, horn, new Dunlop belt; £32.—54, Old Park Rd., Palmer's Green, N. [6254]
- 2 1/2 h.p. De Dion, Amie h.b. carburetter, spring fork** 24 and seat pillar; seen any time; £10.—36, Stroud Green Rd., Finsbury Park. [6260]
- TRIUMPH, 1912, F.E.,** new August, absolutely new condition; any trial; £45, no offers.—Harvey, 47, South Lambeth Rd., S.W. [X6376]
- 2 1/2 h.p. Peugeot, h.b.c.,** new tyres, bars, and lamp, excellent condition; £10; appointment.—Bexfield, 195, Sixth Av., Manor Park. [6007]
- 2 1/2 h.p. Rex, late 1909, mechanical, new Dunlop tyre,** accessories, fast and reliable; £22.—Bedford, Churchfields, Horley, Surrey. [6029]
- 3 h.p. Minerva, h.b.c.,** new Michelin tyres, B. and B. sound running order; £8/10.—6, Broomwood Rd., Wandsworth Common, S.W. [6028]
- 8 h.p. Bat-Jap, Bosch, B. and B.,** Whittle, spring frame, lamp, horn, condition perfect; bargain, 32 gns.—67, Mill Lane, West Hampstead. [X6436]
- TRIUMPH, F.E., 1912,** quite new, with accessories; taken for debt: what offers for cash?—Green, Wayside, Golder Green Rd., N.W. [6298]
- 5-6b.p. Rex, 1908,** splendid condition, spare belt and valves, new Dunlop studded back, all accessories; £22.—35, The Avenue, Kew. [6183]
- 5-6h.p. Rex de Luxe (late 1909), 2-speed, free engine,** good condition; £26; with sidecar £30.—Bedford, Churchfields, Horley, Surrey. [6030]
- 2 1/2 h.p. Motor Cycle, tyres and everything in good condition,** dry cell ignition; £8, or offers.—A.F., Long Meadow, Bovingdon, Herts. [6247]
- 2 1/2 h.p. Zedel, very low, £10; 2 1/2 h.p. in good order,** £26; exchange two for higher power; frame wanted.—30 Eghinton Rd., Bow. [6190]
- REX de Luxe, brand new mouth ago, twin, 2-speed,** only used short tour; £45; single 2-speed considered.—56, Riverview Grove, Chiswick. [X6318]
- RUDGE, 1912, standard, splendid condition; £30;** wanted for natural reasons; trial any time.—A.F., 20, Lancaster Rd., Wembleton. [X6228]
- P. and M., 1911, October, perfect condition, Kemp-** shall tyres, spares; expert examination invited.—Taylor, 44, Deodar Rd., Putney. [6270]
- BRADBURY, 1912, 3 1/2 h.p., lamp, generator, horn,** spare valves, plug, tyres as new; £35, offers.—Tadgell, Maple Terrace, Mitcham. [6231]
- TRIUMPH, 3 1/2 h.p., 1906, B. and B., new tyres and** belt, excellent condition; £18/10, or nearest offer.—118, Portobello Rd., Notting Hill. [6252]
- SCOTT, 1912, brand new, just arrived, also Morgan** and P. and M.; offers or exchanges wanted.—Pepper, Market Hill, Royston, Herts. [6225]
- 2 3/10.—2 1/2 h.p. Rex, Amie carburetter, h.b.c., very low** machine; exceptional offer.—Figgins, 15, Boxworth Grove, Richmond Rd., Barnsbury, N. [6200]
- 1 1/2 h.p. F.N. Lightweight, new tyres, engine just re-** bushed, Bosch mag.; £15, or nearest.—Butler, Handel House, Northwood, Middlesex. [6219]
- EAGLES.—N.S.U., 3 1/2 h.p., Model de Luxe, late 1911** model, latest improvements, spring frame, N.S.U. 2-speeds, free engine; £34/10. [6200]
- EAGLES.—Lincoln Elk, 3 1/2 h.p., 1911, Bosch mag.,** Druids, B. and B. carburetter, all accessories; £18. [6200]
- EAGLES.—Triumph-Jap, 2 1/2 h.p., modernised frame,** spring forks, B. and B. carburetter, accumulator ignition; £8/10. [6200]
- EAGLES.—N.S.U., 3 1/2 h.p., single-cyl., new last June,** mag., 1911 spring forks, new condition; £21. [6200]
- EAGLES.—N.S.U., 4 h.p. twin, 1910, Bosch, m.o.** valves 1911 spring forks, N.S.U. 2 speeds, free engine; £28/10. [6200]
- EAGLES.—N.S.U. 6 h.p. Twin, 1912 model, latest** improvements, purchased in July, 2 speeds, free engine; £50; as new. [6200]
- EAGLES.—N.S.U., 3 1/2 h.p., popular model, new last** June, as new, mag., 1911 spring forks, adjustable pulley, new Dunlop belt, Palmer cord tyre; £24/10. [6200]
- EAGLES.—Motosacoché, 1910, Bosch, free engine,** Druid forks, Whittle belt; £16. [6200]
- EAGLES.—Immediate delivery from stock of the** famous N.S.U. 2-speed gears with free engines, from £5/15, for Triumph £6/15, for Bradbury £7; trade supplied. [6200]
- EAGLES.—We have a few brand new 3 1/2 h.p. 1911** N.S.U. 35x88 Model de Luxe, just delivered, fine machines for sidecar work, Bosch mag., 1912 spring forks and other improvements, finished in latest style, complete with stand, carrier, tool case, full set of tools, £37; N.S.U. 2-speed gear £5/15 extra; Millford Herald sidecar with No. 1 torpedo body, £7/15 extra; deferred payments, exchanges entertained. [6200]
- EAGLES and Co., High St., Acton.—N.S.U. West** London District Agency. Liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X6414]
- BRADBURY, 3 1/2 h.p., 1911, splendid condition, acces-** sories, new Dunlop belt; £30. — Armstrong, 53, Rosebery Rd., Gillingham, Kent. [6139]
- TRIUMPH, 1912 T.T., perfect condition, spares;** £40; seen by appointment.—Hallows, 75, Lambeth Palace Rd., London, S.E. [6133]

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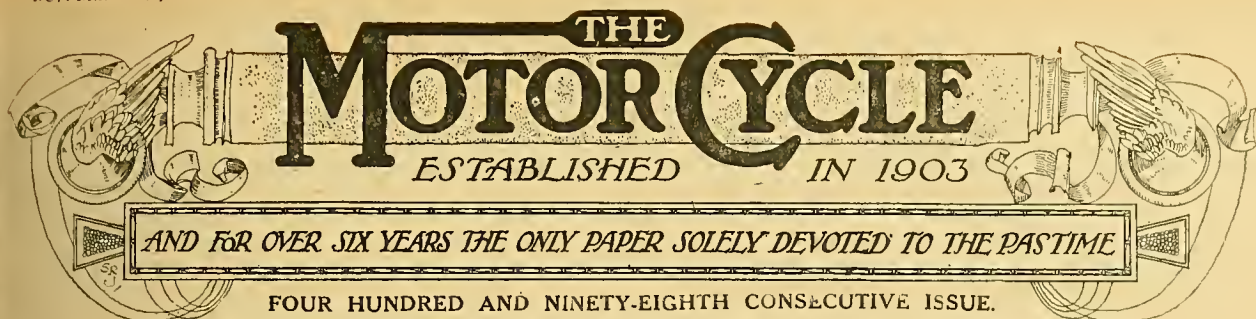
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## MOTOR BICYCLES FOR SALE

- 11.—3 1/2 h.p. Bat, low, fast, reliable, footboard** and B., splendid climber.—Wheeler, 85 Avenue, Bruce Grove, Tottenham. [6254]
- 1912 Humber Lightweight, 2 1/2 h.p. twin, Armstr** speed, free engine, lamp, horn, mirror; S.B.P., Sidco, Berkhamsted, Herts. [6254]
- TRIUMPH, 1909,** just been overhauled and red new back cover, spare valve, horn, and w £27.—50, Fitzjohn's Av., Hampstead. [6254]
- INDIAN, 5 h.p., 1911, clutch model, excellent** tion and very carefully used; £39, or near off. E. Taylor, 17, Taviston St., London, W.C. [6254]
- 1911 Clutch Triumph, perfect; any exami** Autoclisp lamp, horn, whistle, new be gns.—Write, 28, Wellesley Rd., Chiswick. [6254]
- 1911 Douglas, splendid condition, little used,** unpunctured, tools, spares; £28.—Phone 0 Tilbury.—Westwood, 62, High St., Grays. [6254]
- MOTOSACOCHE, 1911, lamp, spare belt, e** condition, good as new; £12/10. — Box 1 The Motor Cycle Office, 20, Tudor St., E.C. [6254]
- 1909 Triumph, Mahon F.E. clutch, Whittle** lamp, horn, and generator; £25.—Apdy, Bevis, Victoria Av. (next G.E.R.), Southend. [6254]
- 1912 Rudge, F.E., also a Rover; either woul** for new; £15 off new price; accessories give —Bunting, Motor Exchange, Wealdstone. [6254]
- IVI-PRECISION, 3 1/2 h.p., Villiers, F.E., Dnalo** and belt, X'Fall saddle, just delivered, new den; £46.—18, Kluver Rd. South, Sydenham. [6254]
- 2 1/2 h.p. Clement, extra low, Brown and Barlo** 2 justable pulley, tyres and belt new, running £7/10, or offer.—106, Trafalgar Rd., Old Kent Rd. [6254]
- TRIUMPH, 1912, 3 1/2 h.p., free engine, model; f** delivery £55, cash, or deferred payments. Barker and Co., Kensington High St., W. [6254]
- PHOLON and Moore, Ltd., 4, Percy St., W.** several 2nd-hand P. and M.'s for sale; part on application, or can be seen at above address. [6254]
- TRIUMPH, 1910, free engine, tyres and machi** fact condition, accessories; inspection invited —Sholl, Sudbury Lodge, Park Hill Rd., Sidcup. [6254]
- INDIAN, 7 h.p., 1912, purchased May, been ver** fully used, tyres like new and unpunctured, £54.—Laurel Cottage, 112, Hatfield Rd., St. A [6254]
- 2 1/2 h.p. Mecanique, 1912 Brown and Barlow,** frame, re-enamelled, Palmer tyres; £6/10; gain.—Simmonds, 135, London Rd., Boxmoor, [6254]
- NEW Hudson, 3 1/2 h.p., 3-speed, 1911 1/2 machi** new, cost £67/10, with speedometer, Lucas etc.; take £42.—65a, Rosendale Rd., West Durr [6254]
- BAT-J.A.P., 5 h.p., special light model, 1911, fas** portable, complete tools, spares, electric head as new; £33/10.—259, Beckenham Rd., Becken [6254]
- 1912 3 1/2 h.p. Chater-Lea, Bosch, B. and B., W** Palmers, Lycetts, not ridden 400 miles; £4 or exchange modern lightweight.—15, Baythorne St. E. [6254]
- LADY'S Model 2 h.p. Humber 1912 Lightweight** strong 3-speed, hardly used; cost over £50 1 months back, £40.—H. Taylor, 17, Taviston St., L [6254]
- TRIUMPH, 1911, T.T., complete with all acces** in exceptionally fine condition and new machine; £37.—Croucher, 80, Southlands Rd., B Kent. [6254]
- TRIUMPH, 1912, standard, only done 1,500** beautiful condition, new lamp, generator, and 39 gns.—Bromley Motor Works, Masons Hill, B Kent. [6254]
- HUMBER, 1911, 3 1/2 h.p., 2-speed, just been rel** excellent sidecar machine, and in fine con £34.—Bromley Motor Works, Masons Hill, B Kent. [6254]
- ARIEL, 1912, 3 1/2 h.p., free engine, var. gear,** pressor, 2,700 miles, excellent order, car £39.—Lieutenant Taylor, Eastwell House, Lexde Colchester. [6254]
- NEW Hudsons from 47 gns. or 67/- monthly;** from £40, or 55/- monthly; all models stock changes.—Lamb's Motor Stores, 151, High St., thamstow. [6254]
- DOUGLAS, K. 1911, 2-speed, and accessories;** Douglas, L. 1912, 2-speed, June machine, accessories, £45; Ariel, var. gear, grey, shop-soil duced to £46/10; Brown lightweight, shop-soil New Hudson, Model 31, 3-speed, shop-soil, red £54/17; several smart sidecars going cheap, from to 12 gns.; any may be had on easy payment as desired.—Lamb's Motor Stores, 151, High St., W stow. [6254]
- 2-SPEED 3 1/2 h.p. (April, 1909) Rex de Lux** gear, etc., everything splendid condition; no cash needed, what offers.—14, Bushey Rd., Harl Middlesex. [6254]
- HUMBER, 1912, 3 1/2 h.p., 2-speed, free engine,** starting, lamp, generator, horn, watch, reflex £43.—Letters only, Broadley, 51, Earl's Court S don, S.W. [6254]
- BEST Offer over £37.—1912 2 1/2 h.p. Premier,** fine, 3-speed, lamp, horn, and spares, or miles, unscratched; seen any time.—Turner, 137 St., Acton. [6254]





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UNITED STATES.—The International News Agency, New York.

CANADA.—Gordon and Gotch, Ltd., 132, Bay Street, Toronto.

AUSTRALIA.—Gordon and Gotch, Ltd.; Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania).

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### Motor Cycle Taxation.

IT is distinct encouragement to us in our campaign against the proposed new system of motor cycle taxation to receive by every post batches of our petition forms duly signed by readers. Even on the first day after publication of our last issue some hundreds of forms arrived, many filled to the last line with the names and addresses of those who, with us, are ready to show their disapproval of the unfairness of the suggested taxes. We have already given examples of the unjust system proposed. It is absurd that a sidecarist should be called upon to pay as much as the owner of an 11 h.p. motor car weighing over a ton and capable of carrying five passengers. The comparison is almost too preposterous to deserve consideration by reasonably minded persons. Another phase of the matter has been brought home to us by one or two letters received with the petition forms. Workmen employed in motor cycle factories are in fear that their positions may be made insecure should the proposed taxes become law, and this applies to many thousands, especially in the Midlands.

To return to a previous pointer of ours, viz., the second-hand machine of ancient origin which the Motor Car Taxation Committee have entirely ignored, a number of riders point out to us that their mounts are entirely out of date, were bought at a bargain price—the most they could afford—and if the new taxes are passed it will mean that the machines are on their hands, for a £3 3s. tax is beyond their means. It seems incomprehensible that these important matters should have been ignored.

An out-of-date twin-cylinder sidecar machine in running order is purchasable at less than £20. An owner of a motor car costing anything up to £400 would pay the same tax if the Taxation Committee's proposals were adopted. Many other examples of the iniquity of the proposals could be quoted *ad lib.*, but they should be patent to anyone who considers the matter intelligently.

We leave our readers to show their disapproval of the suggestions by their signatures on the petition forms issued last week. We ask that they be forwarded to us promptly, as action must be taken at once and determinedly if success is to be attained. Prospective as well as actual motor cyclists may sign the form, also workmen employed in motor cycle factories, garages, etc., who are likely to be affected should the new rates become law.

We refuse to believe that those who have recommended the increase can have foreseen the injustice which they were doing to motor bicyclists, sidecarists, and men engaged in the trade.

### Growing Favour of the Twin Engine.

IT is more than probable that the year 1913 will see a great increase in the number of twin-cylinder motor cycles; there is, in fact, every likelihood of a twin-cylinder boom. Of course, the large twin has been with us for a number of years, and the lightweight nearly as long, but the medium-powered twin machine has up to the present made practically no headway against the 500 c.c. single-cylinder.

Only a few years ago a 500 c.c. single was held to be the equal of a twin-cylinder machine of a capacity of 750 c.c., or half as much again, but thanks to Tourist Trophy Races the twin has received the attention it deserved and has been developed in efficiency. This year, for instance, the twin had so increased in efficiency that it competed against the single on equal terms and won both senior and junior races. Then, again, the power of the lightweight has increased, and, with the addition of a variable gear, the machine has now become a medium weight, which, except for the fact that it is not advisable to attach a sidecar, will equal the performance of the 500 c.c. of two years ago.

Evenness of torque, smoothness of running, excellent acceleration, and the absence of vibration are among the advantages of the twin-cylinder engine. The added complication of an additional cylinder deters many possible buyers, but, after all, this complication is by no means as serious as it appears. It is, of course, rather more trouble to take down two cylinders for cleaning purposes than one, not only because there are two instead of one, but because the nuts are generally rather more inaccessible; there are also double the number of valves to grind in and pistons to scrape. On the other hand, the presence of a second cylinder is often a help to the diagnosis of trouble in the event of an involuntary stop. Another point worth noting is that a twin is much more easily silenced than a single of equal capacity for reasons explained on another page.

Then again, owing to the evenness of torque, much less strain is imposed upon the transmission and gearing, for two light impulses are substituted for one powerful one, the whole machine, including the tyres, reaps the benefit, and the problem of chain drive with its increased efficiency is very much simplified.



## LADY MOTOR CYCLISTS ON TOUR.

Brief account of a tour to the Lake District by two Brighton ladies.

**P**ARTICULARS have reached us of an ambitious tour to the Lake District recently undertaken by two Brighton lady motor cyclists. Miss Eva Plumbridge and Miss E. S. Mortimer, both riders of  $2\frac{3}{4}$  h.p. twin-cylinder two-speed Douglas machines. It is certainly a striking proof of the absolute dependability of the modern motor cycle for two ladies to undertake such a long journey entirely on their own account, and as an incentive to other ladies to go and do likewise we give brief particulars of the roads traversed. On the first day Malvern was reached, a distance of 160 miles—quite a good start off. Near Swindon a delay was caused with Miss Plumbridge's machine by the magneto refusing to spark, the trouble being eventually traced to water in the contact breaker. It took nearly two hours before matters were set right.

From Malvern to Chester (ninety miles) was the second day's jaunt, and on to Ulverston (120 miles) the third day. Ulverston had been selected as the touring centre, and from here various trips were undertaken round the English Lakes, including Windermere, Coniston, West Water, etc., in all completing from 200 to 300 miles in this district. Part of the time a passenger was mounted on the carrier of one of the machines. The weather was not of the best, rain frequently falling heavily.

The run home to Brighton was *via* Burnley, Rochdale, Oldham, Southport—a trying ride if ever there

was one—and thence through the Peak district of Derbyshire to Warwick and Oxford, skirting London to Reigate, bringing the total mileage covered to nearly a thousand.

The two fair tourists exhibited great pluck in continuing the journey in face of adverse weather conditions. They were both struck by the interest taken in the motor cycles and the courtesy shown when passing through the thickly populated Lancashire district.

The little Douglasses again proved their worth. Except for the magneto trouble in Swindon, the only other delays were caused by two punctures and a slightly slipping clutch, due to oil working on to the clutch leather.

At Staines Miss Plumbridge unfortunately got a small piece of stone in her eye; whilst stopping here a lady showed her interest in a practical manner by providing them with tea and drying some of their wet clothes, which action was very much appreciated. The good Samaritan is, we understand, now contemplating

the purchase of a motor cycle. As regards hill-climbing the Douglasses behaved splendidly, and seldom required the low gear ratio. As to reliability, the result could hardly have been more satisfactory. The two ladies were able to manage their own mounts, outside assistance only being requisitioned to put right the rained out magneto.

We are indebted to Mr. F. F. Turpin, of Brighton, for the photograph reproduced.



Miss Plumbridge and Miss Mortimer, of Brighton, who recently toured together on their two-speed Douglas machines.



Group of members of the Uxbridge motor cycle club outside the Chaquers Hotel. The club was formed two months ago and already boasts thirty members.



# Occasional Comments

by "Izoni"



## Wanted, a Definition of Cyclecars.

How is it that in both the Scottish and English Six Day Trials a cyclecar was permitted to start which weighed well over 11 cwt. minus its passengers! One machine which received awards in the Taunton Trials weighed no less than 11 cwt. 2 qrs. 7 lbs., or 4 cwt. qrs. 7 lbs. over the A.C.U. limit of 7 cwt. If we make allowance for a huge tank capacity, this vehicle must either have carried a kit of spares and tools mostly in excess of those specified by the rules, or, alternatively, it must have weighed more than 7 cwt. ripped, or, again, the published weights are wrong. What has Mr. Loughborough got to say?

## Body Balancing on Cyclecars.

I must accept the assurances of several correspondents that body-balancing by passengers on bad corners is not really necessary. In defence of my paragraph on the subject I can only state that I have watched several famous cyclecars coming in the principal trials of the season, and that I have seen a great deal of this body-balancing done by expert drivers and their mechanics. I do not imply that it is indulged in when turning sharp street corners at low speeds, but I cannot disbelieve the evidence of my own eyes, and whether it is necessary or mere "swank" there has been plenty of it to be seen in negotiating twisty ascents and descents at illegal speeds.

I especially remember one occasion when a very nervous driver was presumably catching up lost time down a long and tortuous pass. His passenger's head was a good two feet outside the track of the car on more than one corner.

## Difficulties about Delivery.

I have received a red hot letter from a reader, who denounces the trade in unmeasured terms for advertising goods which they cannot deliver. As I find myself largely out of sympathy with his diatribe, I must deal with it at some length. There is a good deal of excuse for the fact that articles are often described in the Press which are not immediately obtainable from stock.

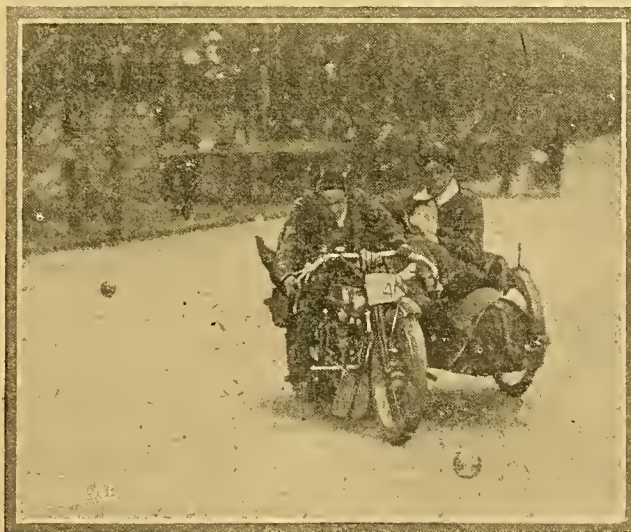
Sometimes an impoverished but clever inventor designs some admirable notion. If it were not described and illustrated the notion would be stillborn. A little judicious publicity interests financiers and results in the article being commercially manufactured on a large scale. At the present moment I know of complete motor vehicles which are being advertised on this system. The inventors have perhaps just sufficient capital to manufacture ten samples, and to advertise them. They have sufficient confidence in their goods to spend their tiny capital to the last farthing in the hope of attracting a financier, but in the meantime they can only accept ten orders, and can only supply those orders very slowly.

Such methods may be irritating to the wideawake advertiser, who spots the good thing, but it is hard to

devise any other plan by which the invention could obtain a footing. In other cases, the article is properly capitalised, and the factory is in full working order, but the manufacturer of some part, or the contractor who is pledged to deliver certain raw materials, fails to deliver punctually, and the advertisers are hardly to blame for their short stock. At one period this spring a certain factory had over £10,000 worth of motor cycles standing in their stockroom, all ready for the road, except that not one of them had a magnetto! In another case the contracts for tyres or tubing or castings or some other essential are not punctually fulfilled. The whole process of supply is far more complex than my correspondent appears to realise. He may take one thing for granted, viz., that every manufacturer is burning with eagerness to supply as great a quantity of his wares as possible in as short a time as is practicable; and consequently, wherever delays and disappointments are experienced, there is some real and vital reason at the back of things. In some instances, of course, the entire factory output is contracted for by agents, and immediate delivery may be obtained from large dealers, or from provincial agents who have ordered more goods than their local clients require.

When we fail to obtain immediate delivery of the articles we fancy, we ought to feel a very considerable sympathy for the unfinanced inventor, for the small firm whose trade is hampered by lack of capital, and for the works manager of the big factory who is hung up because his supplies of raw material are slow in coming through.

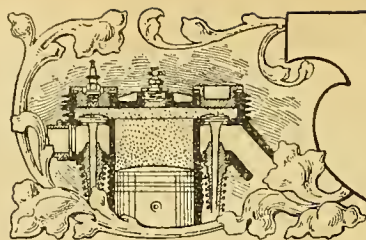
What annoys us is in reality far more aggravating to a number of persons behind the scenes.



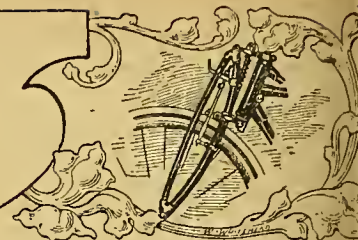
GYMKHANA AT THE STADIUM.

The balloon competition. A. Greenhill (Zenith and sidecar) is about to burst one of the balloons by driving the front wheel over it.





## SILENCERS.



IT is a rather singular thing that the silencing of explosion engines seems to have received comparatively slight attention from scientists. In the case of very large internal combustion engines, such as are used for driving factories and electric generating stations, the problem of reducing noise is very considerably simplified by the fact that there is always plenty of room available, and, as we shall see later on, space is a matter of great importance. That is to say, a large chamber can be let into the ground outside the wall of the power house, and the exhaust gases led direct into that.

It is, of course, true that, during recent years, great strides have been made in quietening the engines of motor cars, but here again space has never been so restricted as in motor cycle design. On the other hand, it is an undoubted fact that this quietening has been largely effected not so much through the proper handling of the exhaust gases as through better design of valve and gear mechanism and a general boxing up of moving parts. For quite a number

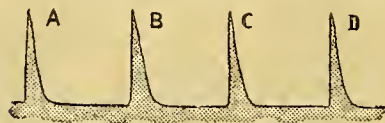


Fig. 1.

of years now, the actual silencing of a car engine's exhaust has been quite a simple matter. It is not so, however, with the motor cycle; but why this should be so it is hard to say.

Motor cyclists as such are surely not less sensitive to noise than cars users, yet it is quite obvious that they are quite content to put up with something that the latter would not tolerate for a moment.

### Why Motor Cycle Engines are Noisy.

Two explanations for this present themselves. The first is that for some reason or other motor cycle manufacturers, generally speaking, have been rather slow in producing a really silent machine, and the second is that the motor cyclist, once out on the road and travelling at a fair speed, is not much concerned as to the amount of noise he is making, because he leaves the greater part of it behind him. That the noise made by the majority of motor cycle engines constitutes a nuisance seems to be an undoubted fact, but hardly more so than that the actual user of the machine is rather less to be blamed for this state of affairs than the manufacturer.

After all, the buyer must put up with what he can get; this being always one of the worst features of the period of high commercial prosperity which is at present being enjoyed by the industry as a whole. On the other hand, it is quite impossible to excuse a certain section of motor cyclists who do honestly enjoy

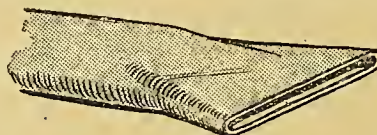


Fig. 2.

making themselves heard over a whole diocese, but, one may reasonably ask, is it fundamentally their fault when silencer design is so bad that the mere kicking open of a cut-out will give the speed merchant that extra five or seven more miles an hour that he is so pardonably keen on?

First and last, therefore, the manufacturer should bear the brunt of the blame, the only thing that can be said on his behalf being that he has undoubtedly got a rather difficult problem to solve.

### The Cause of the Noise.

If a manometer, or pressure gauge capable of reading small values, were placed close to the open exhaust of a single-cylinder engine, it would register normal atmospheric pressure during three strokes of the piston, and a comparatively high pressure when the exhaust gases were being ejected. It is these sudden changes in pressure which cause the noise; and it is important to notice that it is the change and not the pressure itself which is responsible. In other words, if the pressure of the exhaust gases were constant at the point at which they impinged upon the atmosphere, it would make very little difference whether they issued at a high pressure or a low one.

Noise is produced not by the pressure but by its inconstancy. Before proceed-



Fig. 3.

ing any further it is necessary to make it quite clear that the explosion of the charge inside the temporarily sealed cylinder is quite inaudible until the exhaust valve is opened. This is a fairly obvious thing when one comes to consider it reasonably, and it is pointed out merely because the suggestion has been not infrequently made that the reason

why air-cooled engines are generally noisier than water-cooled ones was that in the case of the latter the thickness of cylinder wall and jacket helped, as were, to keep the noise in, whereas the thinner wall of the air-cooled cylinder let it through much more readily. Dynamometer exploded within a very strong hermetic chamber gives rise to a noise that is just perceptible, and this is most probably due to the sudden setting up of internal stresses in the material of the chamber itself.

### The Ideal Silencer.

Fig. 1 is a diagram giving a rough idea of the change of pressure at the exhaust port of a single-cylinder engine. The question now arises—how to get rid of the sharp peaks A, B, C, and D, or, you like, how to chop the tops of mountains off and utilise them for filling up the valleys. One point may now be noticed in connection with this analogy, and that is, that when the unevenness of pressure has been flattened out, the resulting constant pressure must be something higher than normal.



Fig. 4.

The ideal silencer is clearly the instrument that will enable an intermittent pressure of gas to enter at one end and issue forth at the other in a perfectly steady stream. Now, if space were of account the whole trouble could be overcome at once by leading the exhaust gases into a large chamber, many hundreds of times larger in capacity than swept-out volume of the motor cylinder, and allowing them to emerge through quite a small pipe. It will be readily understood that the addition of such a volume to what is already a very large volume of gas would, in this hypothetical case, lead to a very small net increase in pressure, and the larger the chamber provided, the smaller would this increase of pressure be. Unfortunately, motor cyclists, it is to be feared, would rather object to carrying a fair size gasometer on their machines, so the above method has to be dismissed as impracticable, although its principle must essentially be adhered to.

The next most obvious method is to take advantage of the fact that gas, however light it may be, has inertia, and is also elastic. It will be realised that when the exhaust valve opens the gases are not only open at a considerable pressure but that they are also (as a consequence) forced through the exhaust pipe at a very high rate of speed. Hence it is obvious that, for silence to be maintained,



bers.—

and, this series of sharp impacts must be levelled down. This can be done by erecting a perfectly straight pipe of uniform bore and of very great length to the exhaust, and the action will then be as follows:

### Effect of Long Exhaust Pipe.

Assuming that the air contained in the pipe is quite stationary and undisturbed, when the exhaust valve is opened the gases will accelerate it towards the tail end. Now, if instead of air in the



Fig. 5.

if there were a series of balls these would be shot out at the one end just as fast as the gases were shot in at the other. Air, however, or any other gas, being compressible, cannot transmit an impulse in this manner, being restrained from doing so not only by its own inertia (the more important factor), but also by its friction upon the internal walls of the pipe. In other words, that part of the column of air in the pipe nearest the exhaust valve will be highly compressed, and, consequently, will lose velocity, so that the part of the column of gas next to it will not be so rapidly accelerated as the first one was. At the same time the inertia of the gas column will again produce slight compression in this part of the column, so that further and further on the acceleration will be less and less.

Provided that the pipe be of sufficient length, therefore, rapid changes of acceleration at one end will be converted to a constant average velocity at the other, and accordingly the pipe will act as a silencer. But it would need to be a long one were it not that the exhaust gases are hot. This fact at once simplifies the problem, because it means that the speed can be rapidly reduced by the effect of reducing the volume by cooling.

### Cooling the Gases.

It will hardly be required of the obvious fact that if a certain volume takes a certain time to pass down a pipe, half the volume will pass down in the same time at half the velocity. The effect of this is to shorten the pipe required by an enormous amount, but, unfortunately, not enough to allow it to give a perfect silencing action on a single cycle, unless thirty or forty feet of pipe hanging behind is considered a matter of no moment! Incidentally, it

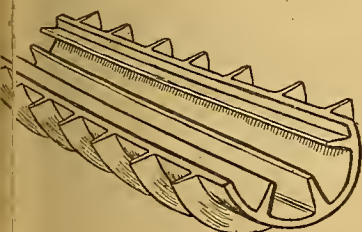


Fig. 6.

is necessary to point out that a device of some kind would need to be fitted even to this enormous exhaust pipe in order to break up the sound waves. If it were of perfectly plain and uniform bore, the waves would be transmitted down it uninterrupted. The waves, however, can easily be broken up by the use of a fan-tail end, see fig. 2, or by the interposition of a small "expansion" box, as shown in section in fig. 3, or by allowing the gases to emerge through small holes, as illustrated in fig. 4, or even by reducing the diameter of the pipe so as to provide a conical jet, fig. 5.

It will be readily understood that, provided the velocity of the gases has been reduced to a constant one, and the volume also reduced by cooling, quite a small final orifice may be used without giving rise to "back pressure."

### What is Back Pressure?

Of this phrase some explanation is needed, as I believe it is not generally quite properly understood. "Back pressure" is simply the resistance which a gas exhibits to pass round sharp corners or narrow constrictions when travelling at a high rate of speed. The power thus absorbed by any given resistance varies as the cube of the speed of the fluid, so that it will very easily be seen that to insert any form of constriction or baffle,

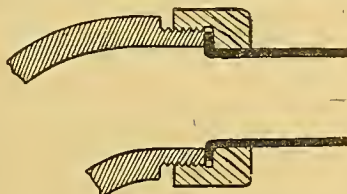


Fig. 7.

or sharp corner, close to the exhaust port is simply to waste power, since near this point the gases are travelling at an enormous rate. Consider the case of an engine in which the exhaust port area is one-eighth of that of the cylinder bore. The terminal pressure at the commencement of the opening of the exhaust valve will be roughly thirty pounds to the square inch, that is to say the cylinder will contain twice as much gas as it would hold at normal temperature and pressure. Now, with the engine revolving at 2,000 revolutions per minute, and the exhaust valve being open for the whole force piston stroke, it is clear that the speed of the gases through the exhaust port will be sixteen times the speed of the piston on the exhaust stroke, because there are two volumes, and the port is of one-eighth the area of the piston. An engine 85x88 mm. bore and stroke, 500 c.c., at 2,000 revolutions per minute has a piston speed of, roughly, 1,200 feet per minute, so that the exhaust gas speed is 19,200 feet per minute, or 216 miles per hour. I admit I have taken a rather favourable, perhaps extreme case, but it serves to make one realise what sort of speeds are being dealt with.

And, if it does nothing else, it at least indicates the utter futility of trying to test a silencer for back pressure by blowing down it—quite a common practice which has been indulged in from time immemorial—or, rather, ever since motor cycles have been made.

### Speed of Gases at Silencer End.

Assuming that the silencer, of whatever kind that is used, reduces the gases to a constant velocity, and likewise their volume by half, it is easy to see that their issuing speed will only be some 27 m.p.h.—one-eighth of their initial speed, since the volume is half, and the final exhaust port is open four times as long as the exhaust port. From this it is



Fig. 8.

simple to calculate that a baffle plate or other resistance placed close to the engine end of the exhaust pipe will absorb 512 times as much power as when it is placed at the farther end.

Before proceeding to deal with actual silencing devices, it is necessary to turn aside to consider one or two points which have a bearing on the matter.

Firstly, comes the effect of increase of the number of cylinders. It is obvious from what has been said above by increasing the number of cylinders which (this is important) exhaust into the same silencer, silence will be far more readily attained for the reason that the impacts upon the gases already in the silencer will follow one another with greater rapidity, and in consequence the acceleration of these gases will be far more steady. In other words, four cylinders are more easily silenced than one cylinder equal in size to one unit of the four, and of course, much more so than a single-cylinder engine of the same power or capacity.

### A Multiplicity of Cylinders Easier to Silence.

If an infinite number of cylinders were possible no silencer at all would be needed, but only a short pipe from which the exhaust gases would issue forth at a perfect constant, although prodigious, speed; that is to say, all the "peaks" would be removed from a pressure diagram taken at the terminal end of the

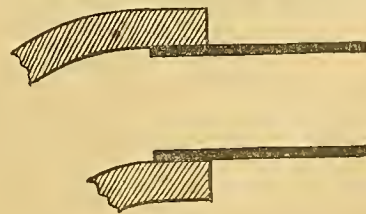


Fig. 9.

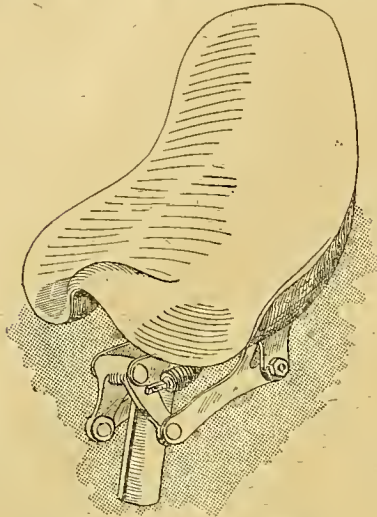
pipe. The four-cylinder F.N. and the twin-cylinder two-stroke Scott (four cylinders, in fact) are very naturally quiet machines, but the silencers used on them would be far less effective if attached to a single-cylinder motor of the same capacity.

The concluding instalment of this instructive article, by W. G. Aston, will appear in our next issue.



## XL'ALL SADDLES.

Two new saddles have been produced by XL'All, Ltd., of Moseley Street, Birmingham, as additions to their present models. The first is similar to their present pan seat, but is extended upwards at the rear to form a back rest, the whole being padded in their usual style. In the second case the saddle is as usual, but the levers and framework

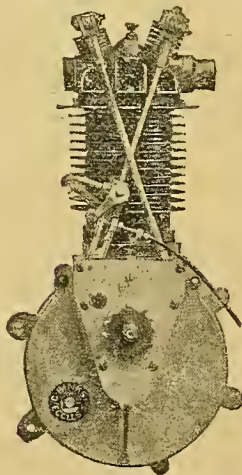


New "XL'All" combined anatomical seat and back rest.

are made in a considerably neater way, there being only two stampings in the whole construction. The system also allows of a lower saddle position, as the stampings can rise into the forward peak of the seat.

## A BINKS ENGINE.

We illustrate herewith a novel engine designed and made by Charles Binks, Ltd., of Eccles. Mr. Binks does not intend to market the engine, but constructed it with the idea of discovering the maximum power obtainable from a



500 c.c. air-cooled engine. We hear that the results already obtained have been very satisfactory, and have been promised the use of a motor cycle fitted with this engine so that we may form our own opinions. The greatest difficulty experienced to date has been to make a cylinder strong enough to withstand the terrific force

of the explosion, the compression being exceptionally high. The novel arrange-

ment of the overhead valves will be noticed. They are set at an angle of 45°, and so that an even thrust may be obtained the tappet rods are crossed. The engine has been built for speed only, and consequently the reciprocating parts are extremely light.

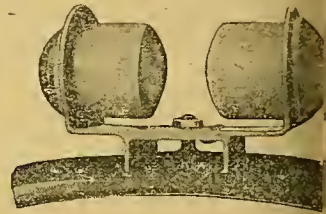
## A RUN ON A LEA-FRANCIS.

We experienced a most enjoyable run of about seventy miles one day this week on the new Lea-Francis motor bicycle, which was described and illustrated in detail on August 29th, pages 934-5. Rain fell heavily at the start, but it made no difference to the L.F., and taking the shortest route to Edge Hill we averaged twenty-five miles an hour by Cowey speedometer, so as to arrive at the hill with a warm engine. We were told the machine would climb the hill on the top gear of 5 to 1, but as the road was wet and holding we were not surprised to find that a combination of a 13 stone rider and thick mud demanded a lower ratio. However, considerably over halfway was reached on top, and on the lower gear and with the throttle nearly closed the Lea-Francis went over the top with the greatest ease.

So much for hill-climbing. We will now describe our experience of the running of this machine from a touring point of view. The L.F. has been designed primarily for tourists and those who want to climb hills without rushing. Firstly, the twin-J.A.P. engine runs beautifully, and closely resembles a four-cylinder so far as evenness and balance are concerned. The engine weight, etc., is well forward, which improves the steering by distributing the weight better over the length of the wheelbase. The saddle position is comfortable, and the handle-bar position ditto; these, combined with springy wood footboards, add greatly to the pleasure of riding. The chain transmission must be most efficient running in oilbath cases; the chains are hardly heard, and the gear is quite noiseless. Special silencing renders the engine almost inaudible; the result is a quiet running machine, which attracts attention by its polite manners. By means

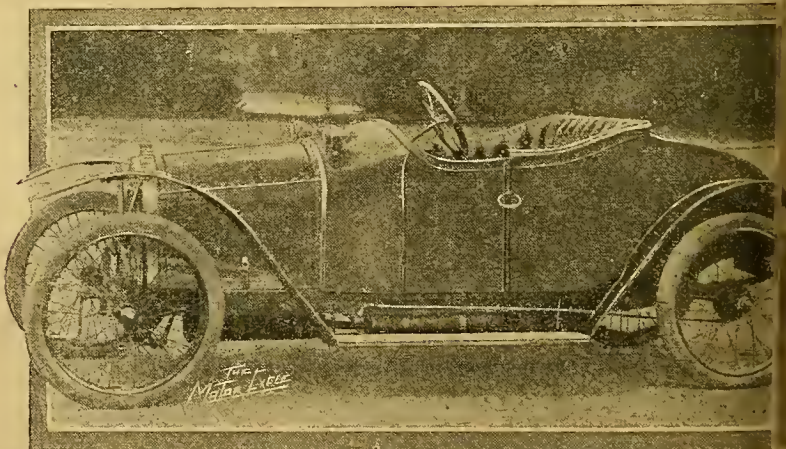
of a kick starter the engine starts once on the pilot arrangement of Senspray carburetter fitted to the machine, and accelerates very rapidly. Gear changing is easy, and once away the machine will average 25 m.p.h. with the throttle lever on hand practically closed. This proves the loss of power in gear and transmission very small, or the machine could average the speed it does with an engine of 60x76. 420 c.c. The maximum speed reached by the machine was 52 m.p.h., if the speedometer fit truthfully.

No noise arises from the chain and although the machine is a little rough for the engine power when compared with some other belt-driven models, doubt if its speed is appreciably reduced thereby, even up hill. The extra



Acting on the suggestion of a sidecar Lea and Francis, Ltd., Coventry, have a reflex light for sidecars which has a red rear light and a white front light, a good method of showing the full width of the sidecar both from front and rear providing light on the overtaking or oncoming vehicle sufficiently brilliant to illuminate the reflex device.

is also an advantage in some ways enables the machine to hold the better, and gliding better describes the motion of the Lea-Francis than anything else. Incidentally, we saw the rear wheel attached by means of the patented rear axle and solid wheel pin. Mr. time for the complete operation was only seconds. Fortunately we did not have to resort to this, but it is comforting to know that in the worst case of tyre repairs to know that the wheel can be dropped out in a minute, leaving the chain and wheel in position. For further details concerning it, we refer them to our issue of October 29th last.



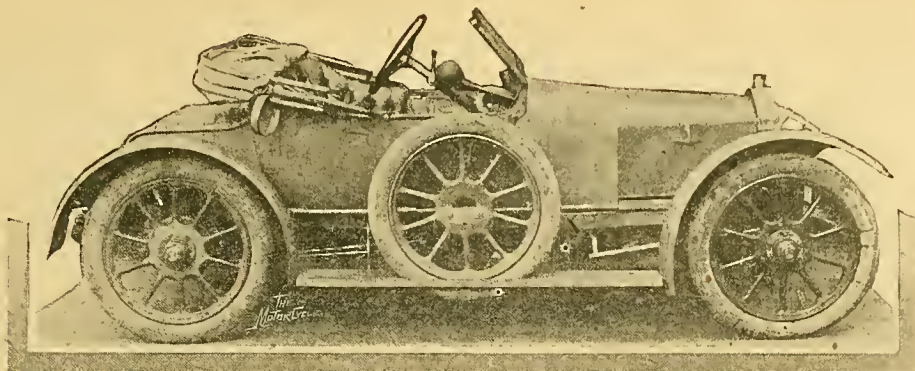
Latest French cyclecar, the "Baby," which is propelled by a 6-8 h.p. water-cooled Buchet engine, has four speeds and reverse. The frame is of pressed steel, and the steering by rack and pinion. The Central Garage have secured the agency in this country.



# A Test Run on the Singer Cyclecar.

From Four to Forty m.p.h.  
on top gear.

Consumption over Forty  
Miles to the Gallon.



If every Singer cyclecar which emerges from the factory is as good as the one we had the pleasure of testing during a week-end jaunt of 300 miles, we will have cause to complain, but we have every confidence in saying that future models will be better. Naturally, our trial of the machine in its raw state was not wholly free from trouble—indeed it would have been almost a miracle if a three day trial of a car in its chrysalis stage did prove a non-stop affair—but we were glad to record that the stoppages were such as could be comparatively easily overcome, and the ailments such as can and will be quickly remedied in the well-equipped works of the Singer Company.

A Claudel carburetter had been fitted the day before we took over the machine, and this was an immense improvement, for the engine would turn over slowly and immediately accelerate on sweeping open the throttle (which works on a quadrant in the centre of the steering wheel) without a suspicion of choking. We set out along the main Coventry-London Road and soon realised that in the Singer we were handling a lively little car as smooth in running as one could possibly expect a light car to be. The even torque of the four-cylinder engine and the excellently upholstered seats did much in fact to dispel an underlying notion of ours that no car of light weight could be called comfortable at speed. The fixed magneto ignition seemed to be no drawback at all, for never once did the engine show any tendency to kick back when starting, and yet a speed exceeding 40 m.p.h. is possible under favourable conditions. Braunston Hill and the main street in Daventry called for no change of gear. At Leedon we had occasion to make a halt and reverse, and in so doing the change speed levers seem to have not strained, for the gears were afterwards rather difficult to engage. An adjustment effected, the car ran merrily to St. Albans, *via* Dunstable, on top gear. Here we elected to stay the night.

## Low Petrol Consumption.

Although the Singer had run several miles before we took the wheel, we were agreeably surprised to find that the tank would only take an additional two gallons of petrol, which gives a consumption of over forty miles to the gallon—splendid for a four-cylinder engine of 1,000 cc. The engine was difficult to start from cold, due to the absence of a shutter over the air inlet. A rag stuffed in the hole soon set the engine buzzing merrily. The Great North Road was to be our testing ground this day, so after sundry trips in the morning, we struck out for Hatfield in the early afternoon, and

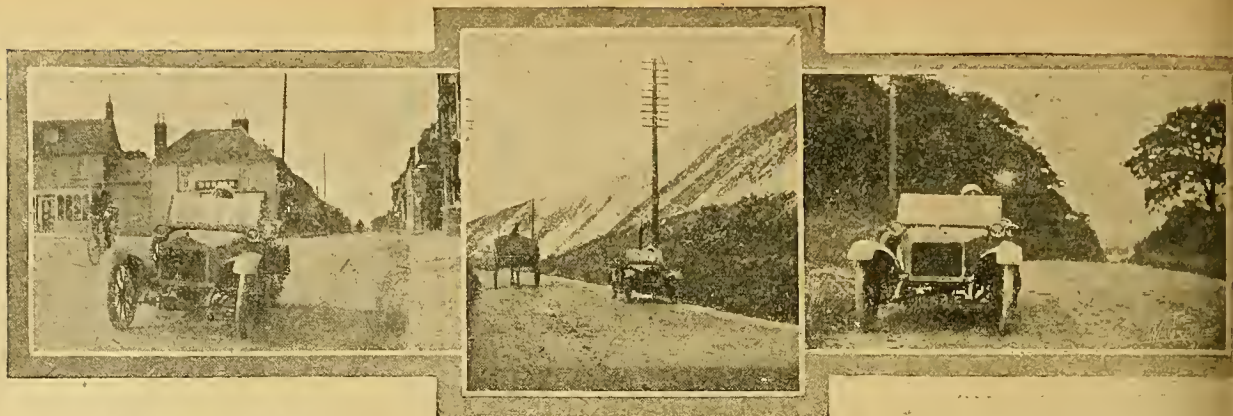
having now gained confidence in the machine we opened out more and found we could easily maintain a speed of 30 m.p.h. A bubbling at the radiator cap, however, caused us concern on hills; this, of course, will be got over by the adoption of a larger radiator. The wind was blowing from the east—direct on to the carburetter side. Whether this was the cause of the carburetter freezing we know not, but we had the first indication by a spluttering at the exhaust pipe outlet, and a gradual diminishing of power. We were at first inclined to ascribe the cause to a choked carburetter, but twenty minutes spent dismantling this revealed no cause for the stoppage. A swing at the handle and off the engine went. This happened on two other occasions—once outside Stamford in the dark—the symptoms being repeated exactly. The reason the engine started off again after standing for a time was due to the hot cylinders conducting heat along the induction pipe and thawing the frost. A shorter inlet pipe seems the obvious remedy, and this is receiving attention. It came on to rain when nearing Grantham, so we put up the hood and got along very cosily, winding our way through the crowds in the streets on top gear at little more than a walking pace. Gonerby Hill called for the second gear, but thereafter splendid time was made to Newark, for the moon appeared to light our track. We stopped here for the night, the afternoon run being over 100 miles.

## Up Bunny Hill on Second Gear.

Next day we set out for Coventry *via* Nottingham, Loughborough, and Leicester. A business call in Nottingham took us through the town, and again we were delighted with the way the car rolled along smoothly and practically noiselessly, except for a soft engine purr.

Bunny Hill was the most severe hill on our route, and this the Singer climbed mostly on top, calling for the second gear on the last steep stretch. We descended the hill again and repeated the performance, so no one need have fear of the hill-climbing capabilities of the Singer with a first gear in reserve. On one or two occasions we had opportunities of comparing speed with larger cars, and we think more than one owner was surprised when the little low grey car sped past with no other noise than a slight hum in the gears, and an exhaust as healthy and crisp as a Brooklands racer in the distance, this, of course, with the throttle open. Our last hundred miles had been as enjoyable as they could possibly be. In Leicester we stayed for tea, and on attempting to restart found the gear strikers





(1) In the five miles an hour limit at Fenny Stratford.

(2) The Dunstable chalk cutting on Telford's highway.

(3) At the top of Bunny Hill on the Nottingham-Loughborough Road.

had again become strained in some way. Nothing would induce the car to get off the mark, so we had to suffer the ignominy of pushing it to an adjacent garage, half the loafers in Leicester on our heels. A short delay and matters were put to rights, so we set out in the gathering gloom on our last trip. What a boon it is to be free of the worry of lubrication. The sump of the Singer is replenished each morning and the mechanical pump can be relied upon to do the rest.

#### Does an Engine run Better at Night?

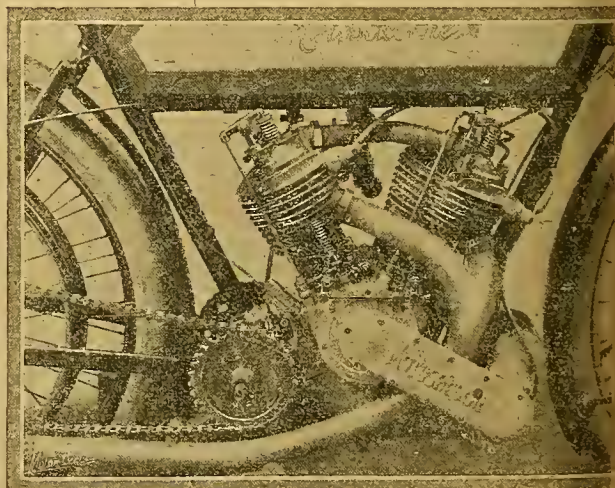
We answer the question emphatically, "Yes." The way the engine purred away, answering every movement of the throttle lever on hills or level ground, caused us to excuse it entirely for that push in Leicester. We should repeat that the machine was merely in the testing stage, it was the original model

we tried, and our *contretemps* will give the reader some insight into the work of a tester, though our remarks would have been considered a pleasant jaunt. Mr. Ma recognised the Singer cyclecar from the illustration published, and expressed pleasurable surprise at its build and small proportions; the photographs do not convey accurately an idea of its proportions. "But it is hardly a cyclecar," one or two remarked. May be not, but this is what amuses us. A certain four wheeler, which performed conspicuously in the 5 Days' Trials is accepted as a cyclecar without question yet the Singer is nearly 2 cwt. lighter! If people were governed more by facts than mere guesswork it would be better. The artillery wheels on the Singer have misled nine out of ten weight estimators. The Singer promises to be the centre of attraction at Olympia. It is a Rolls-Royce of cyclecars—and it won't be cheap.

## A New Motosacoche Departure.

A NEW experimental Motosacoche machine which has just arrived from the works was lately seen on Brooklands Track, when, we are told, it was unofficially timed to do seventy-three miles an hour. These figures show that the engine is a startling departure from former Motosacoche practice. It is a V twin of 750 c.c., fitted with overhead mechanically operated inlet valves. Both inlet and exhaust valves are of large dimensions, and the former are carried in a dome, consisting of a casting bolted on to the cylinder by three bolts. The inlet springs are external. The exhaust lifters are of the exterior type, and are coupled by an adjustable rod, so that both valves may be set to lift simultaneously or one may be made to rise before the other, allowing the machine to run on one cylinder only. The ignition is the latest type Bosch magneto, driven by enclosed chain. The pipe carrying waste oil from the relief valve is directed on to the chain running from the counter-shaft to the rear wheel. The exhaust pipes are of generous dimensions, and that from the rear cylinder joins that from the front close below the union nut, the final pipe extending to a point well in the rear of the machine. It must be clearly understood that this motor bicycle is purely experimental, having a short frame and being suitable only for track work. It is very light for its horsepower. A glance at the accompanying illustration reveals the extreme cleanliness of the crank case, which

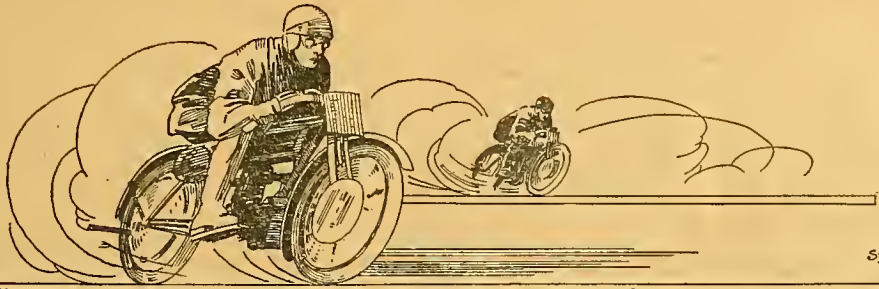
we are assured has not been cleaned since the machine underwent its preliminary tests on the track, while it will be noticed that the usual type of Motosacoche gear fitted to the chain-driven models is employed. The engine, which impressed us most favourably, we understand, mainly for sidecar and cyclecar work.



A big twin Motosacoche, rated at 6 h.p.



## QUESTIONS & REPLIES



S.R.J.

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Compression.

? I find that on turning my pulley backwards there is decidedly better compression than when the same is turned forwards. The piston rings are almost new and are a good fit. Can you suggest anything to explain this? —G.B.

Probably, in turning the engine backwards you find a slightly different resistance of the cams against the tappets and springs, and thus the compression seems to be greater, but this is really not the case.

### Chatham to Plymouth.

? I propose making a trip with my  $3\frac{1}{2}$  h.p. Bradbury and sidecar from Chatham to Plymouth. I want to put up for the night somewhere *en route*. Will you kindly tell me the best road to take, avoiding large towns, so that I can arrive comfortably on the second day? —F.A.R.

We should recommend the following route: Chatham, Wrotham, Riverhead, Westerham, Redhill, Reigate, Dorking, Shere, Guildford, Farnham, Odiham, Basingstoke, Andover, Amesbury, Hindon, Wincanton, Ilchester, Ilminster, Honiton, Exeter, Chudleigh, Ashburton, Plympton, to Plymouth. A good place at which to stop the night would be either Basingstoke or Whitechurch.

### Position of the Plug.

? I should feel greatly obliged if you would kindly furnish me with an exact explanation as to why you experience a loss of power by placing the sparking plug of a side-by-side valve engine, with ordinary magneto ignition, over the exhaust valve, in proportion to the power obtained by the plug being in the usual place, viz., over the inlet valve. I feel sure that this will prove a source of much interest to your readers. —N.A.G.

There are two reasons: (1.) When placed over the exhaust, the plug points are much more likely to get hot and cause preignition combined with a feeble explosion, as they have not the advantage of being cooled by the incoming gases. (2.) When placed over the inlet valve, the gas in the neighbourhood of the plug is purer and less contaminated by the residual exhaust gases from the previous explosion, hence a quicker explosion and consequently more power.

### Loss of Compression.

? I have lately had my engine rebushed and new piston and rings fitted. When I got the machine home from the repairers there hardly seemed to be any compression at all, but the repairer said that I should have to run it 100 or 200 miles, when the compression would be right. However, I have run it about 300 miles, and it will take me solo at about twenty miles per hour, but when I put the sidecar on the speed is painful—ten or twelve. Just after being rebushed it would not take any extra air at all, so I had a choke tube put in (none in before), and then it would take about half throttle and a half extra air, which was an improvement, but when the sidecar is fitted it wants three-quarter throttle and no extra air to give twelve miles per hour on the level. B. and B. carburetter, jet .031. The engine gets very hot. —J.J.M.

Evidently the repair job has been done

very badly, and we should strongly recommend you to insist upon the repairer putting it in order again. A new piston may be needed. We should say that by now the engine was properly run in. As to the exact cause of the trouble, it is impossible for us to say. The machine should really be taken down again, and every part verified, especially the bearings. Possibly a tight bearing might cause the failing in power, or, as we said before, a new piston as well as new rings may be necessary.

### Cancelling Registration Numbers.

? Last September, 1911, I sold my motor cycle and wrote to the clerk of the peace asking him to cancel the numbers, which, it appears, he did not do because I did not tell him to whom I sold it, and the result is I have had the police after me. Could you please tell me if I ought to tell him to whom I sold the motor cycle? —A.M.

We have never heard of it being necessary for the county or borough clerk to refuse to cancel a number because he is not told to whom the machine is sold. If you have taken the number off your machine your responsibility ends, but if the number remains on the machine it rests with either you or the purchaser to acquaint the authorities of the change of ownership, and pay 1s. for the number to be transferred. If, however, you cancel the number, the buyer must re-register the machine.

### Hints on Balancing.

? Please tell me how to check and improve the balance of a single-cylinder engine. —J.B.

We published an article on balancing engines on June 2nd, 1909. Shortly, you proceed as follows: Stand the flywheels beside weighing scales, place the piston on the pan, keeping connecting rod horizontal; this gives reciprocating mass. Opposite to the crank pin and at the same radius hang a weight equal to half that of the reciprocating mass by means of a small hole drilled in the flywheel and a bent wire. Next place the whole upon two level rods with a mainshaft on each rod, and test for balance. The flywheels should remain in any position; if they do not, drill out metal from the heavy side until the balance is perfect. It is, of course, desirable to drill the same amount of metal out of each flywheel.



S. A. Rowlandson ( $3\frac{1}{2}$  h.p. Rudge), who tied for second place in the Birmingham-Carlisle-Birmingham 24 hours' run with 13 minutes error. The rider finished up his holidays with this trial, totalling 1,600 miles in 14 days.



## Loss of Power.

? I should be very pleased if you could enlighten me on one or two points, namely: (1.) Engine getting very hot and refusing to take small hills. (2.) Engine whistling when the throttle is nearly closed. (3.) The machine I refer to is a 1903 Triumph, and I have fitted a new cylinder and piston. There were two small springs on the crankshaft, which I removed. Would they be for lifting oil up to the cylinder? I have been giving the machine a charge of oil every ten miles.—NOVICE.

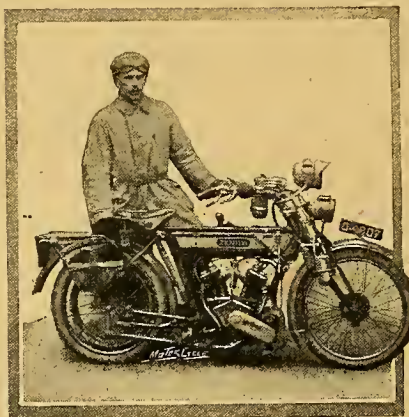
(1.) The cause may be bad carburation, incorrect timing, carbon deposit, or wear of the exhaust valve lifting mechanism. (2.) This may be nothing at all, merely the hiss of the air in the carburetter. (3.) The two small springs you refer to are for catching the oil and directing it on to the bearings.

## Water Cooling and Easy Starting.

? I should like to have your opinions and advice on the following questions: I have been much impressed with the Scott, as an ordinary coat does not seem to be splashed, and can be worn over the knees. (1.) Would you consider it as good a choice as any? (2.) Is there much trouble with radiators leaking, etc.? (3.) Is there any method of preventing the water freezing if left outside in frosty weather? (I ask this because I have heard of adding spirits to the water in the lamp generator to prevent freezing up.) (4.) If the compression is good, is the engine likely to be sound, supposing I buy a second-hand one? (5.) Is it likely to soon lose compression? From the explanation of its working in your handbook, I consider a good piston fit is everything in this machine. (6.) Does it start from cold easily? I have a mile or two only, and at present can walk it almost as soon as I can get the machine ready and my overalls on. (7.) Could you tell me the real or actual horse-power on the road? The 1912 has larger bore but is still called  $3\frac{3}{4}$  h.p. (8.) Is it heavier to handle than, say, a standard  $3\frac{1}{2}$  h.p.? (9.) With regard to my present machine (70 x 76 J.A.P.) there is nearly  $\frac{1}{16}$ th clearance at the base of the valve stems. I gather that this is too much. How can I reduce it? (10.) When I leave it out of doors a few hours, and come to start it, it runs badly for about half a mile. It will stop a few times and is then all

right. Can you suggest anything beyond the petrol flow? The jet is clear. (11.) Shall I have to sell this before I get another cycle, or pay for licence again? (12.) Is this about the best time for buying second-hand machines? It seems to be from the list in *The Motor Cycle*.—A.W.

(1.) Yes, we consider the choice to be a good one. (2.) No, you will not be



N. G. Blackwell (6 h.p. Zenith), winner of the Manufacturers' Union Trophy for the best performance of a private owner in the Birmingham-Carlisle-Birmingham 24 hours' run.

troubled with the radiator leaking. The radiator is a particularly good one. (3.) Glycerine is sometimes added, but it is perhaps safer to empty the water out in frosty weather, unless you keep the machine in a shed, the temperature of which does not reach freezing point. (4.) You had better not buy a second-hand one unless you get someone who understands the machine thoroughly to examine it and send in a satisfactory report about it. (5.) Naturally, it is most important that the crank case compression should be retained. (6.) It starts from cold quite easily. (7.) We should say it develops about  $4\frac{1}{2}$  h.p. (8.) It is not heavy to handle, as the weight is very well distributed. (9.) The clearance is rather too much. You can buy adapters for fitting on to the bottom of the valve from the Service Co., Ltd., 292-293, High Holborn, W.C. (10.) The machine probably runs badly because it requires warming up. Perhaps the carburetter is rather too far away from the cylinder. (11.) If you are using both machines at once you will have to procure an extra local taxation licence. (12.) Yes, second-hand machines can be purchased fairly cheaply now.

## Overheating.

? I should be much obliged if you will settle an argument I had with a friend of mine. He says that if a motor cycle is getting plenty of lubricating oil it will not heat up. I was riding my cycle—a twin Rex—one night, and owing to fault in carburetter starving engine it became very hot after I had run about six miles. Can heating be caused through a defective carburetter?—G.N.R.

Most certainly, an incorrect mixture causes overheating. A motor cycle engine will overheat if it receives an insufficient quantity of lubricant, but if the overheating is from another cause altogether—say from carbonisation, late opening of the exhaust valve, incorrect timing, or as above—it will overheat, whether it is flooded with oil or only given a normal amount.

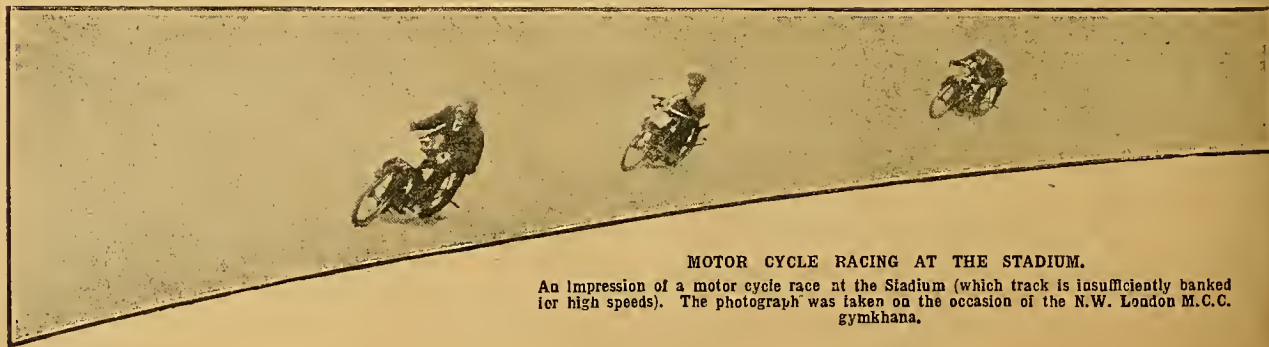
## READERS' REPLIES.

In reply to enquiry of "E.H." (Northfield) in *The Motor Cycle* recently, I had the same trouble with a Minerva, viz., overheating and failure to answer throttle after being half open. I tried adjusting the carburetter in every way, but found no improvement; the engine got so hot that two cylinders were cracked between valve caps. I then tried a  $\frac{1}{16}$ in. liner under the cylinder, and so reducing the compression which turned out a complete cure. I use a 0.32 jet in a B. and B. carburetter.—H. J. TREVETT.

## EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"M.C." (Godalming).—Lukin carburetter on twin lightweight.  
 "E.A.M.L." (Louth).— $3\frac{1}{2}$  h.p. Triumph with Mabon clutch.  
 "B.R." (Lincoln).—Overhead valve engines, various makes.  
 "G.S.B." (Cheadle).—1912 Douglas model K for general reliability.  
 "R.M." (Hatch End).— $3\frac{1}{2}$  h.p. Bat, Zenith, and A.S.L. models.  
 "R.D.E.D." (Punjab).—5-6 h.p. two-speed Clyno and sidecar in hilly country.  
 "A.C.B." (Windsor).—Binks two-jet carburetter, racing or touring models, on 1912 Douglas.  
 "J.G.M." (Stockton-on-Tees).— $3\frac{3}{4}$  h.p. Scott and Canoelet sidecar, 7 h.p. T.M.C. and sidecar. Consumption and freedom from vibration and noise.



MOTOR CYCLE RACING AT THE STADIUM.

An impression of a motor cycle race at the Stadium (which track is insufficiently banked for high speeds). The photograph was taken on the occasion of the N.W. London M.C.C. gymkhana.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

### Springing of Motor Cycles.

Sir,—I have read "Senex's" letter *re* "Road Shocks," and fully endorse his remarks. It is regretted that our leading manufacturers have not given some attention to this important defect. Surely a motor cycle should be sprung as much as any other road vehicle! It is the only speedy one that does not possess this important adjunct. I hope the leading firms will make a standard fitting of a spring frame for their next year's models, which will be more conducive to comfort and longer life of the machine and tyres.

SPRINGUS.

### Experiences with Dissolved Acetylene.

Sir,—I have read a letter from "J.H.K." seeking for information concerning the above.

For the past eighteen months I have had on my Scott one of these outfits. They fit quite snugly on to the down tube of a Scott, and take up very little room. The motor cycle size costs complete £3 15s., and when the cylinder of gas is empty, it will be replaced by a full cylinder for 2s. 6d. I never would again return to the old-fashioned generator, which requires considerable attention to ensure good lighting.

DR. K. B., F.R.C.S. Eng.

### Importance of Efficient Lubrication.

Sir,—We noticed a letter from W.D. Motors in a recent issue to which please permit us to make a short reply. The Veloce engine is fitted with ball bearings which do not require lubrication under pressure. By means of a pump a clean and ample supply of oil is forced through all vital parts of our engine, including the gear wheels. We claim to lubricate our engine and gears mechanically in a more efficient manner than is accomplished in any other motor cycle.

VELOCE, LTD.

### What is a Cyclecar?

Sir,—I notice there have been a few letters in your journal about the new Singer cyclecar. Perhaps it is on the border line, but, from a mechanical point of view, I think it one of the best cyclecars yet manufactured. The three-speed gear box and shaft drive is, in my opinion, far better than friction or belt drive. In some makes of cyclecars the belt has to run on the bottom of the pulley to get a free engine. I may say I have no connection with the Singer firm in any way, but should like to hear more about this machine.

T.D.

Sir,—I note with considerable surprise that the latest production of the famous Singer factory is described in your columns as a "cyclecar." Now, sir, to my mind, and I am sure to many others, this description is obviously wrong. Surely a car fitted with a four-cylinder water-cooled engine, gear box, and live back axle—in fact, a small edition of a large car—ought not to be included in the same category as many of the light three and four-wheeled cyclecars constructed on motor cycle lines? Of course, I am quite aware of the A.C.U. definition of a cyclecar, but this seems to be the very root of the evil. We might just as well include several of the many light two-seated motor cars and call them cyclecars. To me it would seem most unfair to allow a vehicle of the Singer type to compete against some of the genuine examples of what a cyclecar ought to be.

We have already had a most excellent example of over-development in the tricar, and what applied to that class

will apply to the cyclecar. The only way in which to stop this is to fix a price limit. The ideal machine for the man of moderate means is one constructed on cycle lines and, above all, coming within the meaning of that alluring term, "the £100 motor for two." EDGAR RUSSELL.

### Tyres and Tyres.

Sir,—With regard to Mr. B. H. Davies's letter "About Tyres." As an Irish rider, accustomed to vile roads and lanes in my ministerial work, I cannot agree with his remarks with regard to the 35s. type of cover. I weigh fourteen stones, and the original Clincher tyre supplied on my 1911 Triumph is still going strong at 4,410 miles. It has done service on both wheels, and, with the exception of a slight tendency to slip round in the rim when soft, is still in wonderful condition. Mr. Davies says, "These gashes do not admit of any lasting repair." I had two gashes on this tyre (glass in each case), and I sent it to the Clincher Co., who put in new pieces, and the tyre has since done 2,179 miles by speedometer, the repairs show no signs of severing from the original cover, and so I do not agree with "the first gash sounds the death knell of the cover." These tyres do not puncture in the way your correspondent states—twisted copper wire thorn catchers on the stays has hindered me from getting a puncture in the last fourteen months. I have no interest in the above company. I am an absolutely satisfied user. BALTIE.

### A Home-made Sociable.

Sir,—I am sending you herewith two photographs of a cyclecar I have just built. I find it runs well and is very roomy and comfortable. It is fitted with a 7.9 h.p. Peugeot engine driven by chain to counter-shaft and then by belts to the rear wheel. There are two belts, one for top and one for bottom speed; the pulleys are engaged on counter-shaft by dog clutches. I think it quite possible to be built for about £80. JAMES MATSON.



A locally assembled three-wheeled sociable. See letter from James Matson.



### The Braking Effect of Compression.

Sir,—A correspondent states that the result is due to the energy used in drawing in and expelling the gas from the cylinder. Now, when a gas is compressed it becomes heated; if none of this heat is lost (*i.e.*, if the gas is compressed adiabatically) the gas would expand again to its original volume without absorption of more energy; but if this heat is lost through conduction through the cylinders, work will have to be done to cause the gas to expand again to its initial volume, for work is equivalent to heat. I should be glad to know if any of the braking effect can be attributed to this cause.

INVESTIGATOR.

### Three and Four-wheeled Cyclecars.

Sir,—In your issue of the 19th ult., Mr. B. H. Davies says *re* above that he does not consider a tricar safe should the driving wheel suddenly deflate or burst at a corner—a very rare occurrence indeed. I have driven an A.C. tricar for thousands of miles during the last two years, through Devonshire, Dorsetshire, etc., and have never had a sideslip nor the slightest indication of tilting, although I round nearly all corners on top gear.

On the 22nd ult., for the first time, my rear tyre suddenly deflated at a corner in a narrow lane near Mitcham Junction through being pinched by a new outer cover, but, although I rounded another corner just beyond, there was not the least indication of tilting, simply a gentle swerving motion. What Mr. Davies says is doubtless true of the old, high, narrow type of tricar, but it is evident he has not had much experience with the A.C. broad built sociable (4ft. 6in track), which I doubt if anything less than a brick wall could overturn. With three up, I have run sideways on to a steep bank and came safely on to the road again.

I am not a servant of the A.C., neither am I paid to write this, but am a delighted owner of one.

H. J. BEANEY.

### Sidecaring in Demerara.

Sir,—I enclose a photograph of my  $3\frac{1}{2}$  h.p. Norton (Millennium two-speed hub gear) and sidecar which I thought might interest your readers, as it comes from a place very little heard of.

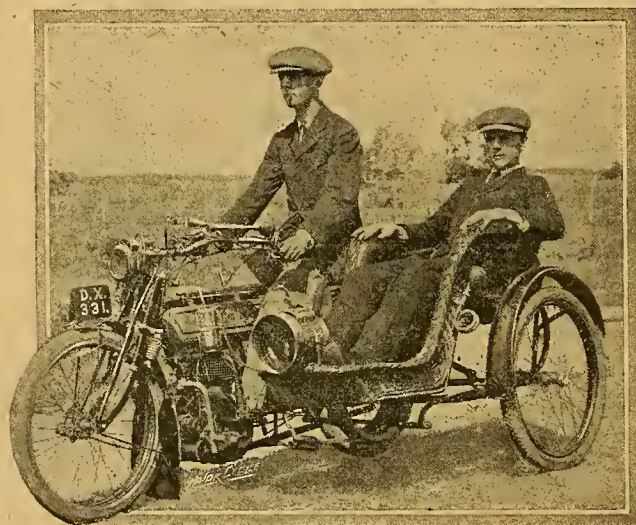
The number of motor cycles here is increasing by degrees, though I doubt if two years ago there were more than a dozen altogether.

The roads are terrible, and tyres give more trouble than all the other things put together.

My mount is exceedingly useful for going shooting, as plenty of birds abound on our sea coasts, which make very good eating.

W. H. COLLIER.

Georgetown, Demerara.



Sidecaring in Demerara. Photograph accompanying W. H. Collier's letter.

### A Tip for Removing Cylinders.

Sir,—Perhaps the following may prove useful to some of your readers who find difficulty in removing the nuts holding the cylinder to the crank case. The top half only of the nuts are filed down to fit a smaller box spanner. The nuts retain their full depth and number of threads. I have done this to my Triumph, and removing these nuts is now a pleasure when taking down the cylinder for removing deposit.

ECYOB.

Deccan (India).

### Motor Cycle Taxation.

Sir,—The report of the Committee on above comes as a thunderclap to such as I. At the end of last year, I bought, second-hand, a 1909 twin Rex triear 76 mm. bore at about 25% of its original cost, but to make it of any use I had to spend more than its original cost to me to fit it for the road.

Now that it is in perfect running order, I am faced with an increase of tax to £3 3s. No doubt my position is similar to many others. I purchased the machine to take my wife and child out on Sundays (I being at work all the week and my wife in business), and, during the summer, I had managed to get in a few evenings as well before dark.

I find, on looking up my record of runs, that I have covered about 1,540 miles since May 25th, 1912, and for that distance I have paid, in the form of a tax, £1 local taxation, 5s. driving licence, and petrol tax on forty gallons 10s., working out to about 4d. per mile, to be allowed to get out in the fresh air. Can the suggested alteration of tax be considered justified, when even the present one hits me, and a great many others, so hard, more especially owners of passenger machines, nearly all of which will come under the increased taxes if the suggestion be followed?

I, for one, most strongly protest against the proposed alteration, and think that some strong action by the trade association and by the A.C.U. (of which I am a touring member) should be made, otherwise I am afraid many of us will have to drop out of a very enjoyable pastime.

M. COOPER.

Sir,—Many persons have bought an old twin engined triear, as I have done, to give my wife and children an opportunity of enjoying the country, and run, perhaps, less than two thousand miles in a year. First cost was perhaps £20 to £25, and annual expense, including £1 licence, averages £4 to £5. A three-guinea tax is obviously most unfair, and in some years would equal or exceed the total of all other expenses. The very advantage of a motor as compared with a horsed vehicle—that of being able to cut down expenses by very moderate usage—is lost if there is a fixed charge of £3 3s. to start with. Is not the tax on petrol sufficient, coupled with a small tax on the vehicle? The pleasure is then taxed in proportion to the amount it is indulged in. Cannot the Committee see that heavy fixed taxes press heavily on people of small means, but are as nothing to the well-to-do leisured people who travel perhaps 20,000 miles in a year by motor?

J.T.J.

Sir,—What further injustices are we poor motor cyclists to suffer at the hands of a Government who are evidently out for blood? Where have the R.A.C. and A.A. and M.U. delegates got their information that motor cyclists will not object to an increase of taxation? Because we, as lambs, paid, smiled, and tried to look pleasant when more than 33% increased taxation was demanded, shall we now be further taxed on a hypothetical horse-power given by an unpractical formula? No, sir, if pay we must, let us at least have the satisfaction of knowing that our own live representatives have done their best to instil a little common-sense regarding motor cycles into the minds of those in authority. Further, let us agitate for better treatment in the way of making our Local Taxation licence available for the full twelve months from date of payment, and not, as hitherto, to the end of the financial year. Cannot someone suggest to the authoritative ones, if further taxation is demanded, that an increase of duty on petrol would be less obnoxious than an increase of direct taxation? Then one would pay in proportion to one's use of the machine and its actual horse-power.

MOTOR WALLAH.



Sir,—May I beg a small space in your valuable paper to urge all motor cyclists to protest against the proposed new taxes by signing the petition issued in last week's *Motor Cycle*? I am quite sure that motor cyclists as a body are sufficiently organised to bring about some moderation in the excessive taxes proposed.

The Surrey M.C.C. is prepared, if you will send it forms, to place a few in the hands of members in each town in the county where it has members, and I am sure getting the signatures would be an easy matter.

If all clubs would undertake to do the same, the trouble that you, Mr. Editor, have taken in drafting the petition would, I am sure, not be in vain.

EDWARD COX,  
Chairman Surrey Motor Cycle Club.

[A further supply of petition forms have been forwarded.—Ed.]

Sir,—Together with some thousands, I thank you for your endeavour to mitigate the threatened addition to the already extortionate tax upon the motor cycle. I may say for the south-west of Scotland that the motor cycle, with and without the sidecarriage, and the tricar is all over the comparatively poor man's mount, and that, more for business than for pleasure. Doctors here all use cars; but vets., Inland Revenue officers, commercial travellers, engineers, plumbers, artists, and a lot of farmers use the motor cycle daily, and it is only the high tax and price of petrol which prevent dozens of artisans from using motors. I have sent letter to our M.P., but it appears to me that the whole proceedings in the House of Commons are run by one or two who hate motors, and have an eye for nothing in particular but to haul in money by badly thought out taxation.

I trust your ever ready hand to the plough in this matter will be a success.

J. COPLAND.

Sir,—I have pleasure in signing and returning to you the petition against the proposed increase in the taxation of motor cycles. "Heaven knows" the upkeep or maintenance of the same is already sufficiently high. You will know that I am in an almost level country (Doncaster) with good roads, and at present the same are not ruined by heavy motor traffic owing to the Trent barring the way, yet my hand is always in my pocket for the machine.

BENJ. WEST.

Sir,—I enclose form with six signatures, including my own, and I must congratulate you on your enterprise in bringing out these forms, as I consider we motorists are taxed too highly already. I am also sending your suggested letter to our member for Bristol West, Col. Gibbs.

LAURANCE A. WESTON.

Sir,—I send petition form with names herewith. At the same time I have copied out the letter and forwarded to David Davies, Esq., and Col. Pryce Jones, our county and borough members.

JAS. A. SMITH.

Sir,—All motorists will support the A.C.U., A.A., and kindred associations, and also your petition in a combined effort to condemn any proposed increase to the already excessive taxation on motor cycles. If this committee is allowed to stand and shoot at us without a strenuous effort to protect ourselves, what is to prevent further demands next year, and so on *ad lib.* This does not seem possible, but it must be forgotten that the present Government is out to kill all sport, with motoring as a preliminary.

I am pleased to note the second-hand buyer is not being overlooked in this matter, as naturally the man whose only alternative is perhaps a three or four years old mount, and who must have power reserve for sidecar work or hilly country, or both, will be robbed of his healthy week-end pastime, because no sane person could suggest the majority who buy second-hand mounts can afford a £3 3s. tax. I am presuming a lightweight does not appeal to him, and, of course, for passenger work it need not be mentioned, neither can the popular  $3\frac{1}{2}$  h.p. be reckoned with without a speed gear, and this adds to the expense.

I trust all motor cyclists and cyclecar owners will also help to defend themselves individually by referring this question to their M.P., as suggested by your journal. The motor cycle clubs can also do their share in this direction.

AT 1097.

Sir,—Please find enclosed my signature against further taxation upon motor cycles. May I take the liberty of suggesting that the petition be further advertised. If you will kindly forward me some forms, I shall be pleased to distribute them amongst my friends.

F. J. LONDON.

Sir,—I return your petition form. I should like to endorse the letter signed R. Green in last week's issue of *The Motor Cycle*. To me it is a novel and sound suggestion, and it would make everyone pay in direct proportion to the cubic capacity of his engine, with only a slight variation for the skill in "tuning up."

A. COLLINSON.

[The above are but a selection of letters received from readers on the subject of the proposed new taxation of motor cycles, but they clearly show motor cyclists' views of the matter.—Ed.]

### Cyclecar Design.

Sir,—I am greatly interested in cyclecars and appreciate the efforts you are putting forth to popularise them in face of the opposition I believe exists in certain quarters. I believe they are destined to be extremely useful in the colonies, as you can sit in them when the roads make it impossible to ride a motor cycle. Another point I should like to mention is that if the track be made about three feet six inches, the cyclecar will ride between the ruts made by cars, waggons, etc., and will also run on the sleigh tracks in the winter.

A. H. RANDELL.

Moose Jaw Sash, Canada.

### Clutch Control.

Sir,—I am delighted to see "Ixion" is converted to handle-bar control for clutches. I changed the control on my Sturmey-Archer hub clutch from pedal to hand some months ago, and cannot conceive anyone going back to the foot control after using the hand. I used a lever sold by Bowden Wire, Ltd., with single point ratchet giving  $\frac{1}{2}$  in. pull, and at the hub end a pair of telescopic tubes as used for their magneto control. The standard Sturmey-Archer triple armed worm cup I replaced with a single armed cup with an adjusting screw in the centre. The arm is  $2\frac{1}{2}$  in. long to centre of shackle hole. With the  $\frac{1}{2}$  in. pull available, this releases and engages the clutch perfectly, and the hand lever works as easily as the exhaust valve lifter, which is on the same hand. The clutch can easily be disengaged with two fingers on the lever, and, in changing gear up, I grip both levers so that the engine cannot race and I get a perfectly clean change. The conversion cost me 16s. 6d. I made the new worm cup lever myself, and it is well worth it.

W. WOODWARD.

### SUMMARY OF CORRESPONDENCE.

"Flycatcher" writes that the waterproofing tip suggested by "Mudplugger" has not been successful in his case, and that the article has dried "tacky." Will "Mudplugger" oblige with a remedy?

"Inquirer" would like to ask "Mudplugger" what sort of linseed oil must be mixed with glue to make it waterproof.

The Eagle Motor Manufacturing Co., Ltd., London, write that the form of poppet valve cotter described and illustrated under the heading of "Patents," on page 1052, September 12th, has been fitted by them as standard for some years.

With regard to the paragraph "Amateur Police Traps and the C.T.C.," Mr. Burrows writes that while it is true that he occupies an honorary official position in the Manchester Centre of the C.T.C. in the matter of amateur police traps, he has an entirely free hand. We are glad to note that the C.T.C. is not officially responsible for this extremely silly idea, but at the same time we presume that Mr. Burrows will rely upon the help of the members. Of course it is within the right of any citizen to report flagrant cases to the police, and riders who drive to the danger of others deserve no sympathy. What we object to is the magnifying of a purely technical offence, already punished by penalties out of all proportion to the crime, and we should like to point out to Mr. Burrows and other busybodies of the same sort that there are many ways in which their energies could be better expended if, as he says, he is really desirous of assisting the law, but we suspect that his action has quite another motive.



# 100 Miles Open Reliability Trial.

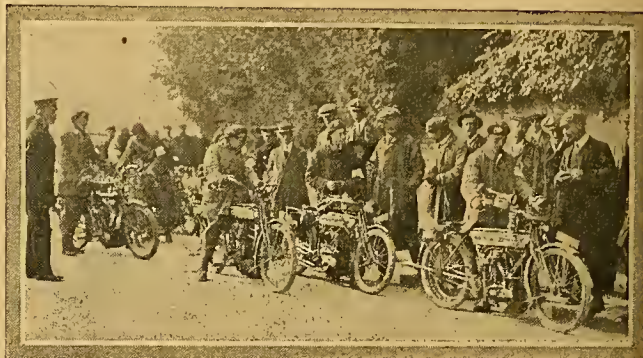
## The Herts. County A.C. Third Quarterly Trial.

**T**HE start of this event, in which twenty-six riders took part, was from the Cricketers' Hotel, St. Albans, a small inn standing at the junction of the Wheathampstead and Luton roads. Getting there was not quite so easy as it sounds, as there was a dense fog, which rendered the early part of our journey from town most difficult, but fortunately it cleared off at Finchley. Also, to make matters worse, our carburetter frequently froze up, so that the inlet pipe had to be lagged in a rough and ready way to enable any progress to be made at all. However, at St. Albans the weather was glorious, and later it became much warmer. Newsome was riding a Triumph, which, beyond having a three-speed gear, was fitted with the Phillipson patent governor pulley we described recently. This pulley raises the gear automatically, and can be kept at any desired gear by pressing the heel on the exterior of the outer drum, which contains a spring keeping the movable flange against the belt. With this pulley there is no belt slip, even on a low gear.

Mr. Archibald Sharp, who examined the machines before the start, found that H. L. Meyer (Triumph) had only one brake, and in consequence disqualified him. Both weather and roads were perfect, and a splendid run was made to Luton, where we came upon W. Cooper filing his valve stems. Some miles further on at Barton-in-the-Clay we left the main road and entered some narrow lanes which led to Sundon Hill. Shortly before Barton was reached Newsome's cap blew off, and while stooping to pick it up he let his machine fall, but fortunately no damage was done. The lanes on the way to Sundon became very narrow and winding, and in many places were grass-grown. W. Cooper and several others were riding in a group, when they came upon a farm cart, the horse attached to which shied, pulled the cart into the ditch, and threw out the boy who was in charge. He rapidly got clear, chased the cart, and caught it up, just in time to speak words of comfort to the nervous quadruped as the others came by.

### Performances on Sundon Hill.

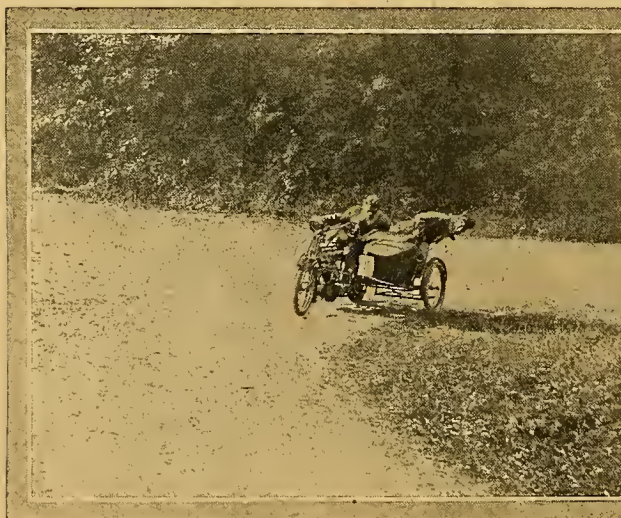
The foot of Sundon Hill was a control, and between this point and Aston Hill there was a secret check. Sundon Hill rises quite abruptly, has a fairly rough surface, and a gradient of about 1 in 8. The following made light work of the hill: Jarvis (Triumph), Collier (Zenith), Gutteridge (Rudge), Penny (A.J.S.), Cooper (Bradbury), Charlesworth (Zenith), Newsome (Triumph), Wills (Triumph), Bently (W.D.), Cooper (Enfield), Howe (Zenith), Meredith (Bradbury), Oliphant (Premier), Gold (Ariel), Newbold (Zenith), Lord (Rex), F. W. Applebee (Centaur), and Jacobs (Rex sc.)



AT THE START.

Mr. D. K. Hall, the timekeeper, despatching E. C. Jarvis (3½ h.p. Triumph).

Fordham (Quadrant) and Moss (Rex sc.) failed. The only cyclecar, Keiller's G.W.K., made an excellent ascent. We waited to see all the men tackle this, the first hill on the course, and then pushed on towards Kop Hill. The route was well marked, so it was quite easy to find one's way. Near Dunstable the surface was very bumpy, which caused our lamp bracket to give up the ghost, necessitating a most annoying delay, and rendering it impossible to include Aston Hill, the next severe gradient to be encountered in our journey, as otherwise Kop Hill would have been reached too late. Aston Hill is so well-known that it needs but a passing reference, while, beyond its rough surface and length, there is nothing to worry the modern machine. We pushed on quickly and caught up the vanguard about three miles from Prince's Risborough, where a sharp pitch with a church at the roadside took those who did not know the course by surprise. After Prince's Risborough, Kop—in an exceedingly loose state—up which steep acclivity Penny (A.J.S.), Cooper (Bradbury), and Charlesworth (Zenith) did really splendid performances. Bentley (W.D.), Walker (Hohart), Tippet (Humber), and Newsome (Triumph), excellent. Berwick (New Hudson), Wells (Triumph), Howe (Zenith), Lord (twin Rex), and Meredith (Bradbury) all made excellent ascents. Fordham (Quadrant) dismounted. The next interesting point on the course was the corner on Pink Hill, taken after the descent of Kop. Here Newbold (Zenith)



Geo. Baxter (Basil-Jap and sidecar) rounding the hairpin on Pink Hill.



R. Lord (6 h.p. Rex) on the steepest portion of Kop Hill. Both these ascents are in the neighbourhood of Prince's Risborough.





J. Chater Lea (Chater-Lea sidecar) climbing Sundon Hill. In the distance a sidecarist can be seen by the roadside.

was sent down to warn those at the foot to be careful, and, not taking sufficient care himself, collided with Keiller's G.W.K., damaging the radiator and putting the gallant little cyclecar out of action. Newbold then came up in front of Gold (Ariel), and, in taking the corner, fell in front of him. Gold had a narrow escape, but cleverly avoided a collision. It is assumed that the collision damaged Newbold's forks and upset his steering. From the foot of Kop Hill to Missenden was a non-stop section. As there were cattle on Pink Hill, five minutes were allowed to the competitors.

### The Slow Hill-climb.

A beautiful run through leafy woods, looking glorious in their autumn tints, brought us to Great Missenden, where lunch was served at the Buckingham Arms Hotel. Here we had an opportunity of looking round the machines. P. H. Bentley's W.D. had a remarkably clean crank case, and as the machine is fitted with forced lubrication this fact denotes great care in manufacture. Walker had a puncture, which was noticed in the hotel yard, and after this point he did not again put in an appearance. After lunch we pushed on to Maple Hill, taking Rectory Hill on the way, and negotiating a stiff climb out of Chesham. Maple Hill is

quite a stiff rise, and used to be the scene of early Herts Club hill-climbs. On Saturday it served for the slow hill-climbing test, and provided much that was of interest. Charlesworth (twin Zenith) made a remarkably slow ascent, as also did Newsome (Triumph), Jarvis (Triumph), Meredith (Bradbury), Jacobs (Rex sidette), and Bentley (W.D.). F. W. Applebee (Centaur) tried to travel too slowly and stopped, but made certain of the ascent on his next attempt, and came up at a good pace. Gold (Ariel) and Fordham (Quadrant) came up fast. After Maple Hill there were no difficulties till after the Dunstable control. But between this point and the village of Caddington there is a hill known as Shaul End, which took several of the men by surprise, among whom may be mentioned Jarvis (Triumph), Fordham (Quadrant), and F. W. Applebee (Centaur). Thereafter the run to St. Albans by the main road was quite easy.

### The Awards.

The following are the awards and performances:

#### CLASS A.—LIGHTWEIGHTS.

F. Cooper (2½ Enfield) ...	Silver Medal.
W. P. Tippet (2½ Humber) ...	Bronze Medal.

#### CLASS B.—SINGLE-CYLINDER MACHINES.

W. F. Newsome (3½ Triumph) ...	Gold Medal.
C. W. Meredith (3½ Bradbury) ...	Silver Medal.
W. Cooper (3½ Bradbury) ...	Bronze Medal.
H. Berwick (3½ New Hudson) ...	Bronze Medal.
P. H. Bentley (3½ W.D.) ...	Bronze Medal.

#### CLASS C.—TWIN.

R. Charlesworth (6 Zenith) ...	Silver Medal.
E. A. Colliver (6 Zenith) ...	Bronze Medal.

The silver cup for the best performance of a trade rider in the trial was awarded to W. F. Newsome (3½ Triumph), while the cup for the best performance of a private owner was awarded to R. Charlesworth (6 Zenith).

Non-stop runs were made by A. N. Gutteridge (3½ Rudge), A. R. Penny (2½ A.J.S.), A. R. Wells (3½ Triumph), C. Howe (3½ Zenith), J. Oliphant (3½ Premier), and A. H. Gold (3½ Ariel).

### A Few Failures.

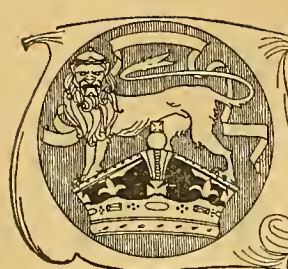
E. C. Jarvis (3½ Triumph) failed at Shaul End, and had a sooted plug at Harpenden; W. P. Tippet (2½ Humber) complained of being baulked on Shaul End; H. A. Fordham (3½ Quadrant) failed on all the test hills; P. H. Newbold (6 Zenith) retired after his collision; R. Charlesworth (6 Zenith) was reported to have stopped and waited in the last non-stop section between Dunstable and the finish, as he was too early; W. A. Jacobs (6 Rex sidette) and G. Baxter (6 Basil-Jap) both took the wrong road in Dunstable, and went many miles out of their way, arriving very late; C. A. Moss (6 Rex sidette) failed on Sundon, and did not finish to time; J. H. Kerr (5-6 N.S.U.) was wrongly directed at Boxmoor, and arrived very late.

The judges were Messrs. Archibald Sharp, A.M.I.C.E., and F. G. Carter, while the timekeepers were Messrs. F. Straight and D. K. Hall. The organisation was good, and the course was well marked by arrows, reflecting great credit on the secretary, Mr. C. M. Down.



(1) W. Cooper (3½ Bradbury) and W. F. Newsome (3½ Triumph) passing through Luton. (2) Outside the control at Sundon, J. Oliphant (Premier), H. G. Dixon (New Hudson), R. Lord (Rex), and C. M. Keiller (G.W.K.). The competitor riding past is F. Cooper (2½ Enfield). (3) On the way to Dunstable.





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Oct. 10th	...	6.18 p.m.
" 12th	...	6.13 "
" 14th	...	6.9 "
" 16th	...	6.4 "

## The Petition against the New Taxes.

The petition against the proposed new taxation for motor cycles is being taken up enthusiastically by motor cyclists. Shoals of forms duly signed are being returned to us by every post.

## The Premier and Motor Cycle Taxation.

A reader informs us that, on the arrival of the Prime Minister at Ladybank, on Saturday last, he sent him per "Express Post" a copy of the letter inserted in *The Motor Cycle* last week, and that he understands from an inside source that it was carefully perused by the right hon. gentleman. We look forward with some confidence to the result.

## F.N. 1913 Models.

Great secrecy is being observed regarding the new four-cylinder F.N. We hear, however, from an outside source that this machine will create a sensation when it arrives. It has mechanically-operated inlet valves worked on the overhead system, while the exhaust valves are on the opposite side. There is a sump in the crank case for oil, from which the latter is delivered by pump to the bearings. The finish of the machine will also be very different from the usual somewhat sombre appearance one has been accustomed to associate with the F.N.

## Amateur Motor Cyclists' Association.

A meeting has been called for the 16th inst., at 7.30 p.m., at the A.C.U. premises, 89, Pall Mall, S.W., to consider the formation of an Amateur Motor Cyclists' Association. Those responsible for the formation of this body ask us to make it clear that they are not attempting to define an amateur for the world at large, but intend to tackle the matter so far as motor cyclists who may desire to join are concerned.

Mr. C. C. Cooke, who has been calling upon club secretaries during the last six weeks, has collected a considerable amount of information respecting motor cyclists generally and their wants, and has come to the conclusion that reform in many ways is needed. The provisional committee have several schemes for first-class events in 1913, and have definite promises of support from many private owners throughout the country. This being the case, there will, of course, be no objection to one of four events being sporting tussle between amateur and de riders. The meeting on the 16th is open for all genuine private owners, and Mr. Cooke hopes they will turn up and give their support.

## Liverpool Open Hill-climb.

We are requested to state that by special request of the Auto Cycle Union, the open hill-climb arranged by the Liverpool Auto Cycle Club for the 12th inst. has been postponed until Saturday, the 19th inst. In the stopping and restarting test, competitors need not stay in the saddle. Should four or five ladies enter, a special class will be arranged with prizes equal to the other classes.

## A Belated Official Result.

Revised results of the Junior T.T. Race, organised by the British Motor Cycle Racing Club on September 14th, have just been issued officially. The only difference is as regards those who finished after the third man. The details are: 1, S. L. Bailey (Douglas), 2h 49m. 45s.; 2, Hugh Mason (Nutt-Jap), 3h. 0m. 35s.; 3, A. Woodman (Humber), 3h. 50m. 21s.; 4, S. W. Phillpott (Humber), 3h. 50m. 27s.; 5, F. A. McNab (Douglas), 3h. 52m. 25s.; 6, A. J. Jenkins (Douglas), 3h. 56m. 5s.

## SPECIAL FEATURES:

### PROPOSED NEW TAXATION.

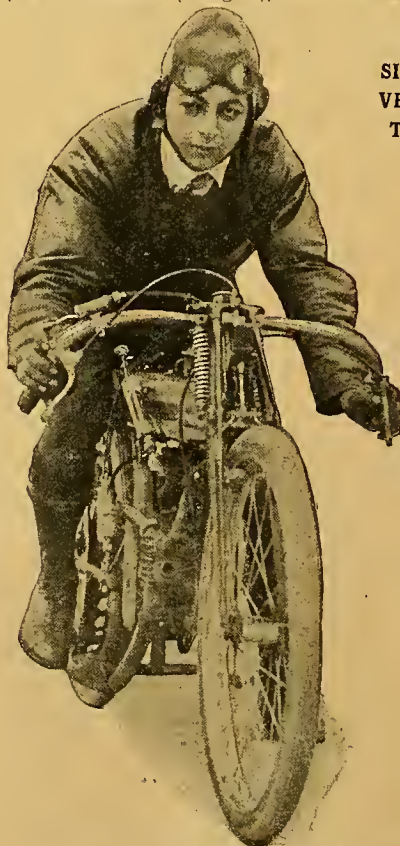
Opposition to the recommendation.

### WEEK-END COMPETITIONS AT HOME AND ABROAD.

### SEVERAL NEW CYCLECARS (ILLUSTRATED).

## £100 Challenge.

As an outcome of a friendly argument between Mr. F. S. Whitworth, of the Colmore Depot, and Mr. G. H. Mansell, of Singer and Co., Ltd., as to the superiority of G. E. Stanley and S. L. Bailey as a motor cycle tuner and rider, a sporting match has been arranged with stakes of £100 a side. Both G. E. Stanley and S. L. Bailey are holders of world's records. The former will ride a Singer, and the one time Australian champion a 2½ h.p. Douglas. The simple conditions are as follows: Cylinder capacity limit 350 c.c. The events, which will be three in number, consist of a hill-climb, a five lap and a ten lap race on Brooklands. The hon. secretaries of the Sutton Coldfield A.C. the Coventry and



SINGLE  
VERSUS  
TWIN.

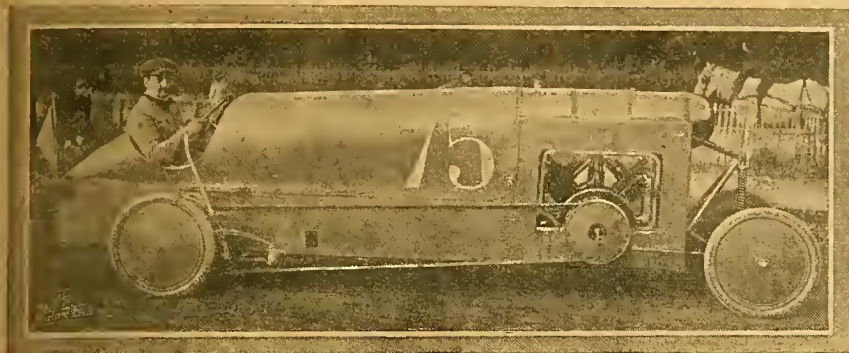


TWO WELL KNOWN RIDERS WHO ARE TO COMPETE FOR A STAKE OF £200.

S. L. Bailey (2½ h.p. Douglas).

G. E. Stanley (2½ h.p. Singer).



**THE LIMIT IN CYCLECARS!**

The Bedela cyclecar in the Gailion hill-climb. This machine is fitted with a 30 h.p. twin-cylinder engine (cylinders set at 90°) with double belt drive—one off each end of the engine-shaft direct to the rear wheels. The belt rim, it will be noticed, is only a trifle larger than the pulley itself.

Warwickshire M.C., Oxford M.C.C., and Mersey M.C. have been invited to form a committee with the editor of this journal and another.

**Scenes during the Dutch Trial.**

The suggestion having been made to us, we have arranged with one of *The Motor Cycle* photographers to prepare a series of copyright picture postcards of the first English-Dutch reliability trial at a charge of 2s. 6d. per dozen, and 3s. 6d. for a set of eighteen.

**A French Team for the London-Exeter Run.**

Our contemporary, *L'Aero*, in a prettily worded article, thanks British motor cyclists for their support in the recent French events, and proposes to return the compliment by organising a team of French motor cyclists to take part in the M.C.C. London-Exeter and back run at Christmas.

**Newsome's New Venture.**

W. F. Newsome (till lately the leading competition rider for the Triumph Cycle Co., Ltd.) and R. Fletcher (well-known as a Premier rider) are now settled in their new premises at 3, Sandringham Parade, Ealing, W., as motor cycle specialists, and have 1912 models of the Triumph, Douglas, Premier, A.J.S., Zenith, and Rudge in stock. Repair work is to be made a feature.

**No Cut-out Regulation Issued.**

We have been very much amused by seeing a statement elsewhere to the effect that a Local Government Board regulation prohibiting the use of cut-outs has been issued. As a matter of fact, no such regulation has been issued. What the Local Government Board has done is to issue a draft regulation, this draft having been submitted in confidence to the leading bodies for their consideration and opinions. To it amendments may quite likely be made, but for the time being it remains but a draft proposal. At the same time, while a draft regulation is not the real thing—though evidently some people imagine that it is—there is no doubt that cut-outs will be prohibited next year; indeed, this has been clear for some time, and all who have read our references to it will experience no surprise when a prohibitory regulation is eventually issued.

**One Armed Motor Cyclist.**

The fact that J. King, who recently won the Nottingham and District M.C.C. reliability trial of 100 miles, has only one arm shows that the riding and management of a motor cycle is neither a difficult nor dangerous occupation when due care is exercised.

**FUTURE EVENTS**

Oct.	12.—B.M.C.R.C. Race Meeting.
"	12.—Mersey M.C. Open Hill-climb on Pen-y-Ball.
"	19.—Liverpool A.C.C. Open Hill-climb.
"	26.—A.C.U. Autumn Open One Day Trial.
Nov.	2.—N. Middlesex M.C.C. Open Winter Reliability Trial.
"	8-16.—MOTOR CAR SHOW AT OLYMPIA.
"	25-30.—MOTOR CYCLE SHOW AT OLYMPIA.

**Proposed Amateur Police Traps.**

We continue to receive cuttings from the press about the proposed "National Road Guards," accompanied by letters from our readers, who, in many cases, express surprise that the C.T.C. is not officially cognisant of what is being done by the Manchester Centre. According to the *Daily News and Leader* it was stated

at the meeting that, in the event of convictions being obtained, half the fine went to the informer—pleasant term! This statement was regarded as a point of great importance. We are, however, glad to be able to assure our readers that there is no truth whatever in this statement, and that the amateur sleuth hounds will be disappointed of their guineas.

**Saturday's Meeting at Brooklands.**

For the B.M.C.R.C. meeting next Saturday, a record entry has been received. In the time trials there are sixty-four entries, one hour cyclecar race twelve entries, sidecar race sixteen entries, Junior one hour race sixteen entries, five-lap 1,000 c.c. race twenty-four entries, and 500 c.c. championship twenty-nine entries. Racing starts at 10 a.m.

**The 1913 T.T. Races.**

We gather from opinions expressed that the trade generally are in favour of supporting the Tourist Trophy Races next year. We understand that the matter has already been considered by the Motor Cycle Manufacturers' Union, and the recommendations that the trade generally support next year's T.T. have only to be confirmed by the council. This is good news, for it will mean that the 1913 T.T. Races will be thoroughly representative. A two-day race is under consideration for next year, the Junior and Senior machines to compete together.

**Imports of Motor Cycles.**

September imports of motor cycles totalled 45 of a value of £1,673. This is a decrease, but motor cycle parts imported show an extraordinary jump, viz., from £6,274 in September, 1911, to £14,866 this year, making the total £16,539. During the nine months ended September 30th, the imports of motor cycles and parts were as under:

1910.	1911.	1912.
£81,738	£87,859	£131,528

The great increase in imported parts entirely accounts for the rise in figures.

**British Exports.**

Our exports of motor cycles have, however, increased in far greater proportion. Last month 1,425 complete machines were sent abroad of a value of £57,352, or £76,398 with parts. During the nine months ended September 30th, British exports of motor cycles and parts are represented by the following values:

1910.	1911.	1912.
£106,656	£213,997	£477,740

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A TEST RUN ON THE SINGER CYCLECAR (Illustrated)	1141-1142
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## THE HUMBERETTE.

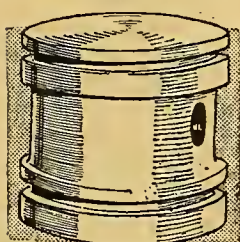
Features: Air-cooled V type engine, three-speed gear box, tubular frame, shaft drive.

IT may be said without fear of contradiction that no cyclecar has received such a severe and thorough testing before being placed on the market as the new Humberette. Eighteen months ago the first example was seen on the high road; it was a two-speed model, but in other respects the main features were the same as they are to-day, though, of course, sundry improvements and alterations have been made during the time the machine has been undergoing its many thousand miles road test.

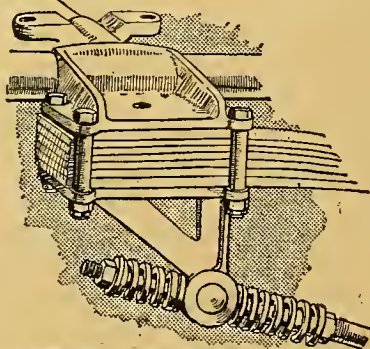
What will undoubtedly appeal to the reader is the fact that the Humberette is a real cyclecar, embodying, as it does, most of the true characteristics of the motor cycle, viz., wire wheels, air-cooled engine of the V type, and tubular frame. It certainly has no chains or belts, but the shaft drive may be regarded as a distinct advantage, seeing that it is entirely weather-proof and likely to be more reliable.

### The Engine and Fittings.

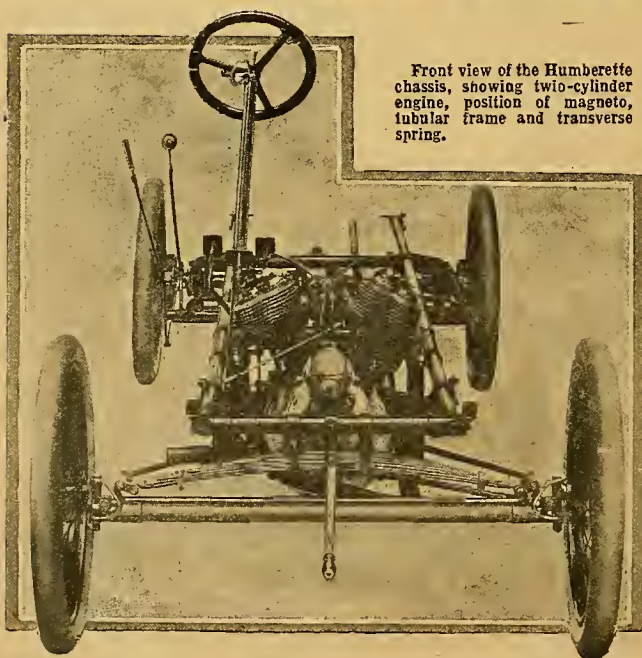
The engine gives approximately 8 h.p., the bore and stroke being  $84 \times 90$  mm.; the cylinders are interchangeable and set at an angle of  $50^\circ$  to one another.



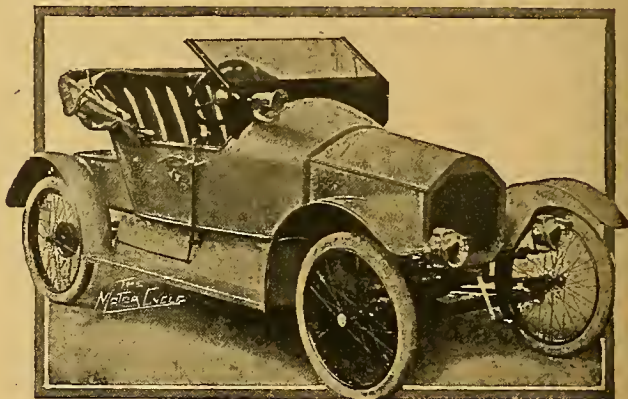
Recessed piston with two-step cut rings.



Rear spring bracket and spring torque rod.

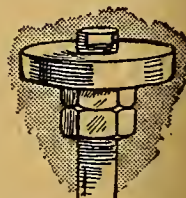


Front view of the Humberette chassis, showing two-cylinder engine, position of magneto, tubular frame and transverse spring.



Three-quarter front view of the 1913 Humberette.

The carburetter, which is of new design with four jets opening one after the other, is neatly disposed between the cylinders. It is of the automatic type, and is known as Smith's patent. The clutch is of the leather to metal cone type, operated by three springs which are easily adjustable. An aluminium casting bolted to the engine base forms a neat housing for the clutch and gear box, and makes an exceedingly compact unit. The ratios are 4.46 to 1 on top, 7.87 on second, and 13.6 to 1 on first speed, the reverse being 18 to 1. The gear box is of the sliding tooth type, operated in usual car fashion by a lever working over a quadrant enclosed within the body. From the gear box the power is conveyed to a bevel differential in the back axle by a long shaft. The universal joint is at the rear end, a star joint being utilised at the gear box end.



Humberette adjustable tappet.

The frame is tubular, with two side and three cross members, and is supported at the front on a transverse spring, quarter elliptic springs being used at the rear. The front axle is of weldless steel tube. External brakes are used throughout, one acting on the gearshaft, the hand brake operating on the rear wheel hubs. All have milled nuts to provide rapid adjustment with the fingers. The rear wheels are detachable in a few minutes. A cotter pin is used to key the hub to the spindle in the same way as a crank is attached to the bottom bracket axle of a bicycle. The wheelbase of this miniature car is 7ft. 3in. and the track 3ft. 6in.

The magneto is in a most accessible position in front of the engine, the contact breaker facing forward. It is driven from the timing gear. The handle starter operates on the camshaft, thus giving two revolutions of the engine to one of the handle.

The control is by a throttle lever mounted on the steering pillar interconnected with an accelerator pedal,



Stuffing gland on the inlet pipe allowing for expansion



**The Humberette.**—

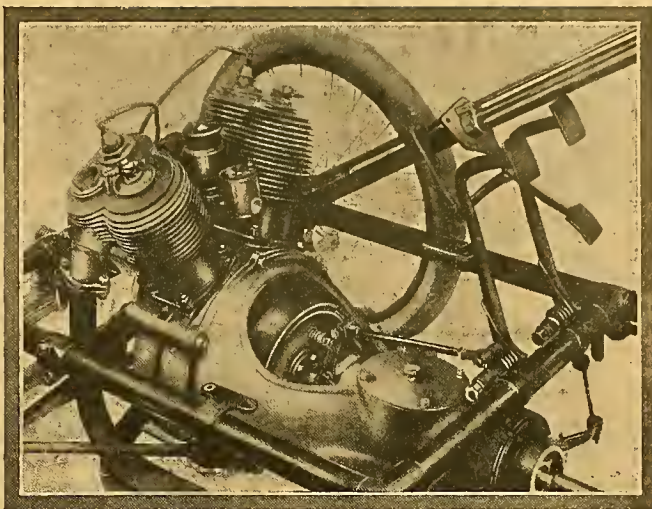
conveniently placed between the clutch and brake pedals.

A variable spark advance lever is provided in the centre of the steering wheel. The petrol and oil tanks are carried on the dash. The oiling arrangement is by sight drip feed, but a pump is provided.

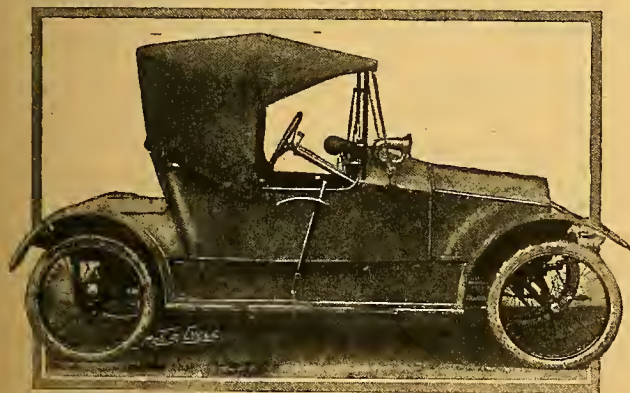
The silencing of the vehicle is excellently carried out. Two pipes enter a large sized silencer placed amidships; the exhaust thereafter is conveyed to the rear of the car by another pipe.

Good tool accommodation is provided, and the 1913 Humberette will be sold complete with hood, screen, lamps, and horn. Leather side extensions are fitted to the mudguards and running boards. We examined examples of the Humberette finished in green and French grey, and in the latter finish the vehicle looked particularly imposing. A dummy radiator is used which certainly enhances its appearance.

We subsequently tried the machine on the road, and what impressed us more than anything else was



Rear view of power unit, from which will be seen the control arrangement, also the clutch housing and three-speed gear-box.

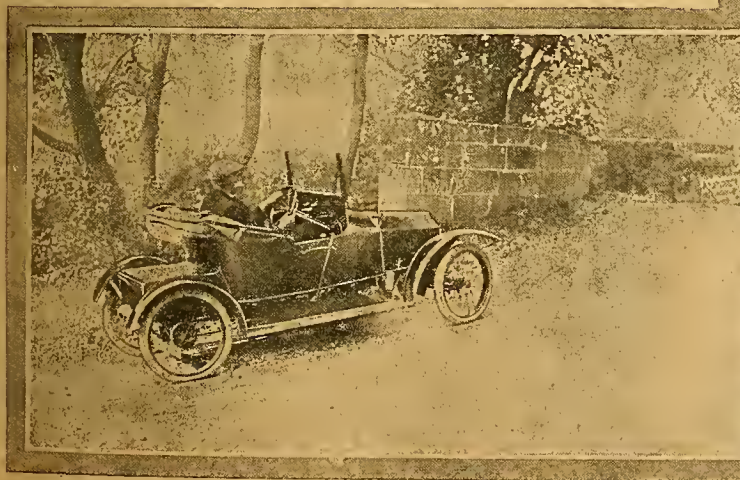


Broadside view of the 1913 Humberette, which is to be sold complete with hood, screen, lamp, and horn.

the efficiency of the springing. We purposely selected a pot-hole road which is avoided by all Midland motorists, and we were astonished at the degree of comfort. The engine is possessed of ample power

for all ordinary requirements, and, we understand, will attain a speed of over 40 m.p.h. It will slow down to about 10 m.p.h. on the same gear without the engine knocking or showing signs of distress. The rack and pinion steering is neat, and we found it light and simple to handle.

As we have already pointed out, the Humberette is not an untried machine. The makers had such confidence in their production that 500 were put in hand some months ago. We have actually seen piles of frames, cylinders, gear boxes, and axles in the various finishing shops. The reception of the vehicle on the occasion of its first inspection by Humber agents was such that 500 more were at once put in hand, and deliveries will be commenced at the end of this month. There seems to be no doubt about the success of the Humberette.

**THE HUMBERETTE ON THE ROAD.**

At Finham Bridge on the way to Stoneleigh.



In the gateway of Kenilworth Castle.



## THE GAILLON HILL-CLIMB.

Rex Mundy  
(3½ Rudge)  
at full speed  
in the Gaillon  
hill-climb,  
France, on  
Sunday last.  
He was beaten  
by 2s. by A. J.  
Dixon (3½  
Singer).



THIS is the fourteenth year that the above event has been held on the famous hill at Sainte Barbe, between Paris and Rouen. The hill is not steep nor tortuous, and the average gradient does not exceed 1 in 10. Messrs. Douglas, Bashall, and Mundy agreed with us that it was not a hill-climb at all. The first thing we noticed on arrival was that an enterprising proprietor of a shooting gallery in the village had converted his tent into a motor cycle garage. The hill was well guarded, a wire fence being erected along one side, and behind this the spectators were supposed to take their stand. There was a fair crowd on the hill, and racing started at 1 p.m., or thirteen o'clock as the up-to-date French papers have it. The organisation generally was good, but there were apparently no regulations for the motor cycles, with the result that the majority of the French competitors turned up on stripped machines, and were thus at an advantage. The Britishers, on the contrary, rode with full touring equipment, but Mundy removed the mudguards of his Rudge when he discovered that petrol tanks of the dimensions of a 1 lb. carbide tin were permissible. The car results were decided on formula and speed, but the motor cyclists had to be satisfied with speed positions only.

Very few motor cyclists carried numbers; in fact, we only saw three or four, and they were on British machines, but wait, one Frenchman made amends for the rest for he carried a number on his back (not 13) about 2ft. square; he did not intend his friends to miss his ascent or mistake him for anyone else.

#### Success of a stripped Racer.

The Motosacoche in the 350 class was an absolute racer, pedal cycle tyres, overhead valves, no exhaust pipe—in fact, one could see the valve through the port. Under the circumstances, it is not surprising that it won fairly comfortably from the Terrot and Douglas. We do not write this in any spirit of jealousy, but we do really think that the organisers should see that all compete on equal terms. A rule to the effect that equipment was not restricted would have saved a lot of trouble and expense to the Britishers.

Of the ascents in the various classes, an Alcyon ridden by Soly or Stoffel, Terrot III., Dixon's 3½ Singer, W. Douglas's Douglas, Rex Mundy's Rudge, and De Vay's Triumph went up fastest.

Several English riders who had entered were absent, notably F. W. Barnes, who had entered three Zeniths in three classes, but failed to put in an appearance. Cocker was absent, and Rockwell (a relation of Bashall's), who would have made the third Douglas, was prevented from crossing by reason of illness in his family. Scott (Rudge) was present, but did not get placed.

The Austral ridden by Dacier is fitted with a four valve Alcyon engine, no exhaust pipes, and was seen in the Isle of Man.

Fenton's Clément is an Enfield motor cycle with a Motosacoche engine. That old veteran, Rivière, had entered with a Mototri Contal, but did not compete; he does not look a day older. Bourbeau's Bedelia and the Automobilette represented the cyclecars. Both climbed well, but would certainly have been beaten for speed by Barnes's Zenith and sidecar had he turned up.

#### A Monstrous Cyclecar.

One of the features of the meeting was a 30 h.p. Bedelia, which competed in the 2 litres 700 to 3 litres racing car class. The engine is a 90° twin of about 120 mm. bore, and the drive is by two ordinary 7in. leather belts direct from each end of the engine-shaft to the rear wheels. The wheelbase is 11 feet roughly measured by paces, and the body, which is of streamline design, has seating for one. To see the belts flapping as this monster went up the hill caused a knot of British spectators to give vent to exclamations of surprise. A photograph of this strange machine appears on the previous page.

Journeying to Paris in the train at dusk, we could see a trail of dust which hung over the road, showing the passage of competitors and spectators returning to Paris by road. Results:

#### CLASS I.—250 C.C.

	M.	S.
1. Fraquebalme (Terrot) ... ..	0	56½
2. Lacroix (Peugeot) ... ..	1	5
3. Stoffel (Alcyon) ... ..	1	8½

#### CLASS II.—350 C.C.

1. Guignet (Motosacoche) ... ..	0	44½
2. Cuzeau (Terrot) ... ..	0	46½
3. W. Douglas (Douglas) ... ..	0	47

#### CLASS III.—500 C.C.

1. A. J. Dixon (Singer)* ... ..	0	42
2. Rex Mundy (Rudge) ... ..	0	42½
3. De Vay (Triumph) ... ..	0	42¾

\*Fastest time of the day.

#### PASSENGER CLASSES.

##### CLASS I.—350 C.C.

Greame Fenton (Clément) ... ..	1	24
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Although this class was for passenger attachments, Fenton went up without a sidecar and was placed by the organisers.

##### CLASS III.—1,000 C.C.

1. Bourbeau (Bedelia) ... ..	1	15
2. — (Automobilette) ... ..	2	5

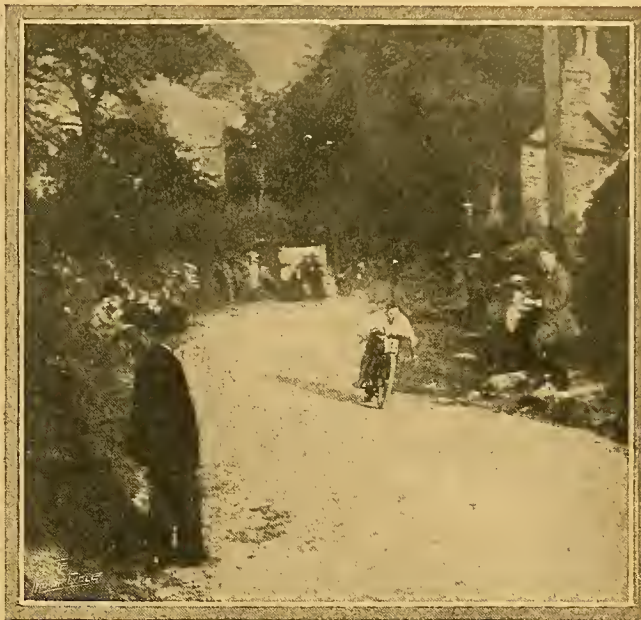
Class 11., 500 c.c., was scratched, F. W. Barnes being the only entrant.



# Manchester Club's Open Hill-climb.



L. Mogridge (3½ h.p. Mean-Precision) near the top.



H. Reed (8 h.p. Dot-Jap) on the first bend.

**P**EN-Y-BALL, Holywell, Flintshire, was the scene of another hill-climb on Saturday last, the Manchester M.C. being the organisers on this occasion. The police and citizens of Holywell are of sporting dispositions and received the motor cyclists with open arms, and one could have imagined oneself at Douglas during the Tourist Trophy races, so numerous were the riders to be seen in the streets.

The hill rises abruptly from the centre of the town with a reputed average gradient of 1 in 6, the course covered being about three-quarters of a mile. The surface has been greatly improved since the Mersey M.C. held a similar event there two months ago.

The somewhat twisty nature of the course did not bother the riders with the exception of H. Taylor (Bradbury), who came off at the first bend. Several surprises were caused, one being the defeat of H. Reed, but it is only fair to state that he got a very bad start.



A real lightweight. The 2½ h.p. Hobart, ridden by J. Dudley, the rider on the left, made a good climb. This machine scaled about 100 lbs.

On time the results were:

**CLASS I.**—Standard Touring Lightweights up to 350 c.c.  
Maximum weight limit, 140 lbs.

1. F. S. Whitworth (2½ Colmore-Douglas) ... 53½s.
2. S. W. Phillpott (2½ Humber) ... 1m. 16s.
3. H. C. Newman (2½ Ivy-Precision) ... 1m. 25½s.

**CLASS II.**—Standard Touring Machines up to 600 c.c.  
Maximum weight limit, 200 lbs.

1. V. E. Horsman (3½ Singer) ... 49½s.
2. H. Gibson (3½ Bradbury) ... 52½s.
3. F. S. Whitworth (2½ Colmore-Douglas) ... 56s.

**CLASS III.**—Unlimited.

1. J. J. Cookson (8 Matchless-Jap) ... 42s.
2. H. Marsden (7-9 Matchless-Jap) ... 44½s.
3. H. Reed (8 Dot) ... 46½s.

**CLASS IV.**—Racing Machines up to 600 c.c.

1. E. V. Horsman (3½ Singer) ... 48½s.
2. K. H. Clark (3½ Corah) ... 48½s.
3. H. Eardley (3½ Premier) ... 50s.

**CLASS V.**—Touring Cyclecars and Sidecars.

1. F. Shaw (8 Zenith-Jap) ... 1m. 5s.
2. E. Longden (8 Dot) ... 1m. 22½s.
3. A. W. Montgomery (8 Morgan) ... 1m. 28½s.

**FORMULA RESULTS.**

**CLASS I.**

1. F. S. Whitworth (2½ Colmore-Douglas).
2. S. W. Phillpott (2½ Humber).
3. H. C. Newman (2½ Ivy-Precision).

**CLASS II.**

1. V. E. Horsman (3½ Singer).
2. F. S. Whitworth (2½ Douglas).
3. J. Dudley (2½ Hobart).

**CLASS III.**

1. F. S. Whitworth (2½ Douglas).
2. H. Eardley (3½ Premier).
3. W. G. McMinnies (3½ Triumph).

**CLASS IV.**

1. V. E. Horsman (3½ Singer).
2. H. Eardley (3½ Premier).
3. F. S. Whitworth (2½ Douglas).

**CLASS V.**

1. H. Gibson (3½ Bradbury).
2. F. Shaw (8 Zenith-Jap).
3. E. Longden (8 Dot).



## RECORDS AT BROOKLANDS.



At the start of G. E. Stanley's attempt on the one hour single-cylinder record. In the picture may be noticed S. L. Bailey (on the left), Harry Long, H. V. Colver, and G. Cocker.

We heard late on Wednesday evening (Oct. 2nd) that G. E. Stanley was to make an attempt on the hour record on a  $3\frac{1}{2}$  h.p. Singer on the following day. The weather, however, though beautifully fine was very windy; in fact, so much so that Stanley postponed his attempt until 5.30 in the evening. This was much too late, and after a magnificent performance in which he kept inside record the whole time, he had to give up, as it was too dark to see. The first lap, from standing start, was covered at a speed of 65.05 miles an hour. His first twelve laps were covered at an average speed of 69.75 miles an hour, while several laps were covered at 69.98 m.p.h. In the

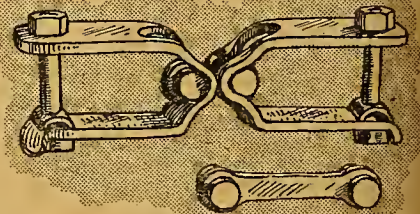
sixth lap he slowed up slightly, owing to the oil not going through properly and reduced his speed to 63.44 m.p.h. Save for this, his average speed throughout was well over 69 m.p.h. It was exactly a year ago that Stanhope Spencer went for the hour record, in which he also beat the fifty miles, covering that distance in 45m. 34.24s. Stanley, however, easily beat the latter record by covering the distance in 43m. 40s. and at an average speed of 68.70 m.p.h. During the afternoon Harry Long on his Singer sidecar combination went for a trial run on the track at the end of his long distance ride, and succeeded in doing his best lap at a speed of 37.63

m.p.n. This was due to the engine having a very low compression. At five o'clock in the afternoon, S. L. Bailey (Douglas) went for the five miles record, which he succeeded in beating. His time for the distance was 4m. 51 $\frac{1}{2}$ s., an average speed of 61.81 m.p.h. The previous best was by Harry Martin, who, on the 17th May, 1911, covered the distance in 5m. 1.2s., riding a one-cylinder Martin-Jap, 76 x 59.5 mm., 270 c.c.

Stanley again went for record on Saturday, and covered five miles in 4m. 14.4s. This gives a speed of 70.75 m.p.h., and beats the previous records in both Class C, held by Stanhope Spencer (Rudge), of 4m. 33.6s., and Class D, held by S. T. Tessier (Bat-Jap), 76 x 64, 580 c.c., of 4m. 18.4s.

## BELT FASTENERS.

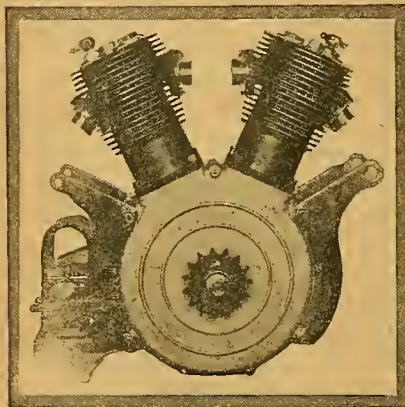
The latest Dall belt fastener is illustrated herewith, and it should be noted that steel liners, which formed a feature of this fastener, have now been discarded, as the swivel necks take all the wear. The connecting links are made from high tensile steel, such as is used for motor cycle chains. This steel has a breaking strain of 15 tons to the inch.



The method of securing the belt by bolts from underneath and nuts on the top, instead of tapping the bottom plate of the fastener, enables a much lower gear to be used without damaging the threads of an adjustable pulley. There are no hook ends, yet it is extremely easy to attach or disconnect the fastener.

## NEW PREMIER TWIN ENGINE.

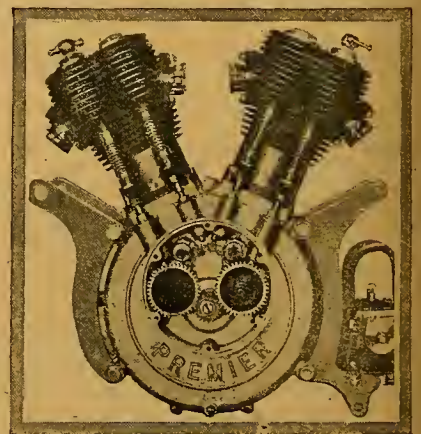
The Premier Co., of Coventry, have produced a 7-9 h.p. twin-cylinder engine for cyclecar work and for heavy sidecar combinations.



7-9 h.p. twin Premier engine.

The engine has a bore and stroke of 85 mm. x 88 mm. respectively; in fact, the cylinders are identical with those of the  $3\frac{1}{2}$  h.p. model, but without auxiliary exhaust ports. The connecting rods are fitted with large big end bearings, which work on a common crank pin. Extremely heavy flywheels have been fitted to ensure slow running, their diameter being 225 mm., or approximately 9 $\frac{1}{8}$  in. The timing gear is similar to that used on the  $3\frac{1}{2}$  h.p. twin, but the new engine has a chain-driven magneto. Adjustable tappets are fitted to all valves. Flanges are bolted to inlet and exhaust ports, and these hold their respective pipes by a clip action. This is a particularly good point in respect of the inlet pipe, as it renders it a simple job to make an air-tight joint. On the driving side the crankshaft is driven into the centre of the flywheel, and fastened to it by three rivets passing through a flange made with the shaft and a corresponding boss on the flywheel. The engine should be a great success for passenger work, and

will form the power unit of the new Premier cyclecar.



The timing gear cover removed.



## 1913 Model Baby Peugeot.

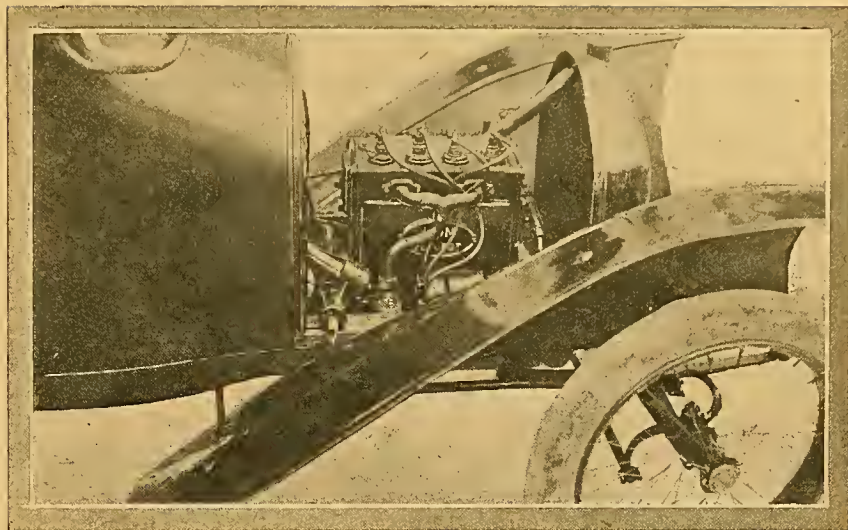
A NEW cyclecar which will shortly make its appearance in this country is one produced by the renowned firm of Lion-Peugeot, of Beaulieu, Doubs, and to be known as the Baby Peugeot. This firm has had a long experience in the manufacture of motor cycles and cars of all sizes—old pattern Peugeot light cars are running to this day—consequently the design adopted by the firm for a two-seater car of the lightest possible type will be studied with interest.

The engine is a four-cylinder with monobloc cylinder casting, the bore and stroke being 55 x 90 mm., giving a capacity of 856 c.c. The valves are mechanically operated, the inlets being arranged on one side and the exhaust valves on the opposite side of the engine. The carburetter and magneto—which is the ignition solely relied upon—are arranged in line on the off side of the vehicle. The carburetter unions are neat and accessible, as will be gathered from our illustration of the power unit, one branch feeding each pair of cylinders, as in standard car practice.

Water-cooling has been adopted, the gilled type radiator fitted in front being very slightly wedge shaped. The bonnet is of D shape and has louvers cut in the sides.

**The Frame and Body.**

The frame is of channel steel, and suspended on semi-elliptical springs. All control and brake levers are enclosed within the body. Steering is by worm and sector. No running boards are provided, but the mudguards are of ample width, the front guards having inside extensions. The body is of clean design, the high scuttle dash under which the fuel tank is fitted giving the car a compact appearance. We understand that this car complete with hood and screen



Showing the power unit, position of magneto and carburetter, and the water-cooled engine which has enclosed valves.

and lamps will be marketed for 1913 in the neighbourhood of £100. There is no example of this entirely new model in this country at present, but it is almost certain to be exhibited at Olympia, where it is sure to attract a considerable amount of attention.

**THE BOSCH WATER PROOF MAGNETO.**

We would again impress upon our readers the importance of fitting the high-tension wire to this type of magneto machine as directed by the makers.

Previous to describing how this should be done, a word or two of explanation is necessary. The ebonite recess from which the wire protrudes is a *cul-de-sac*, and water cannot leak through to the interior of the machine. It is, however, possible that in continuous rain, the recess may, if the wire is not fitted properly, become choked with wet and grit. When this happens, and the cable is externally wet, the current can leak from the terminal to the cable, and thence across the wet ebonite edge of the portion which fits against the end plates to the metallic plate itself. Now to obviate this chance altogether, firstly a wire of the correct size should be selected, and next the recess should be filled with melted paraffin wax (any sort of wax will do). Now the cable with the wire cut off flush with the end should be inserted and the screw at the back of the recess screwed up home through the cable and the interior wire to the terminal. A perfectly satisfactory joint is now made. The Bosch Co. will do it for those who do not care to undertake the job themselves. The Bosch Co. feel perfectly confident that, if their instructions be carried out, none of the troubles of which we have heard lately would be experienced. If is, of course, absolutely fatal if a stoppage occurs in wet weather to remove the end plate, as immediately wet enters the interior of the magneto matters are made much worse.



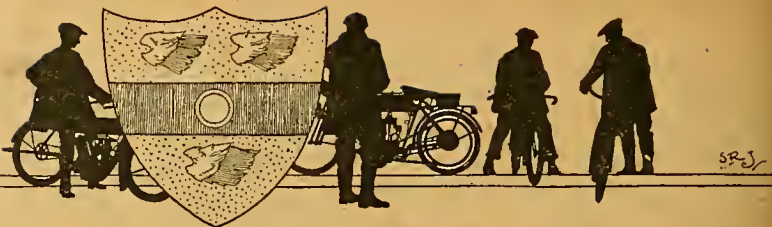
One of the cups to be presented by the Bosch Magneto Co., for competition during the 1913 season, among private owner members of motor cycle clubs.



The Baby Peugeot for 1913, a four-cylinder engine vehicle of 55 x 90 mm.



# CLUB NEWS



## Coventry and Warwickshire M.C.

The closing run and speed-judging contest will be held next Saturday, meeting at Wellesbourne at 2.45 p.m. prompt. Three prizes are offered. If five cyclecar drivers enter a fourth prize will be given.

## Burnley A.C.

The inter-club hill-climb v. Nelson M.C.C., held at Barby Hill, in ideal weather, resulted in an easy win for the Burnley club, which won five events to one win by the Nelson club. One event was won by a lady member.

## Northamptonshire M.C.C.

On the 5th inst. the members held their last competition of the year on Dodington Hill. It took the form of a flexibility hill-climb for the president's prize. The results were as follows: 1, C. T. Underwood (Bradbury); 2, W. Lees (T.T. Triumph); 3, C. J. Peck (Triumph).

## Hertfordshire M.C.C.

The articles of association have been issued. The membership, with the exception of a certain number of founder members, the list of whom is now complete, is confined to residents in Hertfordshire or within ten miles of its boundaries. The hon. sec. is Mr. F. E. Woods, 16, Eastcheap, London, E.C.

## Walthamstow M.C.

The above club held a team trial over a sporting course of sixty miles, with the following results: Winning Team—D. Fairhead (7 h.p. Indian and sidecar), T. Danaher (4 h.p. Indian and sidecar), and W. S. Low (3½ Scott and sidecar).

A 200 hundred miles reliability trial to Norwich and back was held on the 28th ult., with the following result: 1, A. E. Uffelman (6 h.p. Rex-Jap), silver cup.

## Nottingham and District M.C.C.

A reliability trial of one hundred miles was held on Saturday, the 28th ult., over a very hilly course, to Kettering and back, *via* Melton Mowbray, Oakham, Uppingham, and Rockingham. Fifty marks were deducted for failure to climb the observed test hills, and one mark was deducted for each minute lost or gained in controls. Results:

Rider and Machine.	Possible 500.	Marks gained.
1. J. King (2½ Premier) ...	500.	...
2. J. D. Mitchell (3½ Rover) ...	498.45	...
3. F. Welsh (2½ Humber) ...	498.15	...
4. G. Brough (6 Brough) ...	498	...
5. N. D. Soresby (3½ L.M.C.) ...	496.35	...
6. H. Dawson (3½ Bradbury) ...	496.30	...

## Brecon and Radnor M.C.C.

A hill-climb was held at Tumbledown Dick on the 2nd inst. Results:

### CLASS B (single gear machines up to 500 c.c.)

	Fig. of merit.
1. F. Phillips (3½ Rudge) ...	29.01
2. C. Nott (3½ Humber) ...	30.06
3. G. T. Jones (3½ Rudge) ...	32.46

### CLASS C (single gear machines up to 610 c.c.)

1. F. Phillips (3½ Rudge) ...	28.52
2. G. T. Jones (3½ Rudge) ...	31.15
3. C. Nott (3½ Humber) ...	32.84

### CLASS H (machines with one or more speeds; open).

1. H. Jones (3½ New Hudson) ...	36.04
2. C. Wild (6 Matchless) ...	41.46

### CLASS K (open to all comers).

1. T. Lloyd (3½ B.S.A.) ...	29.99
2. G. T. Jones (3½ Rudge) ...	31.15
3. C. Wild (6 Matchless) ...	45.41

Fastest time of the day.—C. Wild (6 Matchless).

## Canterbury and District M.C.C.

A hill-climb was held at Barn Hill, Wye, on the 26th ult., a hill about 700 yards long, with a maximum gradient of

1 in 6½. The formula in Classes I., II., and V. was

$$C \times T^2$$

as recommended by *The Motor Cycle*. T.T. machines penalised + 3s.; dropped handle-bars 1½s. Results:

CLASS I.—Any type of machine, including Pavillet Cup Competition.

Rider and machine.	Time in secs.	Result on formula.	Place
A. Baker White (3½ T.T. Rudge) ...	X + 10.3 + 3	373	1
G. Crump (3½ Rudge) ...	X + 13.2	371	2
S. D. Timson (3½ T.T. Rudge) ...	X + 14.3	314	3

CLASS II.—Any type of machine for members who have never won a prize in a fast hill-climb.

A. Baker White (3½ T.T. Rudge) ...	X + 10.3 + 3	373	1
L. Rumens (3½ Singer) ...	X + 18.8	327	2
T. Finn (3½ Premier) ...	X + 25.1	246	3

CLASS IV.—Speed-judging contest, standard time, 70s.

T. Finn (3½ Premier) ...	+ 38	...	1
G. Poxon (3½ Bradbury) ...	+ 37	...	2
L. Rumens (3½ Singer) ...	+ 46	...	3

CLASS III.—Club Sealed Handicap.

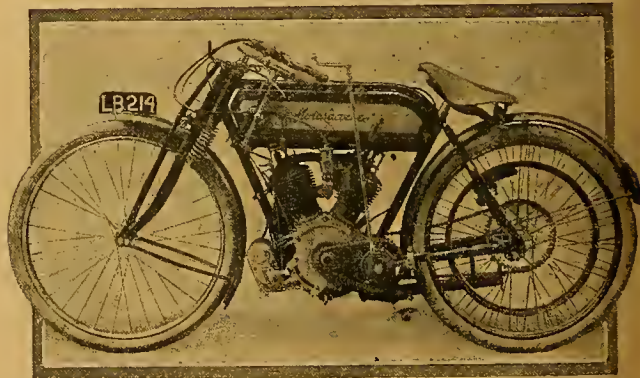
	Time in secs.	Handicap.	Place
S. D. Timson (3½ T.T. Rudge) ...	X + 7.6	X + 5.4	1
L. Rumens (3½ Singer) ...	X + 16.1	X + 5.7	2
Lt. H. Simonds, R.N. (3½ Trump) ...	X + 12.4	X + 7.6	3

CLASS V.—Fast climb on formula. Members might enter machines for other club members to ride.

	Time in secs.	Result on formula.	Place
S. Timson (3½ T.T. Rudge) ...	X + 7 + 3	434	1
G. Crump (3½ Rudge) ...	X + 10.5	422	2
Lieut. H. Simonds (3½ Trump-Jap) ...	X + 11.2	409	3

## TEAM RACE V. NAVAL OFFICERS' TEAM.

Rider and machine.	Points	Rider and machine.	Point
R. Henshaw (3½ T.T. Rudge) ...	376	Lieut. F. Simonds (3½ Trump-Jap) ...	386
A. Baker White (3½ T.T. Rudge) ...	374	Mr. C. W. Anstey (3½ Singer) ...	289
S. Timson (3½ T.T. Rudge) ...	314	Lieut. T. C. Bolster (Rudge-Multi) ...	268
C. Dawson (3½ 1908 Triumph) ...	258	Lieut. E. O. Disney (Rudge-Multi) ...	231
Total ...	1322	Total ...	1174



A twin-cylinder chain-driven Motosacoche of 6 h.p. Some details of this new mount are given on page 1142.



Members of the Manawatu-Feilding (N. Z.) M.C.C. who took part in the recent hill-climb held on Brickfield Hill.



#### Cambridgeshire M.C.C.

A novelty competition was held on the 26th ult. at Arrington. There was a large entry of members, and many of the tasks imposed were most amusing. An unexpected incident was the sudden appearance of the local policeman, who demanded to see everyone's licence. The prize winners were: 1 B. L. Peters, 2 H. J. Wallis, and 3 P. W. Cowell, all riding Rovers.

#### Cathcart District M.C.C.

A twelve hours' reliability trial was held on the 30th ult. The weather conditions were very bad, there being a heavy gale of wind and rain almost from start to finish. The competitors left Cathcart, Glasgow, at 8 a.m., *via* Abington, Lockerbie, Gretna, to Carlisle. Out of ten starters only six arrived in time at Carlisle. Only James Spence (9 Zenith sc.), G. W. Orr ( $3\frac{1}{2}$  Ariel), and J. E. Chisholm ( $3\frac{1}{2}$  Ariel) arrived home to time. Several competitors lost their way and were considerably delayed owing to the extremely dark night.

#### Hamilton and District M.C.C.

The club held a successful reliability trial on the 18th ult. under very severe conditions, and over a course of thirty-six miles, including two bad hills. All toolbags were sealed. The only accessories allowed were a repair outfit and two tyre levers. Those who finished the whole course in schedule time were: J. Low ( $3\frac{1}{2}$  Rudge), D. Fotheringham ( $3\frac{1}{2}$  Bradbury), J. Currie ( $3\frac{1}{2}$  J.A.P.), J. Sword ( $3\frac{1}{2}$  Singer), G. Copland ( $3\frac{1}{2}$  Triumph), W. Johnston ( $3\frac{1}{2}$  Bradbury), and R. Mc A. Walker (6 A.J.S.). The first award was a gold medal presented by Mr. J. Ledley. Hamilton.

#### The Motor Cycling Club.

The annual dinner and presentation of prizes will be held at the Adelaide Gallery on December 7th. There are nine cups and one hundred and seventy-six gold medals, forty-two silver medals, and nine bronze medals to be distributed. R. Croucher and S. T. Tessier have won four prizes each.

#### Sutton Coldfield and Mid-Warwickshire A.C.

The above club held their annual petrol consumption test on Saturday, September 28th. The route was from Sutton Coldfield to Lichfield and back, this course being covered twice, the distance in all being thirty-two miles. The awards were made on formula, an additional gold medal being awarded to the member averaging the greatest number of miles per gallon, irrespective of size or weight of machine.

$C \times W$

The formula used was  $\frac{C \times W}{P}$ . The route was practically

Petrol

devoid of hills, but there was a gusty wind. The gold medal was won by H. Newey, riding a  $2\frac{1}{2}$  h.p. Levis, whose consumption averaged 190 m.p.g. The results are as follows:

Rider and machine.	Formula.	Mileage to gallon.
CYCLES.		
J. L. Norton (4 Norton) ...	6770	135
Seymour Smith ( $3\frac{1}{2}$ Norton) ...	4571	138
F. W. Finnemore ( $3\frac{1}{2}$ Triumph) ...	4258	114
B. W. Lee ( $3\frac{1}{2}$ B.S.A.) ...	4254	128
SIDE CAR MACHINES.		
J. Woodhouse ( $4\frac{1}{2}$ Regal-Precision) ...	4996	68
P. Mosedale ( $3\frac{1}{2}$ Quadrant) ...	4079	64

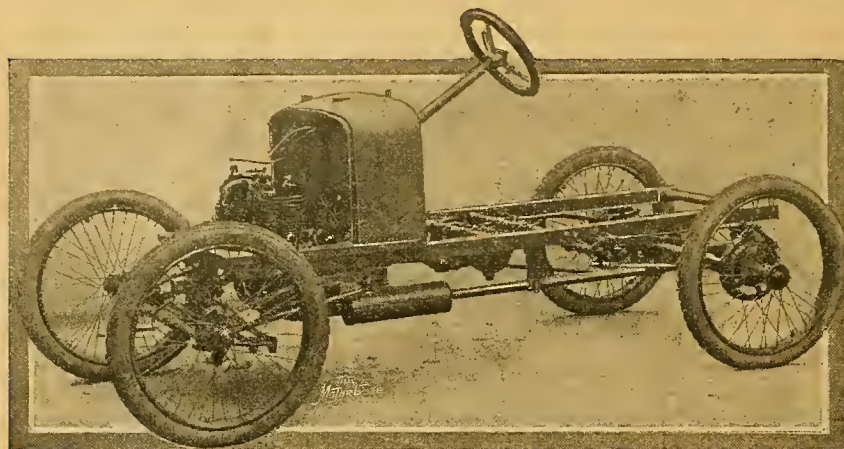


A club meeting of the New Zealand Motor Cycle Club, whose headquarters are at Wellington. All machines appear to be of British make.



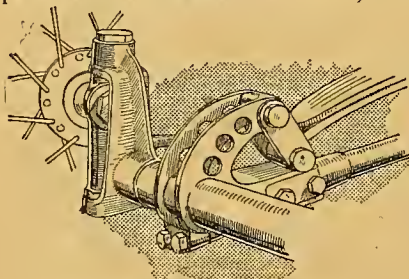
# THE WEST CYCLECAR.

Features : 8 h.p. air-cooled V type engine. Two-speed epicyclic gear. No differential.



Chassis of the 8 h.p. West cyclecar, showing general arrangement of parts.

A neatly designed cyclecar has just been built by Mr. E. J. West, of Coventry, who has had considerable experience in automobile construction, and



Front suspension of the West cyclecar on laminated springs

is a believer in the future of the light cyclecar. Last week we inspected the first machine made, and now publish explanatory photographs and sketches.

The engine is an 8 h.p. air-cooled Chater-Lea fitted with a large outside flywheel in which lies a leather-to-metal cone clutch. The power is transmitted through a universally jointed propeller-shaft to a bevel driven counter-shaft, on which is carried a simple two-speed epicyclic gear; thence to the solid rear axle by means of a single chain. The gears are operated by means of a side lever, a dog clutch serving to lock the gear solid to the shaft for the direct drive, while a rearward motion of the change-speed lever causes an external band to lock the low gear drum.

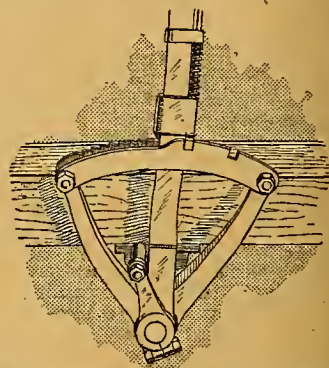
As mentioned above, the rear axle is solid and has no differential, but an ingenious slipping device is incorporated by means of which each rear wheel is driven through a friction plate, against which it is held by a powerful spring within the hub shell. The frame is of armoured wood, but the engine and gears are carried on a separate tubular under frame, and may be detached quite readily. The model we inspected was fitted with a Sthenos carburetter controlled by a

single lever on the steering wheel and an Eisemann magneto driven by chain from the crankshaft.

The steering is effected by a rack and pinion, and both axles are mounted on quarter elliptical springs.

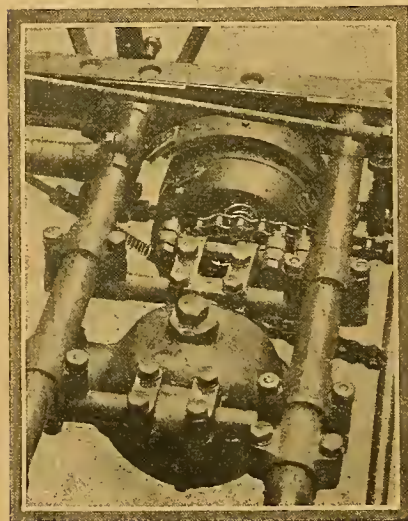
The petrol and oil tank are carried in the scuttle dash, and the body, which was in an unfinished condition at the time of our visit, has flush sides and is carried out in a single curve on each side.

26x2½ mm. Continental tyres are fitted, and are held in place by wing nuts. The machine has been designed throughout so

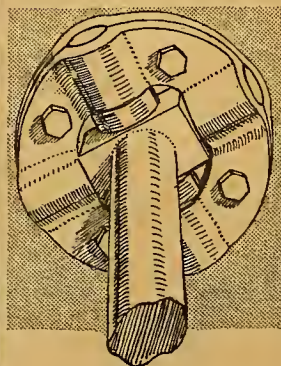


Change speed lever of the new West cyclecar. The two notches are for neutral and top gears, the ratchet is to contract the low speed band.

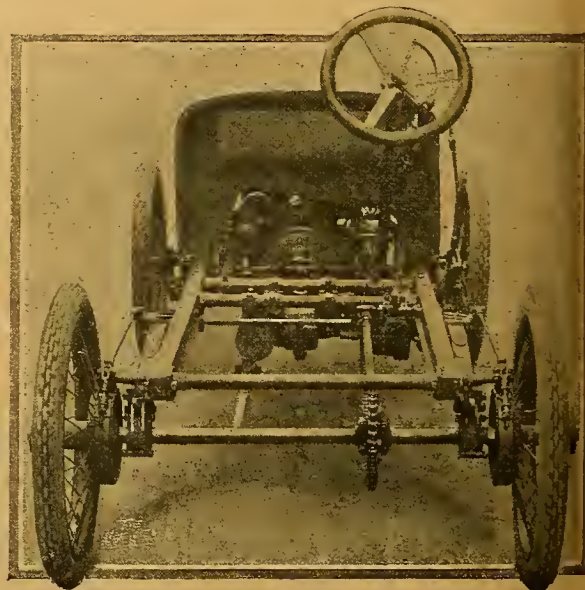
as to give the maximum strength for its weight, and at the same time to be quite simple even for the amateur to erect, if the component parts are purchased. The brakes on the rear wheels are of the contracting type, and on the first model the low gear band serves as a counter-shaft brake, but in future an auxiliary counter-shaft brake will also be fitted.



The two-speed epicyclic gear and bevel boxes.

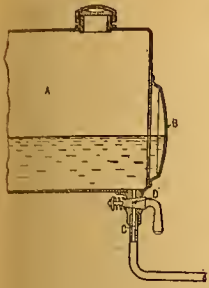


Design of universal joint.



The single short driving chain.



**An Oil Tank Idea.**

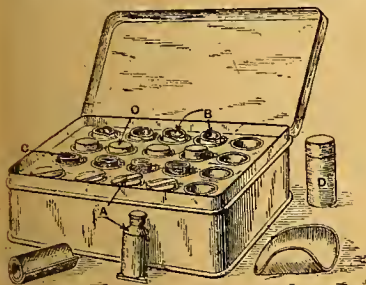
The oil tank A is provided with a diaphragm B, which can bend under pressure to force the oil along the pipe C when the tap D is open, a suitable air vent being provided.—H. and A. Dufaux et Cie., No. 6,442, 1912.

**The Canoelet Sidecar.**

The accompanying side and rear elevations illustrate the general lines of this sidecar, in which it is sought to enable the body to be arranged very low down. The longitudinal member consists of a single tube A bent round at the front, an upward extension being provided at the rear for attachment to the frame, as shown at B. The rear frame is bridged at C to pass over the wheel, the frame thus being supported on both sides of the wheel spindle. The suspension of the body by means of the leaf springs D and E is clearly shown.—F. W. Mead and T. W. Deakin, No. 21,045, 1911.

**A Tyre Repair Outfit.**

In this outfit the repair materials are cut to suitable sizes for single repairs, and the various elements are stored in receptacles so as to prevent damage.



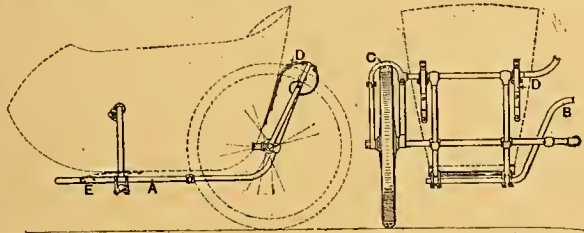
Thus, tubes of solution A, patches B, rolls of canvas C, and tubes of French chalk D, each sufficient for a single repair, are carried, as illustrated, facilitating tyre repair.—M. J. Schulte, No. 23,738, 1911.

**A Two-speed Hub.**

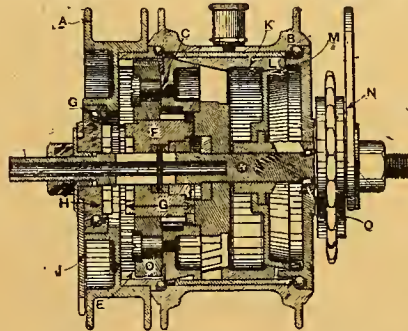
The hub comprises two main parts AB, the former carrying the belt pulley or other power transmitter, and the latter being spoked to the wheel rim. Within the hub is mounted a planet pinion carrier C having pinions D engaging an internally-toothed ring E fixed to the member A. The pinions D rotate about a sun pinion F, which is provided with dogs G on either side, whereby it may be engaged either with the planet pinion carrier C or with a member H anchored to the frame by a bar J. Within the larger part of the hub shell B is an expanding clutch K, comprising a gun-metal cylinder and a steel sleeve, the latter having internal coned faces L



engaging corresponding faces on the planet pinion carrier and on a member M which may be operated by an arm N to expand the clutch K into frictional engagement with the interior of the hub B. In operation, when the sun pinion dogs G are moved into engagement with



the dogs on the planet pinion carrier, a solid drive is transmitted to the clutch K, and therefrom to the hub member B. On moving the sun pinion dogs out of engagement with the planet pinion carrier into engagement with the fixed member



H, the planet pinions are free to rotate on their spindles, and a reduced gear ratio is provided. The hub member B is provided with a free-wheel clutch O, whereby the engine may be started up without driving the machine, when the clutch K is out of engagement.—W. C. Pinson and W. R. Blaxley, No. 21,480, 1911.

**A Three-speed Hub.**

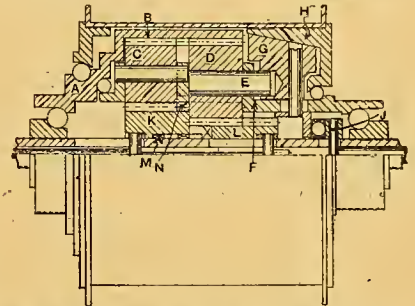
The belt pulley or other power transmitter is carried by a sleeve A, which is extended at B to form a wide internally toothed ring engaging planet pinions C D, rotating on spindles in a carrier E formed

**"The Motor Cycle" Photographs.**

Duplicates of photographs appearing in "THE MOTOR CYCLE" will be supplied at the following rates: Unmounted prints, half plate, 1/6 post free; mounted, 1/9 post free. This refers only to photographs taken by "THE MOTOR CYCLE."

Orders, which must be accompanied with remittance, should be addressed to the Photographic Department—Iliffe and Sons Limited, 10, Tudor Street, London, E.C.

on the driven sleeve F. This sleeve F carries a cone clutch member G engaging a corresponding member H fixed to the hub shell. The engagement is normally maintained by springs (not shown), but the member G may be withdrawn by the rod and pin J acting through the thrust bearing illustrated. The two sun pinions necessary to complete the epicyclic trains are shown at K and L and can be moved so that either is engaged with the dogs M on the fixed spindle. The sun pinion K is also provided with dogs N, whereby it may be locked to the planet pinion carrier E. When in this position the gear is solid and a direct drive is transmitted. To obtain the lower gears the sun pinions are moved into engagement with the dogs M on the fixed spindle, providing gear reductions corresponding to the proportions of the two trains. A



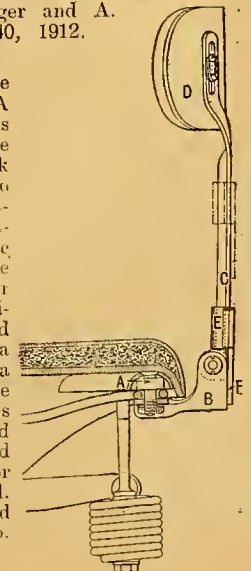
modified construction is described in the specification in which a double reduction can be obtained through both gear trains, providing a very low fourth speed.—M. Saunders, No. 15,343, 1911.

**A Driving Belt.**

This is a V belt in which the core comprises a central portion A of metallic canvas preferably folded into three layers as shown, and surrounded by ordinary canvas B, which is moulded into the belt C as usual. The metallic canvas comprises a fibrous warp and wire weft, and may be woven in strips of the requisite width, or cut from the piece.—H. W. Hassberger and A. Burnett, No. 940, 1912.

**A Back Rest.**

Secured to the saddle frame A are a pair of ears B which carry the pivot for the back rest support C to which the rest itself D is adjustably bolted. The support C may be moved into either a vertical or horizontal position and is locked by a slide E having a projecting tongue F which engages the ears B, and can be operated by hand, cable, or levers, as desired.—B. Brooks and H. Morrall, No. 26,194, 1911.





### An Interesting Presentation.

On the occasion of his marriage Mr. J. H. Slaughter was the recipient of a piano, subscribed for by his many friends in the motor cycle world.

### Birmingham to Carlisle and Back Run.

The winner of the P. J. Evans trophy in the Birmingham to Carlisle and back twenty-four hours' trial used a Senspray carburetter and Pedley belt.

### A Striking Success.

The winners of both Senior and Junior T.T. races at Brooklands rode machines fitted with a carburetter the patent rights of which have been acquired by the B.S.A. of Birmingham, who will shortly place it on the market.

### A Hobart Rider's Success.

At the Torbay and District M.C.C. hill-climb, Miss May Walker, riding a 2½ h.p. Hobart machine, was first on time and formula. Her time was 65½s., actually 7½s. faster than the next lady competitor.

### Calcium Carbide.

As readers may know, carbide is made in various qualities. Turco carbide is the outcome of much laboratory research, and is unaffected by air. The firm who manufacture it, Turco Ltd., Clayton, Manchester, guarantee a maximum gas yield per pound.

### South African Competitions.

The Excelsior trophy offered by the Rand M.C.C. for competition during the year has, we understand, been won by H. L. Weddell, riding a 3½ h.p. James. This is one of the most important competitions in South Africa, and has been run in three sections at intervals of three months. The results were based on hill-climbing and general reliability.

### Gold Medal Winners.

Two Monarch-Precision machines, ridden by E. Walker and V. Underhill, were represented in the Birmingham M.C.C. open twenty-four hours' trial to Carlisle and back, both gaining gold medals. It is interesting to know that these machines were fitted with Roc two-speed gears, and the riders reported at the finish that neither gear was touched during the whole run.



E. Walker and V. Underhill (3 Monarchs) who gained gold medals in the Birmingham to Carlisle-Birmingham Open Trial. Both machines are fitted with the Roc two-speed gear.

## SPARKLETS



### A New Tyre Firm.

The Burnett Motor Tyre Co., of Melksham, are opening new premises at the Valley Rubber Works, Limpley Stoke, near Bath. We understand the mill is being fitted with the latest machinery for the manufacture of the Burnett motor cycle and other tyres.

### "A Week in Waterproofs."

In addition to the firms mentioned in the issue of the 19th ult. as supplying a special kind of oilskin, the Service Co., Ltd., 292-293, High Holborn, W.C., write us that they not only supply the oilskins in question, but were among the first to announce this class of waterproof clothing for motor cyclists.

### A Unique Testimonial.

An advertisement in *The Times of India* for August 15th reads as follows: "The Triumph motor cycle is acknowledged to be the best machine made. 1908 models in stock, unique with improvements." The italics are ours. The correspondent who sends us this cutting says that the above is not a single misprint, but has been running for years. The Triumph Cycle Co. could not have a better testimonial.

### Anti-skidding Tyres.

The Skew non-skid motor cycle tyres are the production of Messrs. Oylers, Ltd., 35, New Cavendish Street, W. The tyres, we are informed, went through recent trials without a scratch and behaved most satisfactorily. Like the car tyres made by this firm, the motor cycle covers are cured under a pressure of threequarters of a ton, which brings about a thoroughly homogeneous cover, which does not cut readily and wears remarkably well.

### Irish End-to-end Record.

J. Stewart's Douglas on which he recently broke the Irish End-to-end Record was fitted with Hutchinson tyres.

The same make of tyres were used by Eric F. Remington, when he finished first in the last of the B.A.R.C. Races on the 28th ult. In a letter to the firm, Mr. Remington informs them that the front tyre has covered 4,500 miles on road and track, and the rear tyre about 1,500 miles—both are the ordinary beaded heavy ribbed pattern.

### Catalogues Received.

The illustrated advance sheet of motor cycle fittings made by the Bowden Brake Co., King's Road, Tyseley, Birmingham, has just reached us. This sheet illustrates Bowden controls, from the small single magneto lever to a control box for the steering wheel of a cyclecar. This control box has three levers, and is a neat method of controlling throttle, air and magneto in one fitting. It is attached to the centre of the steering wheel, and the levers come within easy reach of the driver's hand.

### Business Announcements.

We are informed that E. Folwell won the Leicester and District M.C.C. reliability trial held recently, and the high speed competition of the same club on Gaulois tyres.

H. H. Charge informs us that he has joined the depot staff of Rudge-Whitworth, Ltd., and is controlling their Leeds depot. He is well known throughout Yorkshire as an active rider.

The Car and Motor Sundries, Ltd., of which firm the managing director is Mr. W. T. Pritchard, has taken over the business of H. Martin and Co., Croydon, previously conducted by Harry Martin and S. R. Axford. The services of the two last mentioned well-known riders have been retained, and they will have full supervision of the works.

The style of the business of Godfrey and Applebee, Ltd., 208, Great Portland Street, W., has been slightly altered to cope with the expansion of trade, and in future the business will be divided into two distinct establishments. That of Godfrey and Applebee, Ltd., 87, Great Portland Street, W., will conduct the Scott agency, under the management of F. A. Applebee. Here a large and well-equipped workshop will be installed for handling any necessary repairs and tuning up this make of machine. The original business (dealing in new and second-hand machines) will be conducted by O. C. Godfrey, and will be known as Godfreys, Ltd., 208, Great Portland Street, W.

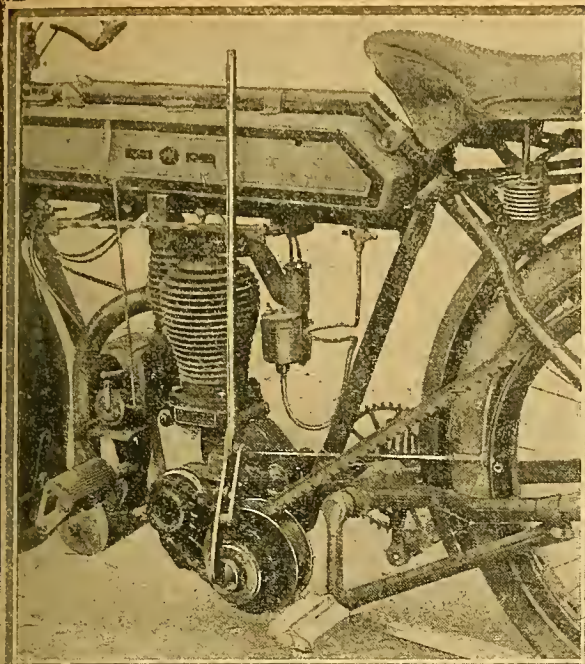
### The Manufacturers' Union Trophy.

The annexed illustration shows the Manufacturers' Union Trophy, specially designed by Messrs. Elkington, which is fifteen guineas in value. These trophies are offered by the Manufacturers' Union



for the encouragement of the sport and pastime, and are to be won outright. They are awarded at the discretion of the clubs promoting the events for the best performances of private owners.





"MABON" VARIABLE GEAR gives 8 speeds and free engine. Suitable for sidecar and so on work. Easily fitted to Triumph, Precision, Rudge, Single and Twin J.A.P. Belt always in tension. Large diameter of pulley for low gear. Simple and reliable.

PROMPT DELIVERY. PRICE 7 GUINEAS.

MABON MOTOR WORKS, High Rd., North Finchley, N.

"Nothing Succeeds like Success."

:: THE ::

## Mon-Aero-Guard

(W. MAUGHAN'S PATENTS)

Is already the Standard Front Mudguard for Motor Cycles.

One day's mail contained orders for nearly

**400 GUARDS.**

Leading Manufacturers fitting as Standard—i.e., on entire output—for 1913.

**To Agents:** Write in, and fix up NOW—at the Show may be too late.

**To Riders:** Specify and insist on it being fitted to your new machine, at very slight extra cost, if any. Owing to the great trade demand a certain proportion of output is reserved for YOU, but see your nearest Agent NOW, if not in stock write direct, enclosing crossed P.O. for 12/6.

**The COVENTRY AUTO-AERO CO., LTD.,  
COVENTRY.**

Telegrams: "Monsoon, Coventry."

'Phone 911.

London Agents: Robertsons, Gt. Portland St., W.

# End of the SEASON SALE OF MOTOR CYCLES AT HARRODS

**50 MACHINES  
MUST BE CLEARED.**

**ALL NEW MACHINES.  
GENUINE REDUCTIONS**

**HARRODS Ltd.** RICHARD BURBIDGE,  
—Managing Director.—  
BROMPTON ROAD, LONDON, S.W.



Easy Starting - Easy Running.

**AIR COOLED**

**"Filtrate"**  
REGISTERED  
FOR  
MOTOR CYCLES

Sole Makers:

**FILTRATE WORKS, LEEDS.**

**AMAC** **AMAC**

**Sutton Coldfield and Mid-  
Warwickshire A.C. Petrol  
Consumption Test, held on Sept. 28**

**Result:** H. Newey, 2½ h.p. two-stroke  
Levis, won **GOLD MEDAL**,  
averaging 190 miles to the  
gallon.

J. L. Norton, 4 h.p. Norton,  
secured 1st place on formula.

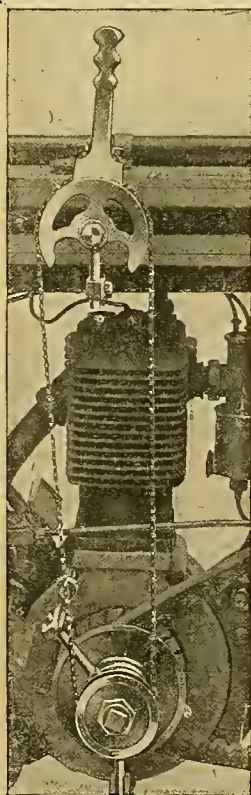
J. Woodhouse, 4½ h.p. Regal  
Precision and Sidecar, was  
**FIRST** in the Sidecar Class.

**ALL USED**

**AMAC CARBURETTORS.**

**ASTON MOTOR ACCESSORIES Co. Ltd.**  
Telford Street, Aston, **BIRMINGHAM.**

**AMAC** **AMAC**



Showing complete gear.

**ADVANTAGES**  
of the  
**BRAMPTON**  
**VARIABLE**

**GEAR and FREE ENGINE.**

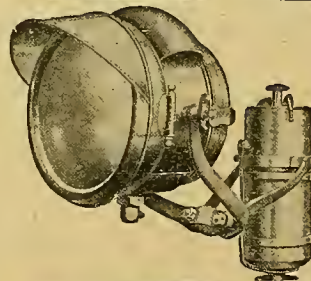
(Immediate delivery of 2½ h.p. type.)

It gives a positive drive in  
wet as well as dry weather.  
No slip even at bottom speed,  
gives Seven speeds and free  
engine, simple in construction,  
light and easily attached.  
The gear is very easy and  
simple in action either for  
starting or changing up or  
down. The drive is taken  
up as sweetly as could be  
desired.

Write for full illustrated  
: : booklet free. : :

**BRAMPTON BROS. Ltd.**  
Oliver Street, Birmingham.

**F. R. S.**  
**LAMPS AND GENERATORS,**  
HOLD WORLD'S RECORDS.



**1,200 feet Beam,**  
**78/6**

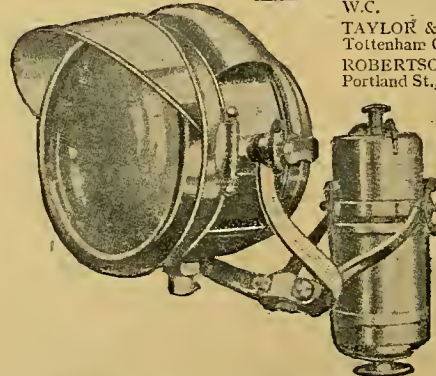
**1,000 feet Beam,**  
**68/6**

**800 feet Beam,**  
**47/6 to 58/6**

**SPECIAL AGENTS:**  
**SERVICE CO.,** High Holborn,  
W.C.

**TAYLOR & CO.,** 21, Store St.,  
Tottenham Court Road, W.

**ROBERTSONS,** 157, Great  
Portland St., W.



**HALL,**  
**LTD.,**

Wrettesley Street  
Birmingham.

60, Shoe Lane,  
London, E.C.

Swinton Row,  
Edinburgh.

24, Queen Street,  
Glasgow.



## MOTOR CYCLES BY EASY PAYMENTS

Whiteleys can supply ANY MAKE OF  
MOTOR CYCLE or CYCLECAR on the  
EASIEST OF EASY TERMS.

Interest Charge from 2 per cent.  
(Carriage Paid.)

### A TEN POUND NOTE

secures delivery, and you can pay the balance  
afterwards by twelve monthly instalments.

### WHY WAIT 6 WEEKS WHEN WE HAVE IN STOCK

Premiers  
Bradburys  
Triumphs  
Indians  
Douglas  
Rex-Japs

Aleyons  
New Hudsons  
A.C. Sociables  
Humbers  
Singers  
Motosacoche

Bats  
Zeniths  
Hobarts  
Clynos  
P. & M.'s.  
Rudges

Special agents for Rollo cars.

# WHITELEYS

—QUEEN'S ROAD, LONDON, W.—

IMMEDIATE DELIVERY from  
MORECAMBE or the WORKS.

## A.C.'S, MORGANS, G.W.K.'S.

BEST OF TERMS, CASH OR  
DEFERRED.

*Write for particulars.*

Clearance list of second-hand  
machines, and of accessories  
awaiting your acceptance.

## HITCHEN'S LTD., MORECAMBE.

Telephone 112. Wires—Hitchen's Ltd., Morecambe.

**MOTOR CYCLE  
SIDECAR  
LAMPS**

PRICE  
**21/-**



Complete Outfit, comprising  
Lantern Flexible Conducting  
Cord, Metal Filament Bulb  
Switch, 5½-volt Giant Volex  
Battery, ready for use. Can be  
fitted in a few minutes.

**PRICE £1 1 0.**

Full particulars of useful Electric  
Accessories for the Motor Cycle. See  
our M. & E. Catalogue on application.

**WARD &  
GOLDSTONE,**

Contractors to H.M. Government,  
**Salford, MANCHESTER.**  
Telephone: 7084-5-6 Central.  
Telegrams: "Multum, Manchester."



**THE  
BLUEMEL  
MASCOT  
:: PLUG ::**

- WILL** get the last ounce out  
of your engine.
- WILL** stand up to the hardest  
work it can be possibly  
put to.
- WILL** do so consistently for  
a greater length of time  
than any other plug.
- WILL** regularly fire the  
weakest mixture, and
- WILL** give you the much  
desired immunity from  
ignition troubles.

*Write for List, Motor Cycle Dept.,*  
**C. W BLUEMEL & BROS.**  
WOLSTON, near COVENTRY.

MODEL S for motor Cycles.

In answering these advertisements it is desirable to mention "The Motor Cycle."



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

### SECTION II.

York and Lancashire.

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

### SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hafts, Channel Islands.

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

### SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

### SECTION X.

Scotland.

### SECTION XI.

Ireland and Isle of Man.

## IT WILL PAY YOU TO SEE

the great stock of newest models of every leading make, and the display of desirable bargains in slightly soiled and second-hand machines, and also to study the quite matchless low prices quoted at



# WAUCHOPES

Call now, or get to-day's list, which includes—

6050.	3 1/2 h.p.	1908 2-speed N.S.U.	£16 10
6051.	2 1/2 h.p.	BRADBURY	£6 10
6052.	3 1/2 h.p.	1912 RUDGE Multi	£47 10
6053.	3 1/2 h.p.	MINERVA	£8 10
6054.	3 1/2 h.p.	1912 free-engine TRIUMPH	£46 0
6057.	3 1/2 h.p.	1912 standard TRIUMPH	£39 0
6059.	3 1/2 h.p.	1911 F.E. TRIUMPH	£38 0
6061.	5 h.p.	1911 twin REX DE LUXE	£37 10
6062.	3 1/2 h.p.	1910 standard TRIUMPH	£32 0
6063.	3 1/2 h.p.	1909 BRADBURY	£22 10
6069.	4 h.p.	1911 Free-engine INDIAN	£32 10
6073.	5 h.p.	1909 Twin REX	£22 10
6081.	3 h.p.	M.M.C. Runabout	£22 10
6086.	3 1/2 h.p.	1912 2-speed HUMBER	£44 0
6085.	3 h.p.	1911 T.T. MATCHLESS	£50 0
6040.	8 h.p.	1912 3-speed CHATER and sidecar, No. 7 mod.1	£67 10
6041.	2 1/2 h.p.	1912 Free-engine SINGER	£35 0
6007.	2 1/2 h.p.	1911 DOUGLAS	£26 10
6004.	3 1/2 h.p.	1912 3-speed BRADBURY and sidecar	£62 0
5939.	3 1/2 h.p.	1912 ZENITH GRADUA	£45 0
5987.	6 h.p.	1911 CLYNO and Clyno sidecar	£50 0
5986.	6 h.p.	1911 CLYNO	£35 0
5983.	3 1/2 h.p.	1911 2-speed BRADBURY	£35 0
5981.	5-6 h.p.	1912 A.C. SOCIABLE	£79 0
5980.	5-6 h.p.	1911 4-cylinder F.N.	£28 0
5975.	3 1/2 h.p.	1912 F.E. BRADBURY and sidecar	£40 0
5968.	8 h.p.	1912 2-speed BAT, chain drive	£60 0
5947.	3 1/2 h.p.	1909 DOUGLAS	£20 0
5908.	3 1/2 h.p.	1910 CENTAUR	£20 0
5904.	6 h.p.	1912 Speed King REX, new	£40 0
5901.	5 h.p.	1911 cone clutch REX	£30 0
5883.	3 1/2 h.p.	1911 F.E. PREMIER	£33 0
5882.	2 1/2 h.p.	1910 ROYAL ENFIELD	£18 0
5870.	3 1/2 h.p.	1912 ZENITH GRADUA	£42 10
5861.	6-7 h.p.	BAT-J.A.P.	£22 10
5850.	3 1/2 h.p.	4-cylinder F.N.	£18 0
5834.	5 h.p.	1911 tourist REX	£30 0
5812.	2 1/2 h.p.	1911 MOTOSACOCHE, free engine	£22 0
5809.	2 1/2 h.p.	1911 T.T. J.A.P.	£23 10
5799.	3 1/2 h.p.	1911 T.T. BRADBURY	£23 0
5788.	3 1/2 h.p.	1912 2-speed HUMBER	£42 10
5786.	2 1/2 h.p.	1912 3 sp. NEW HUDSON	£37 10
5776.	5 h.p.	1911 twin REX DE LUXE	£37 10
5767.	3 1/2 h.p.	1912 F.E. ROVER	£42 10
5742.	3 1/2 h.p.	1910 T.T. TRIUMPH	£32 10
5732.	2 1/2 h.p.	1912 2-speed ENFIELD	£42 10
5621.	2 1/2 h.p.	1912 2-speed HUMBER	£37 10
5606.	5-6 h.p.	1908 2-speed F.N.	£20 0
5600.	2 1/2 h.p.	GRIFTON	£15 0
5596.	3 h.p.	1910 KERRY ABINGDON	£30 0
5599.	3 h.p.	1908 TRIUMPH	£25 0
5539.	3 1/2 h.p.	1910 free-engine PREMIER	£24 0
5441.	3 1/2 h.p.	1911 standard BRADBURY	£30 0
5420.	2 1/2 h.p.	1911 2-speed ENFIELD	£35 0
5346.	2 h.p.	2-stroke lady's	£7 10

**ALL-ROUND REDUCTIONS** are continued on nearly 300 stock machines, and most liberal exchange still for your present mount in part payment of a new one.

9, Shoe Lane,  
Fleet Street,  
LONDON, E.C.

'Phone: 5777 Holborn.

Wires:  
"Opifcer, London."



## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under to the fee is rs. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Hiffe & Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

1912 Triumph, T.T. roadster, perfect condition; £38, bargain.—Whittaker, High St., Sunderland. [X7478]

3 1/2 h.p. Quadrant, Bosch, 1911 B. and B., new tyres, tubes, all spares, including valves; cheap.—Taylor, 62, Thornton St., West Hartlepool. [X7227]

2 1/2 h.p. 1910 Twin Moto-Reve, 1912 mag., Watwata 4 belt, Continental tyres, splendid order; £18/10.—Fearnside, photographer, Penrith. [X7549]

3 1/2 h.p. N.S.U., mag. ignition, h.b.c., Whittle belt; a 32 bargain; £12/12.—Torrey and Co., The Motor House, Sunderland. [X4816]

3 1/2 h.p. 1911 Triumph, T.T. roadster, h.b., fastest 32 Triumph in the north, guarantee this bike to do 65 m.p.h. on the level, not ridden 1,500 miles; a bargain, £37.—Torrey and Co., The Motor House, Sunderland. [X4817]

3 1/2 h.p. Triumph, 1911, free engine, in perfect order, 32 not done 2,000 miles, lamp, horn, watch; a bargain, £40; inspection and trial invited.—Torrey, The Motor House, Sunderland. [X4818]

3 1/2 h.p. T.T. B.S.A., new, £48/10, for immediate delivery; 3 1/2 h.p. Triumph, free engine, new, £55, immediate delivery; new Humber canoet, £12/12, just delivered; new torpedo sidecar, patent apron and cover, £11/11; sole agents for B.S.A., Triumph, Humber, Royal Enfields, etc., motor cycles.—Torrey and Co., The Motor House, Sunderland. [X4819]

INDIAN, 7-9 h.p., 1912, free engine model, not done 3,000 miles, in good condition; with speedometer, Brooks carrier bag, etc.—£57.—Gibbs, Darlington Rd., Ferryhill. [X7159]

TRIUMPH, 3 1/2 h.p., speedometer, watch, horn, lamp, in perfect condition, also full insurance; a bargain, £29/10.—Robinson, 49, Grosvenor Place, Newcastle-on-Tyne. [X6364]

ROVER, 1912, Armstrong 3-speed sidecar hmb, P.R.S. Major lamp set, Jones speedometer, with trip, watch, and horn complete with spares, in excellent condition, tyres new; £55.—Clark, 15a, Lonsdale St., Carlisle. [X7323]

TRIUMPH, free engine, Sept., 1909, new Dinko belt, tools, lamp, horn, also standard Triumph, Sept., 1908, recently overhauled, new heavy tyres, both in splendid condition; offers.—Hill, chemist, Sneyd Moor. [X6503]

### SECTION II.

York and Lancashire.

1912 Scott, as new; £56.—Ewbank, Castleford. [X6338]

MATCHLESS-J.A.P., 7 h.p., in thorough order; £27.—Bennett, 34, Dickenson St., Wigan. [X7296]

1912 P. and M., as new, with £12/12 sidecar, lamp, and horn; £65.—Ewbank, Castleford. [X6340]

1908 Triumph, just been replated and re-blacked by makers, like new; £26/10.—Ewbank, Castleford. [X6341]



# WE URGENTLY

Require a large number of Accumulator Rex Machines, and until the demand is satisfied we are prepared to offer unprecedented allowances for them in part payment the under-mentioned

## NEW REX BARGAINS.

Maker's Price. Our Price.

1911-12 3 1/2 h.p. Tourist.....	£45 3	34 guineas
1911-12 3 1/2 h.p. 2-sp. de Luxe	£59 17	46 guineas.
1911-12 5 h.p. 2-sp. Twin de Luxe, special price	£51 Gns	
1912 2 1/2 h.p. 2-speed Rex Junior de Luxe	£45 0	
1912 4 h.p. Tourist, 8 1/2 bore x 95 stroke	£46 0	
1912 4 h.p. 2-speed de Luxe, handle starting	£56 0	
1912 6 h.p. 2-speed Twin de Luxe	£62 10	
1912 6 h.p. 2-speed Twin de Luxe, chain drive	£70 0	
1912 6 h.p. 2-speed Coach-built Sidette	£75 0	

**SOLD UNDER MAKER'S GUARANTEE.**

## SECOND-HAND REXES.

REX, 1912, 4 h.p., 2-speed de Luxe, 200 miles	£45 10
REX, 1912, 2-speed, Junior, 100 miles	£29 10
REX, 1912, 6 h.p. Twin de Luxe, 2 speeds	£49 10
REX, 1912, 2-speed, de Luxe	£49 10
REX, 5 1/2 h.p., Twin, spring forks	£16 10
REX, 1912, 4 h.p., Tourist, done 200 miles	£38 10
REX, 3 1/2 h.p., magneto, free engine, 1909	£26 10
REX, 3 1/2 h.p., magneto, spring forks	£19 19
REX, 2 1/2 h.p., magneto, lightweight, h.b. con.	£16 10
REX, 1909, 5 h.p., 2-speed, Rex de Luxe	£29 10
REX, 1910, 5-6 h.p., Twin, very fast	£29 10
REX, 1911, 3 1/2 h.p., 1912, mag., shop-soiled	£2 Gns.
REX, 3 1/2 h.p., light and low, h.b. control	£12 10

**EASY PAYMENTS QUOTED AT KEEN RATES.**

## MISCELLANEOUS MACHINES.

TRIUMPH, 1910, clutch, splendid	£35 0
ROVER, 1911, Clutch Model, cost £55	£39 10
HUMBER, 1911, 3 1/2 h.p., Tourist, little used	£29 10
PRECISION, 3 1/2 h.p., magneto, Druids	£32 10
F.N., 4-cylinder, 1911, late model	£29 10
ROYAL ENFIELD, Twin Lightweight, mag.	£19 10
ANTONE, 6 h.p., magneto, Saxon forks	£21 10
OLYMPIA, 4 h.p., vertical engine	£21 10
KERRY, 2 1/2 h.p., vertical engine	£9 10
MOTO-REVE, 1911, single, good	£23 10
4 1/2 h.p. Twin MINERVA, h.b.c., spring forks	£16 10
ROG, 4 h.p. 2-speeds, handle starting	£23 10
CHATER-LEA-MINERVA, 2 1/2 h.p., Nala	
2-sp., spring forks, Model de Course tyres	£16 10
WHITE & POPPE, 3 1/2 h.p., mag., spring frame	£16 10

Easy Payments quoted on any machine.

## 1912 SIDECARS.

Illustrated List on application.

"Exchange," with Continental tyre	£5 5
"De Luxe," with best tyre, apron, footmat	£6 6
"De Luxe," with special side entrance body	£7 10
"De Luxe," with best coach-built body	£7 12

Improved quick-detachable joints, cranked extra strong hack axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

## SUNDRIES.

Lycett's Large Size Motor Saddle, new	9/6
New 800ft. F.R.S. Lamp, grid generator	35/-
Twin Rex de Luxe, less engine	£7 10
Phoenix Forcex, less tyres	17/6
Shop-soiled Cane Sidecar Body	16/6
Wicker Sidecar Body	10/-
1912 Bradbury 2-speed Gear, NEW	£7 0
24 x 2 1/2 Clipper Covers, 10/6; Tubes	5/9
£12 rzs. Montgomery Sidecar, almost new	£6 6
XL All Spring Forks	8/6
Myers Motor Cycle Stand	3/3
Fuller's 20-amp. Accumulators, NEW	11/9

**The Halifax Motor Exchange**

Largest Rex Dealers,

**16, WESTGATE, HALIFAX.**

'Phone: 766.

Telegrams: "Perfection."

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A41

## MOTOR BICYCLES FOR SALE.

THE North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 285.

WE invite inspection: every machine exactly as represented.

1912 Clyno and Sidecar, well equipped, perfect order, only done 900 miles, £70 a real Frank Smith; 1912 Scott, in beautiful condition, £55; brand new 5 1/2 h.p. overhauled Matchless-Jap, 6-speed, in stock; cash or exchange; 1912 3 1/2 h.p. N.S.U. twin with 2-speed gear, only done 250 miles, £38; 1911 free engine Singer, a beauty, £38; 1910 free engine Triumph, £36; 1908 Triumph, just been overhauled by Triumph Co., £25; 1910 3 1/2 h.p. Rex Speed King, just been overhauled, new pulley and tyres, £28; 5 1/2 h.p. V.S., twin mag., good tyres, £20; 3 1/2 h.p. V.S., with 2-speed gear, Bosch mag., White belt, grand gear, £18. We invite offers from beginners for the following: all of which are in good order, must be sold, no reasonable offer refused; 1907 3 1/2 h.p. Rex, spring forks, accumulator, good tyres; 1906 5 1/2 h.p. twin Rex, in splendid condition, spring forks, new dry battery, Whittle belt; Motosacoeche, in splendid condition, Druid forks, new Dunlop back cover, 1 1/2 h.p.; 3 1/2 h.p. Quadrant mag., B.B. carburettor, good tyres; 3 1/2 h.p. Minerva mag., h.b.c.; 6 1/2 h.p. Humber car, 2 seat, Stegany spare wheel, good tyres, nice appearance, 3 speeds and reverse, complete with lamps, ready to drive away, £18. Let us quote you for your new mount: your enquiry will receive our most careful and immediate attention. [X7386]

NEW 3 1/2 h.p. Rover, and 2nd-hand ditto, to be sold cheap.—J. Cooke, Sandbach. [X6056]

3 1/2 h.p. Rover Motor Cycle, free engine, as new.—3 1/2 Smith, Welsh Row, Nantwich. [X6053]

HUMBER, 1912, 2 1/2 h.p., twin-cyl., 3-speed, new, shop-soiled only; £44.—Gael Square Motors, Stafford. [X6412]

£5.—Rex, 3 1/2 h.p., accumulator, splendid running order, good tyres; bargain, must sell.—Mitchell, Walsall. [X7387]

WHAT Offers?—3 1/2 h.p. Minerva, good condition, h.b.c., free engine, tyres nearly new.—W. In stone, Broseley. [X7268]

1909 Standard Triumph, in good condition, new Palmer cord cover, lamp, horn, tools.—Lloyd, Gael Rd., Stafford. [X7344]

1912 F.E. Triumphs in stock, £55; 1912 F.E. Triumph, not ridden 500 miles, £50.—Jones, motor agent, Efailnewydd, Pwllheli. [X7318]

1912 5-6 h.p. Rex, free engine, equal to new, many spares; sacrifice £37/10, or with sidecar £44.—Wedge and Co., Willehall. [X7038]

MOTOSACOCHE, 1 1/2 h.p., Bosch, Whittle, tyres un-punctured, excellent condition, horn, tools; £17.—Brooklyn, Newton, Alfreton. [6532]

T.T. Twin Matchless, 10 h.p., hardly used, £50; T.T. twin, 1911, 4 h.p., in perfect order, £30; any trial with either—184, Witton St., Northwich. [X7338]

LEVIS, 1911, new studded tyres, unsundered, Lucas lamp, T.T. and touring bars, perfect; nearest £25; bought sidecar.—News, Tabley, Knutsford. [X7264]

1911 Champion-Pengoot, 3 1/2 h.p., m.o.v., B. and B., Druid, Bosch, new Dunlop belt; bargain, £25.—Bingham, 70, High St., Tisbury, Derbyshire. [X7117]

1912 T.T. Bradbury, with Binks and all spares, very fast, special machine; approval anywhere; £36.—Box No. 1,489, The Motor Cycle Offices, Coventry. [X6694]

PREMIER, F.E., 3 1/2 h.p., 1911, Lucas lamp, horn, Dunlops, in splendid condition; £36, or nearest offer.—A. N. Powell, The Eagles, Newtown, M. nt. [X7305]

MOTOR Cycle, 3 1/2 h.p., Chater-Lea, excellent tyres and tubes, nearly new front tyre, and Advance pulley new, strong built; £5.—C. Howells, Sandifer, Holme Chapel. [6330]

ROYAL Enfield, 2 1/2 h.p. twin, late 1910, free engine, all accessories, perfect order, getting sidecar machine; bargain, £18.—Rock, Goldthorn Hill, Wolverhampton. [X7335]

1912 Model K. Douglas, done 270 miles, new 23rd of September, £44; with speedometer £46; not soiled.—Apply, Professional, Whittington Barracks, Golf Club, Lichfield. [X745]

DOUGLAS, late 1911, £50 model, clutch and 2-speed gear, in splendid condition, complete with lamp and horn; £32; any trial or examination.—Howell, Leamore, Walsall. [X7309]

BARGAIN—1912 free engine Bradbury and sidecar, cost £63, new wheels, scarcely used; must sell, accept £50, nearest Triumph part.—Thos. F. Watton, Ryecroft, Ripley, Derby. [X7390]

1912 2 1/2 h.p. Twin 2-speed Enfield, £32 each; also 1911-12 3 1/2 h.p. B. fitted last month with B. and M. 2-speed, and overhauled; £35; property of officers.—Fox, Lichfield Barracks, Staffs. [X7383]

1 1/2 h.p. Motosacoeche, Druid spring forks, very low, new Dunlop studded cord, accumulator, complete with stand, carrier, etc., splendid order; bargain, £7/10.—W. Jones, 64, Rhosddu Rd., Wrexham. [X7263]

TRIUMPH, splendid condition, Palmer cord and tube, unpunctured on back; any trial; riding like new, lamp, horn, spare tube, etc., only wants seeing; bargain, £31.—35, Arboretum Rd., Walsall. [X7377]

1912 Free Engine Model Bradbury, 3 1/2 h.p., condition as new, run about 300 miles; cost £54/10; must sell! approval anywhere at £39/10.—Box No. 1,487, The Motor Cycle Offices, Coventry. [X6687]

# REY

(THE NAME WITH A REPUTATION. Established 1900.)

**5, HEATH HAMPSTEAD.**

Close to Hampstead Tube Station.  
Tel.: "Rey, Hampstead." Tel.: 2678, P.O., Hampstead.

**EXTENDED PAYMENTS.**

**NO EXTRA CHARGE**

**on LIST AS UNDER—**

**BRADBURY'S, BATS, RUDGES, MATCHLESS, CLYNOS, ZENITHS, SINGERS, DOUGLAS, HUMBERS, ENFIELD, NEW HUDSON, PREMIER, TRIUMPH.**

**ALL NEW 1912 MODELS, until further notice.**

**1 DOWN. BALANCE TWELVE EQUAL MONTHLY PAYMENTS.**

**FOR CASH ONLY**

1912 SHOP-SOILED MACHINES, otherwise new.

RUDGE, Multi-speed	£50
SINGER, 4 h.p., 2-speed	£54
BRADBURY, F.E. Model	£43
BRADBURY, T.T. Model	£38
RUDGE, T.T. Roadster	£39
ZENITH, 6 h.p.	£58
TRIUMPH, F.E. Model	£42
DOUGLAS, Model H.	£42
CLYNOS, 5-6 h.p., 2-speed	£59
A.C., Standard Model	£50
LINCOLN-ELK, 3 h.p. Model	£27
MATCHLESS, 8 h.p., 2-speed, No. 5	£59
BAT, 5-6 h.p., 2-speed, chain drive	£62 10
BAT, 7-8 h.p., 2-speed, chain drive	£64 5
MATCHLESS, 8 h.p., 2-speed, No. 7 double belt	£62
HUMBER, 3 1/2 h.p., 2-speed	£44
RUDGE, 2-speed	£46
RUDGE, free engine	£46
BAT, 5-6 h.p.	£49

Compare our prices with others.

## IMMEDIATE DELIVERY

OF 1912 MACHINES, OVER 60 IN STOCK OF LEADING MAKES, INCLUDING P. & M.'S, SCOTT, MORGAN RUNABOUTS, A.C.'S, G. & N.'S, AND G.W.K.'S.

TRADE SUPPLIED WITH VARIOUS MAKES, INCLUDING SIDECARS AND CYCLOCARS. **LIBERAL DISCOUNT.**

**ORDER NOW FOR EARLY DELIVERY.**

We are now Booking Orders for 1913 MACHINES and RUNABOUTS, now is your time to Book with THE ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

Sole LONDON Wholesale Agents for LINCOLN ELK.

**SECOND-HAND**

£23. F.N., 4-cylinder, 5-6 h.p.	10/11
£25. F.N., 4-cylinder, 5-6 h.p.	10/10
£26. F.N., 4-cylinder, 5-6 h.p., with clutch	10/10
£32. RUDGE, T.T. Roadster	10/12
£37. REX, 6 h.p. clutch, speedometer and sidecar	10/11
£67. ZENITH, 6 h.p., with sidecar, as new	10/12
£20. REX, 3 1/2 h.p., good order	10/10
£39. BRADBURY, 3 1/2 h.p., as new	10/12
£27. LINCOLN-ELK, 3 h.p., as new	10/12
£41. DOUGLAS, Model H, 2-speed, as new	10/12
£28. JAP-CHATER, 1 h.p.	10/12
£23. REX, Twin, 4 h.p., T.T.	10/10
£8. MILLFORD Radial castor cane sidecar	10/11
£2 10s. 1912 MABON CLUTCH.	
£10. BAYARD, 8 h.p., 4-cylinder, 3 weeks old, quantity of spares	10/12
£20. F.N. Car, 10-14 h.p., as new	10/12

All Accessories included on S.H. at the price advertised.

## THE FAMOUS "REY" SIDECARS.

£6 5s. £5 5s.

Side-entrance Models, Wicker, £7. Coach-built, £9 10s.

2 Elegant Cane Models, Side-entrance, £10 10s.

All complete with Hutchinson or Michelin 26 x 2 1/2 in. tube

and tyre, and quick detachable joints.

— LIBERAL DISCOUNTS TO THE TRADE. —

Only Address: **REY, 5, HEATH**

**HAMPSTEAD.**

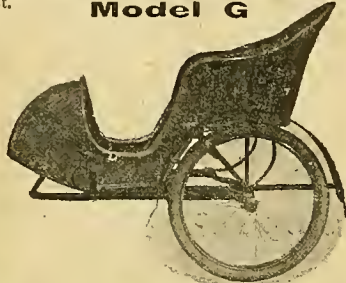


## OUR REED CANE BODIES

have undoubtedly hit the mark.

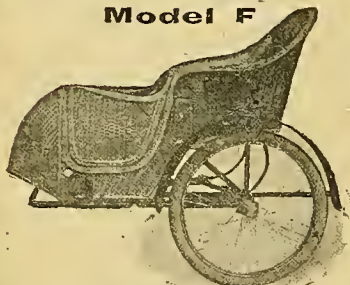
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wickerwork besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model G



£7 10s.

Model F

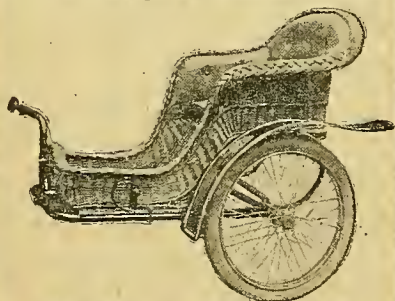


£8 8s.

Complete as above and carriage paid.

### SMART, LIGHT, AND STRONG.

Our Model de Luxe Sidecar is admitted to be the finest all-round value ever offered. Cranked axle, quick detachable joints, caged ball races, with extra stout wheel spindle. Guaranteed 12 months.



£6 - 5 - 0

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for List.

#### MISCELLANEOUS BARGAINS.

New Rubber-studded Covers, 26 x 24 beaded	17/6
Water Circulating Pump	5/-
Small Tricar Radiator	8/-
Triumph pattern Handlebar, new	6/3
Mabon Clutch, fits Rex	35/-
New Prested Accumulators	7/6
New Prested Trembler Coil	15/-
Lycett's "Top Tube" Toolbags	7/-
2 h.p. Stationary Engine, water-cooled	£4 10
Albion Clutch, fits Triumph	47/3
New Screw-cutting Lathe, 4in. centres	£6 10

## MOTOR BICYCLES FOR SALE.

**TRIUMPH, 1910**, Mabon clutch, lamp, generator, spare cover, new Duo-lop belt, overalls; any trial, examination; unspratched; £29, no offers; bought car. —H. Stanton Colliery, Burton-on-Trent. [X7283]

**THE Bargain of the week**—32h.p. twin Premier, Bosch mag., touch 60, silent, £4 worth of spares, etc., just overhauled cost of £3/10, condition guaranteed perfect; £22.—Palmer, Ironmonger, Staveley Town. [X7459]

**1910 7h.p. Chater-Lea-Peuzet**, Bosch, Druids, Kempshall and Palmer tyres, just been overhauled, perfect, smart appearance, lamp, etc.; the lot £19, or nearest offer; must sell.—T. W. Beutley, 159, Waterloo Rd., Burslem. [6334]

**MOTOR Cycle Bargains**—Practically new 1912 standard Rudge, £32; 1911 2-speed Humber, new last November, with new 1912 sidecar, and all accessories, £35; 1911 standard Rudge, £27.—The Walsall Garage, Walsall. [X7310]

**1913 A.J.S.'s**, Scotts, Triumphs, and Douglas's; book your order now; we are in a position to deliver two of each model at the show.—The Walsall Garage, Walsall. Tel.: 444. [X7311]

**1912 Rudge**, special bargain, just come into stock from customer, T.T. model, special, fast, F.R.S. lamp, best horn, all spares; cost £65, and had special tune, only run 1,600; any approval at £39, all touring fittings.—Smith's Motors, Chesterfield. [X6693]

**SINGER, 24h.p.**, 2-speed, free engine, not done 300 miles, perfect in every detail, cost £50, for immediate sale £37/10; Rudge, free engine, Millford 16 gn. sidecar, Lucas lamp, speedometer, and spares, a bargain, £52/10, or will separate; Douglas, 2-speed, free engine, used for demonstration only, offers; Millford £16/15 radial castor wheel, art cane, run 1,000 miles only, £11/10.—J. H. Wedge and Co., New Rd., Willenhall. [X5350]

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

#### BIRMINGHAM.

**CLEARANCE** of New and 2nd-hand Stock.

**MOTOSACOCHE, 11h.p.**, £18, or accept best offer; useful as a little runabout.—Colmore Depot, 45, John Bright St.

**REX, 1911, 3h.p.**, £27, in good running order, sound machine.—Colmore Depot, 45, John Bright St.

**LINCOLN Elk, 1912, 3h.p.**, 2-speed, free engine, had very little wear; a 2-speed machine for £33.—Colmore Depot, 35, Colmore Row.

**BRADBURY, 1911, 3h.p.**, good reliable bargain for £33.—Colmore Depot, 45, John Bright St.

**ZENITH, 1911, 3h.p.**, a noted hill-climbing machine; £40 or will clear for best offer.—Colmore Depot, 35, Colmore Row.

**TRIUMPH, 1912**, free engine, scarcely used; owner purchased lightweight; honestly worth full price £55, take £48.—Colmore Depot, 35, Colmore Row.

**P. and M., 1911, 3h.p.**, 2-speed, a rare machine; £45.—Colmore Depot, 45, John Bright St. [6584]

**PLASTOW, Grimsby**, has the following machines on offer:

**1912 Douglas, model K**, new a month ago; **1910 F.E. Triumph, £32/10**; **1911 Douglas, 2-speed**, foot-boards, handle starting, £32/10; **N.S.U., 2-speed gear, £37**; **1911 Douglas, 2-speed, £30**; **1911 Premier lightweight, £22**. [X7451]

**ARNO, 1911, 3h.p.**, been carefully used, perfect condition; £27.—Rover Co., Victoria Sq., Birmingham. [X7292]

**TRIUMPH, 1912**, free engine, only done 500 miles, equal to new.—Garlick, contractor, Coventry. [X7467]

**1912 Rover, Armstrongs mark III, 3-speed gear**; cost £61/12, price £50.—Southlands, Kettering. [X7417]

**TRIUMPH, 1906**, mag., good condition, good tyres, new belt; £17/10.—Gardner, 15, York Rd., Leamington. [X7215]

**CLYNO, 1911, 6h.p.**, 2-speed, in excellent condition, complete, spares; £42—360, Stratford Rd., Birmingham. [6617]

**5h.p. Indian, 1910**, new chains, re-bushed, Cowey speedometer, lamp and generator; £33.—Glover Bros., Coventry. [X7199]

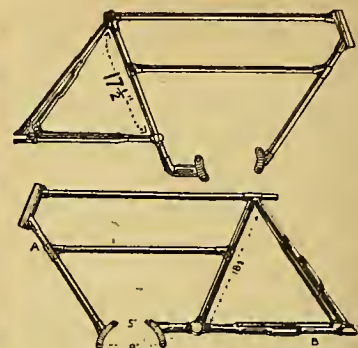
**BRADBURY, 3h.p.**, 1911, splendid order throughout, just overhauled; £28.—Meadow View, Leam Terrace, Leamington. [X7205]

**1911 T.T. Triumph**, splendid condition, very fast; £38 or nearest.—Moore, Bolton House, Donkethorpe, Ashby-de-la-Zouch. [6332]

**1912 T.T. Rudge**, in perfect condition; too powerful for owner; take for quick sale £30.—Johns n, 44, Clarendon St., Coventry. [X7196]

**3h.p. Motor Cycle**, good condition, nearly new tyres, new belt, mag., and B. and B. carburettor; £10 cash.—Clarke's Garage, Leamington. [X7031]

**BRADBURY Motor Cycle, 3h.p.**, mag., B. and B. carburettor, spring forks, head light, horn, etc.; sell £22.—56, Sutton St., Aston. [X7513]



## MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker. Two styles to choose from.

Price 32/6 each.  
Rigid forks, 7/6 extra. Druid forks, 45/- extra.  
Enamelled and plated in first-class style.

**NOTHING EXTRA FOR EASY PAYMENTS.**  
We are prepared to supply almost any make of New 1912 Motor Cycles for

**1/4 DOWN**

Balance in 12 equal Monthly Payments.

#### THIS WEEK'S BARGAINS

1912 2 1/2 h.p. NEW HUDSON, 3 speeds, new	£42 0
1911 3 1/2 h.p. PREMIER, 3 speeds, new	£46 0
1912 8 h.p. MORGAN RUNABOUT new	85 gns.
1912 3 1/2 h.p. NEW HUDSON, 3 speeds	£46 0
1910 SCOTT, a beauty	£32 0
4-cylinder F.N., magneto, spring forks	£16 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, magneto, Druids, 26in. wheels	£16 0
3 1/2 h.p. TRIUMPH, 1907, magneto	£24 0
4 h.p. 1911 QUADRANT, Rex, 2-speeds	£33 0
3 1/2 h.p. 1910 L.M.C., Bosch, h.b. control	£22 0
3 1/2 h.p. 1910 TRIUMPH, beautiful order	£33 0
3 1/2 h.p. HUMBER, 2-speed model, Bosch	£23 0
1911 (Nov.) 3 1/2 h.p. RUDGE, free engine	£19 0
2 h.p. WOLF, magneto	£15 0
1911 Lady's HOBART, Armstrong 3-speed	£32 0
3 1/2 h.p. Two PREMIER, one machine	£25 0

#### SINGLE-CYLINDER REXES.

3 1/2 h.p. 1908 Tourist, 1909 engine	£23 0
3 1/2 h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

#### TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0

#### SIDECAR COMBINATIONS.

8 h.p. BAT, 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 REX and sidecar	£33 0
7-9 h.p. 2-speed REX and sidecar	£53 0

**£4 DOWN SECURES ANY OF THESE. BALANCE 25/- MONTH.**

2 h.p. WOLF, magneto, 26in. wheels, A.J.S. engine	£15 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, magneto, Druids	£16 0

**£5 DOWN SECURES ANY OF THESE. BALANCE 30/- MONTH.**

4 1/2 h.p. N.S.U., Bosch magneto	£19 0
4-cylinder F.N., magneto, spring forks	£16 0
3 h.p. 1908 REX, Bosch magneto	£17 0
5 h.p. Twin REX, spring forks, h.b. control	£16 10
4 1/2 h.p. WOLF Tricar, 2 speeds	£19 0

#### MISCELLANEOUS BARGAINS.

New Lycett's Saddle, large size	9/6
F.R.S. Headlight, new	25/-
F.R.S. Headlight, second-hand	15/-
Powell's 2-speed, free-engine back wheel	£4 15
New Basket Body, upholstered green	£1 0
One ditto, upholstered red	£1 0
1912 B. and B. Carburettors, single jet	27/-
1912 Senspray Carburettors	28/6
Sidecar Aprons, green or red, with studs	7/6
Bosch V Twin Magneto, 48 degrees	£3 10

## Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane.  
Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

## Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane.  
**HALIFAX** (Two minutes from G.P.O.)  
Telephone 919.



**WANTED**

Orders for

**RUDGES  
ZENITHS  
SCOTTS  
DOUGLAS  
LEVIS  
JAMES  
CLYNO**

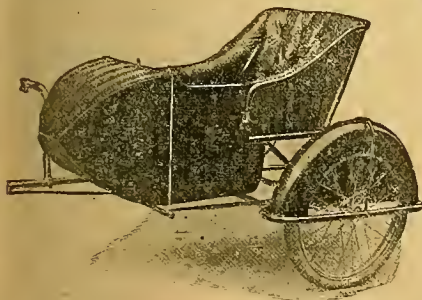
1913 Models.

1913 Models.

**SCOTT'S**

POWELL STREET, HALIFAX.

**HUMBER**, 1912, 2-speed, handle starting £41 0  
**NEW HUDSON** Lightweight, 2½ h.p. lap, like new, 3-speed gear, a bargain £35 0  
**RUDGE**, Standard 1912, 3½ h.p. £33 0  
**PREMIER**, 3½ h.p., 1912, complete with sidcar, 3 speeds £55 0  
**NEW HUDSON**, 3½ h.p., 1912, not done 300 miles, 3 speeds £43 10  
**HUMBER**, 3½ h.p., 2-speed and free engine, take a sidcar £39 0  
**TRIUMPH**, 3½ h.p., late 1908, a beauty £23 0  
**TRIUMPH**, with 2 speeds and free engine £25 0  
**TRIUMPH**, clutch model, 1910½ £33 0  
**LINCOLN ELK**, 3½ h.p., 2-speed and kick starter £33 0  
**REX**, 1908, 3½ h.p., h.b.c. £16 0  
**P. & M.**, complete with 9 guinea sidcar £32 0  
**REX**, 1910, 5-6 h.p., 2-speed, and free engine complete with sidcar £33 0  
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 Sharrock, 176, Bristol Rd., Birmingham. [X7297]  
**TRIUMPH**, 1910, Albion F.F. Jones speedometer, lamp, spare tube in case, and belt, new back cover; £32.—Goodwin, 68, Bristol St., Birmingham. [6314]  
**TRIUMPH**, late 1911 model T.T. 3½ h.p., Dunlop tyres, horn, head light, condition as new; bargain, £34.—Brown's, 12, Bull Ring, Birmingham. [X7314]  
**JAMES** Motor Cycle, 3½ h.p., T.T. model, 1911, here, lamp, accessories, spares, excellent condition. £30.—Kentish, 75, Trafalgar Rd., Moseley, Birmingham. [X7162]  
**TRIUMPH**, 1911, 3½ h.p., free engine, fitted with 1912 forks, very little used, and equal to new; £42.—The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0155]  
**TRIUMPH**, 1911, 3½ h.p., T.T. roadster, fast machine, in good condition; £30.—The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0156]  
**MATCHLESS** J.A.P., 1911, 3½ h.p., free engine, excellent condition; £35.—The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0157]  
**TRIUMPH** Motor Cycles—Latest 1912 free engine and T.T. roadster models in stock; buy your machine from the official agents for Birmingham and district.—The Premier Motor Co., Ltd., Aston Rd., Birmingham. [0158]  
**3½ h.p. Humber**, 1909, 2-speed, free engine, Whittle belt, engine just overhauled by makers, and new rigid sidcar; £30.—Gill, 32, Kimberley Rd., Rugby. [X7209]  
**NEW HUDSON**, 1912, 3½ h.p., 3-speed, Colonial model, first-class condition. Lucas lamp, horn, etc.; £45 nett.—23, Aubrey Rd., Small Heath, Birmingham. [X7466]  
**TRIUMPH**, 1909, just overhauled, new piston, splendid condition, good climber, lamp, spare belt, valve, tools, etc., good tyres. £25.—Stanford, 13, Much Park St., Coventry. [X7116]  
**2½ h.p. Motor Cycle**, Bosch mag., h.b.c., good tyres, 24 lamp horn, etc., complete, in good running condition; £12/10, or close offer.—Small, Lumsdown, Fast Kirby, Notts. [6402]  
**BRADBURY**, Sept., 1911, 2 speeds, Lucas lamp, horn, spare tube, Dunlop belt, new tyre. £30; Turner sidcar, head, screen, 29.—35, Regent Parade, Birmingham. [X7351]  
**DOUGLAS** E., 2-speed, free engine, footboards, Brooks saddle, absolutely perfect condition, very little used; what offers?—Cooper Harrison, Cotswold, Syston, Leicester. [X7373]  
**1909 Triumph**, good tyres, Palmer cord back, new Dunlop belt, new cyl. and other parts, 50/- Lucas lamp, 22 worth spares; £25, rare bargain.—Wykes, Rothley, Leicester. [X7365]  
**LATE 1911 5½ h.p. P. and M.**, perfect condition, run only 2,000 miles, practically new tyres, spare cover, lamp, horn, spares; £45.—Price-Hughes, 12, Little Church St., Rugby. [X7342]  
**2½ h.p. Enfield** 1910, new 1911, not ridden 1,000 24 miles, condition as new, just overhauled, spares, unused, Rich detachable, valves, and belt; £22.—Gray 164, Victoria St., Grimsby. [X7221]  
**1912 Improved 2-speed 4 h.p. Rex de Luxe**, condition as new, Lucas lamp, riding accessories, spares, only used by engineer for pleasure; £44.—Copley, St. Catherine's Rd., Lincoln. [X7464]  
**1912 Free Engine Triumph**, Palmer cord tyres, guinea whistle, Lucas horn, spares, unsatished, had only 3 months' running; nearest to £45 secures.—Morris, Coten End, Warwick. [X7463]  
**A.J.S.**, 2½ h.p., 2-speed, latest model; Alldays-Matchless, 3½ h.p., 2-speed, latest model, French grey finish; must sell; no reasonable offer refused.—Belgrave Garage, Bristol St., Birmingham. [6557]  
**TRIUMPH**, 1909, fitted with Zenith-Gradua gear, free engine, exceptional condition, unused through winter months; bargain £28.—Drumery Stores, 64, Tilton Rd., Small Heath, Birmingham. [X7167]  
**TRIUMPH**, 3½ h.p., 1912, Miller lamp and generator, horn, spares, new condition, used very little, £41; with sidcar, canoe front, £45; bargain; first cash order secures.—McCutcheon, 36, Spencer Av., Coventry. [X7352]  
**ROVER**, 3½ h.p., 1912, Sturmer-Archer 3-speed gear, delivered June last, ridden 1,400 miles; listed at £59, will accept £49/10; would take a sidcar anywhere; no offers or exchanges entertained; may be seen by appointment.—P. W. Johnson, 22, St. George's Rd., Coventry. [0163]  
**ENFIELD**—Exceptional opportunity. Slightly used Royal Enfield, 2½ h.p., 1912 2-speed, chain drive, only ridden few miles; cost £55/10 recently; take £35 for quick sale; perfect machine—no fault; good reasons for urgent sale.—Box L62, The Motor Cycle Offices, 20, Tudor St., E.C. [6602]  
**LATE 1910 Speed King Rex**, 3½ h.p., single, very fast machine, all spares, including 2 pairs handle-bars, inner tube, watch, lamp, horn, etc., 5 belts, 2 long exhaust pipes, engine just rebored and bushed throughout; exceptional condition; £25, no offers.—Astley, Eaton Rd., Coventry. [X7366]  
**BARGAIN**—Triumph, 1907 model, with 1911 cyl. and piston, 1912 improvements, new belt, Dunlop tyres, Triumph lamp and generator, Jones speedometer, T.T. and touring handle-bars, spares and tools, in splendid running order; take £27/10 or near offer.—Box No. 1,435, The Motor Cycle Offices, Coventry. [0167]

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**SCOTT**, water-cooled, 2-speed, special bargain £33 0  
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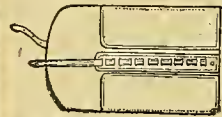
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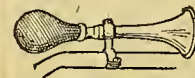
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**TWIN** Humber, 22h.p., Armstrong 3-speed gear, 21in. rear tyre, double footrests, belt guard, spare belt, lamp, horn, and spares, splendid condition; near offer to £40.—Geoffrey Smith, Dunelm, Northumberland Rd., Coventry. [6141]

**1911** Twin Rex de Luxe, fitted Roc foolproof 2-speed, Bosch mag., Druids, B. and B., in perfect order throughout, guaranteed, ideal sidecar machine; sacrifice £32/10.—Holland, Clarendon St., Coventry. [X7028]

**HUMBER** Motor Cycles, 1912, new shop-soiled models; 1912 3 1/2h.p. 2-speed, £45; 1912 2 1/2h.p. T.T. or touring, £35; 1912 lady's 2h.p. clutch model, £37/10; ditto, 3-speed, £40; 1912 2h.p., 3-speed, £37/10; ditto, single-speed, £30; for cash only; no exchanges.—Humber Depot, 78, New St., Birmingham. [6615]

**MOTOR Cycles.**—1912 Humber, 3 1/2h.p. and Montgomery coach-built sidecar, £46; 1911 Humber, 3 1/2h.p., 2-speed, £32; 1910 ditto, £25; 1911 2 1/2h.p. 3-speed, £32; 1911 Zenith Gradua, £32; 1910 Enfield, 2 1/2h.p., £15; 1911 Humber, 2h.p., £22; 1910 special Humber, 3 1/2h.p., chain drive, £18.—Humber Depot, 78, New St., Birmingham. [6616]

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

PLANT Motors, Bedford.

**2 1/2h.p.** Royal Enfield; 16 gns., complete with spares, 24 good tyres, Dunlop belt.

**3 1/2h.p.** Triumph, good condition, spares, Dunlop belt; 228.

**3 1/2h.p.** Alldays-Matchless, nearly new, lamp, Cowey, 1 Dunlop, Mabon free engine, good spares; £35. [6497]

**1909** Free Engine Triumph, in real good order and condition; £27.—3a, Bridge St., Cambridge. [X6060]

**2 1/2h.p.** Minerva, m.o.v., new tubes, just overhauled, in, running order; £4.—W. S. Green, Gt. Barford, Beds. [6527]

**PREMIER.** 2 1/2h.p., 1912 model, not done 100 miles. Used for demonstration purposes; accept £30.—J. T. Jackson, Statham. [X6674]

**TRIUMPH**, late 1908, perfect condition, lamp, watch, new belt, good tyres, all spares, overalls; £25.—L. Jeffries, Acton Sq., Sudbury. [6536]

**1910** Triumph, engine just overhauled by makers, enamel and plate as new, Whittle, lamp, horn, tools, perfect; £35.—Booker, Wreham, Stoke Ferry. [X7233]

**B.S.A.**, 1912, 3 1/2h.p., free engine, shop-soiled, not ridden, usual price £56/10; also 3 1/2h.p. Multi Rudge, only ridden about 100 miles; what offers?—H. W. Miller, Nene Quay, Wisbech. [X7423]

**5 1/2h.p.** Rex de Luxe, late 1910, just had £10 overhaul and replacements at works, perfect running order, used every day, horn, tools, and spares, Palmer cords and butt-enders' trial given; cleest £35, or exchange 3 1/2h.p.—Gordon Parker, Mildenhall, Suffolk. [6554]

### SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

**B.S.A.**, 1912, T.T., perfect condition; nearest £39; spares.—Spratt, 2, Taft Embankment, Cardiff. [6562]

**1912** Clutch Triumph, not ridden 450 miles, condition perfect; £48.—Postmaster, Henllan, Card. [6501]

**BRADBURY.** 3 1/2h.p., 1910 1/2, mag., excellent climbing condition; £30; after 5.—Dunn, Taft St., Treherbert. [6371]

**1912** Multi Rudge, new August, perfect condition; any trial; 46 gns.—Walker, Horsefair, Kidderminster. [6531]

**TRIUMPH.** 1912, P.E., almost as new, all spares, watch, cyclometer; £49.—Weightman, Oshaston, Monmouth. [X7207]

**TRIUMPH.** 1911 1/2, clutch, excellent condition, full spares and kit; £41, or offers.—Marshall, Belle Vue House, Malvern. [6361]

**RUDGE.** 1912, free engine, new August last, perfect condition; £50; owner buying lightweight.—Jones, Leighton Tetbury, Glos. [6572]

**HUMBER.** 1912 1/2, 2-speed, free engine, ridden 500 miles, new tyre, lamp, generator, all accessories, tools, 3 1/2h.p.; £35.—Wm. Rees, The Cedars, Hengoed. [X7145]

**ROYAL** Enfield Motor Cycle, as new, for sale, abundant spare parts, 2 speeds, twin cyls., Palmer studded tyres.—Tunbridge, Northampton Place, Swansea. [6433]

**TRIUMPH.** 1907, recently overhauled at works, Bosch mag., B. and B., h.h.c., splendid condition, also lamp, horn, accessories; first £18 secured.—Williams, outfitter, Cwmfelinfach, Mon. [X7356]

**HUMBER.** 1912, 2 1/2h.p. twin free engine, only 3 months old and only done 1,400 miles, very fast and in perfect condition in every way, plating and enamel as new, Rom combination on back; £39.—J. W. Love, tobaccoconist, 29, High St., Aberavon, Glam. [X7334]

# FOX RETREADING

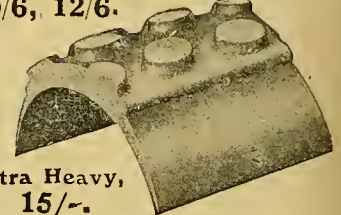
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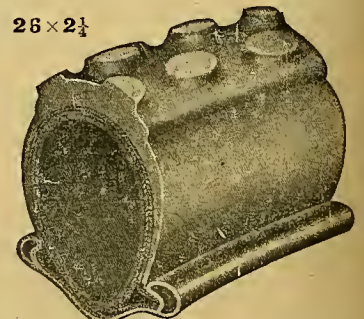


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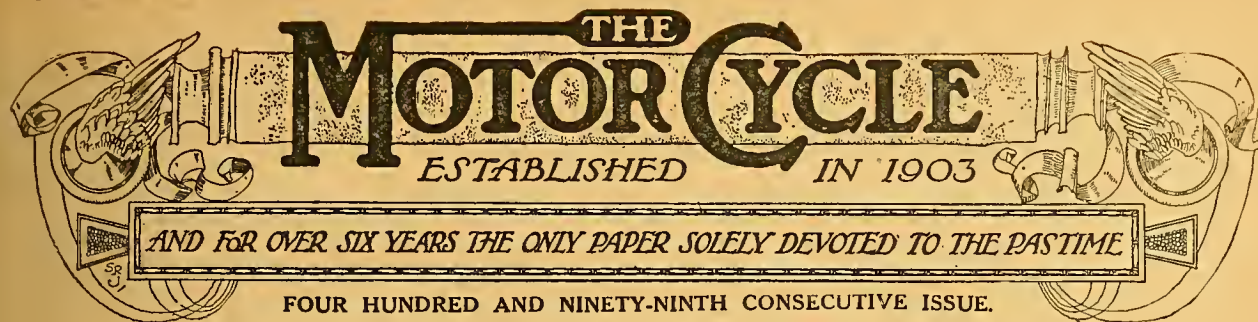
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## The Taxation of Motor Cycles.

**T**HE petition forms which we issued a fortnight ago urging motor cyclists to protest against the proposed new rates have daily continued to pour into our offices duly signed by readers, and by Saturday next, which is the day we require all the petition forms in our hands, we hope to have sufficient evidence to convince the Treasury and every member of the Taxation Committee that the recommendations of the latter are unsound, and, further, likely to do an immense amount of harm to a rapidly-growing industry by preventing new converts from taking up the pastime and restricting the use of the motor cycle. This is the fifth consecutive week we have devoted space to show by example how absurd the new taxes if adopted would prove, and every week further evidence of their weaknesses accumulates.

We might mention that we took particular care to see that the members of the Taxation Committee received a copy of *The Motor Cycle* of October 3rd in which our petition was enclosed, and some of the injustices of the recommended taxes clearly exposed. For further ventilation of the subject we have also to thank a number of leading newspapers for their references to *The Motor Cycle* petition, practically all agreeing that in the light of the weaknesses disclosed by the examples we have quoted success is almost bound to attend our efforts.

As our readers well know, our chief argument against the suggested taxes is the absurdity of rating motor cycle engines on the size of the bore, ignoring the length of the stroke as in the case of motor cars. Such a system will not only influence design and restrict progress, but will eventually become a laughing stock. To quote one or two glaring examples: A J.A.P. engine, measuring 90 mm. bore  $\times$  77½ mm. stroke = capacity 493 c.c., would have been taxed £2 2s., yet an 89  $\times$  89 mm. Bradbury of 554 c.c. capacity = just 61 c.c. bigger, or a 4¼ h.p. Precision, 104 c.c. bigger, would have got off with £1. The Scott (535 c.c.), owing to its short stroke, is rated at £3 3s., which will be the tax payable on the powerful twins of much greater capacity, and now we come to the most absurd example of all. A. owns an Excelsior (650 c.c.) and sidecar, the total weight of which is about 4½ cwt., B. a four-cylinder F.N. motor bicycle (494 c.c.), a machine notably light on

tyres and consequently doing no damage to the road. A. pays £1 for his licence, while B. is mulcted to the extent of three guineas!

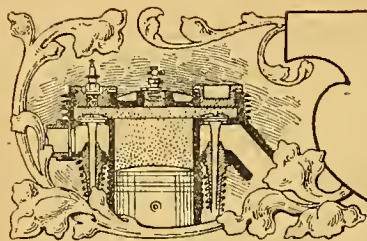
These are but a few of dozens of absurdities if the Treasury adopt the committee's proposals and tax motor cycles on their cylinder bore alone. United action must be taken at once to combat these unjust rates, and we desire readers—whether actual or prospective riders—to post to us by Saturday next as many signed petition forms as they possibly can, so that we may use them to the best advantage on behalf of the whole community of motor cyclists, whose numbers must now be approaching 100,000.

## Determined Action Necessary.

**T**HE need for action is pressing, as the Treasury has issued the draft of the new regulations, which are to come into force on January 1st next. These follow the recommendations of the Committee on the Horse-power Rating of Motor Cars, and not one of the injustices we have outlined above has been in any way reduced. Luckily, the regulations are at the present moment only in draft form, and there is time for representations to be made to the Treasury, but unless these are made in the strongest possible form the motor cycle will be handicapped by one of the most unjust systems of taxation which has ever been applied to any form of locomotion.

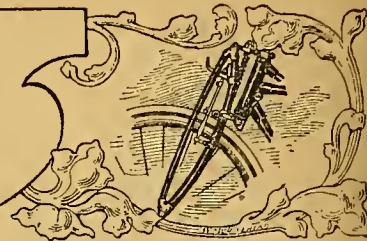
The Auto Cycle Union has not failed to recognise the seriousness of the position, and it is inviting the co-operation of the Automobile Association and Motor Union, the Scottish Auto Cycle Union, the Motor Cycle Union of Ireland, and the Motor Cycle Manufacturers' Union. Our petition will do much to strengthen the hands of these representative bodies. At the same time, it has been a matter of surprise to us that so vital a matter should have been so tardily taken in hand, not only by the A.C.U., the governing body, but by the Motor Cycle Manufacturers' Union. A serious blow has been dealt at the motor cycle industry, which may affect thousands of workmen. Now that the draft regulations have been issued perhaps they will recognise to the full that the time for action is short, and that, unless the strongest possible representations are made, there will be no chance of obtaining a revision of the unjust propositions contained in the draft.





## SILENCERS.

The first instalment of this article appeared in our last issue.



### Increase of Power Caused by Silencers.

It is often said that if a silencer is of good design it should give more power than if an open exhaust be used. This is partly true and partly not. The explanation generally given is one explosion helps out the exhaust of the one that follows it. So far as single-cylinder machines are concerned this is a pure fallacy, because none could possibly carry a pipe long enough to begin to have any such effect, even could it be produced

(which is doubtful), but there is something more in it with regard to multi-cylinder engines. If the cylinder exhausts direct into the atmosphere, then the gases must accelerate the air they impinge upon to their own speed from rest, whereas if it exhausts into a chamber in which the gases are still moving as a result of the previous exhaust,

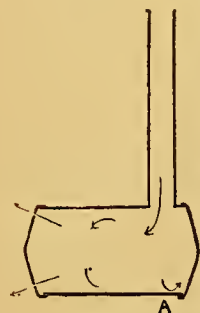


Fig. 10.

then the power required for the acceleration is obviously less.

On the other hand, there are many very well authenticated cases where speed has actually been taken off a single-cylinder machine when the whole silencer was removed, such silencer having been admittedly of imperfect design. The explanation is more than probably simply this, that when the exhaust pipe has been removed it has left the exhaust port directly facing the direction in which the machine is travelling, so

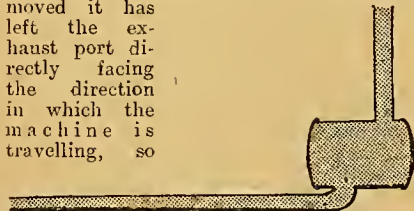


Fig. 11.

that the gases have had to emerge against the resistance of an appreciable positive pressure, which at a fairly high speed would certainly amount to as much as, if not more than, the assistance of a bad silencer.

One thing, however, is quite certain, viz., that no silencer worthy the name has any need whatever for a cut-out. It is a plain admission of incompetence on the part of the designer, or that the designer's wishes are restricted by the amount of space at his disposal.

### Why Water-cooled Engines are Quieter.

As has been suggested above, water-cooled engines are quieter than air-cooled engines for the reason that in the former case the temperature of the exhaust gases is less, and hence with the same, or equal silencers, the final outlet velocity has less well-marked peaks in it; or, in other words, is more nearly constant. This matter of cooling is, as may be gathered, of the utmost importance; and that being pretty obviously so, it may well be a source of continual wonder to anyone who has given the matter a moment's thought that so many machines are turned out with nickel-plated exhaust pipes, which accordingly present to the atmosphere the very worst possible radiating surface. No doubt it is done with the laudable intention of making things look nice and keep nice, but it is unquestionably bad from the point of view of the silencer designer. Surely it is possible to devise some matt black surface that is more or less imperishable and looks well.

For the same reason, exhaust pipes should be as thin as possible, and should be made of some material that is more or less dead, as far as producing sound waves of its own is concerned.

### The Shape of the Exhaust Pipe.

If the rate at which the exhaust impulses are felt by the pipe correspond, or are a simple multiple of the vibration period of the pipe itself, a noise due to harmonic vibration will be set up. The best exhaust pipe that can be practically considered would appear to be a very thin cast iron, or cast malleable iron, tube furnished on its outside with a number of radiating flanges fixed at right angles to the axis of the pipe, whilst inside there might be longitudinal fins, which, while enormously increasing the radiating surface, would affect the actual resistance of the pipe to no appreciable extent. A sketch of a half section of the suggested pipe is given in fig. 6, in order to make the idea clear. The pipe would probably have to be made in two halves, so that the internal surfaces could be filed smooth and to allow for thorough cleansing of the interior.

I have already mentioned the very great importance of proper regard being paid to resistances close to the cylinder, where the exhaust gas speed is very high. This is where really good engine design comes in, on account of the effect which is



Fig. 12.

exercised by the shape and contour of the exhaust port itself. It need hardly be said that no silencer, however well planned, can possibly neutralise the initial ill-effect of a badly shaped port. A point where power may easily be lost is in the fitting of the pipe itself. Where, as shown in fig. 7, a union joint is used and the internal diameter of the pipe is slightly less than that of the port, considerable resistance is set up by the sharp corners, and in like manner by the fitting shown in fig. 8, in which the pipe is simply thrust into the port and pinned in position. In this case the port should be counter-drilled, as indicated in fig. 9,

### A Typical Motor Cycle Silencer.

In fig. 10 is given a rough sketch of the typical motor cycle silencer such as is used, with, in some cases perhaps, slight modifications, by a great many manufacturers. Briefly described, it is a cylindrical box with a number of small holes either at the side or in one of the ends. Since it is simplicity itself, if not actual crudeness, it would quite naturally be supposed, as indeed it is sometimes claimed, that there is no back pressure, whereas, as a matter of fact, such a device could not possibly have any quietening effect whatever unless there was a good deal of back pressure. To start with, the exhaust pipe is of very inadequate length, and consequently the gases get no opportunity to cool as they should do, and as a result they enter the "silencer" proper at an exceedingly high speed. They immediately strike the bottom wall of the box at the point marked A, and rebound thence in all directions, setting up a good deal of resistance by the formation of a complicated series of eddy currents.

Still travelling at a high speed, they are forced to emerge through the small outlet holes, unless the cut-out, which provides an alternative route, is in operation. Such a "silencer" may be best described as an instrument which partially interrupts direct sound waves, but does not attempt to deal with the exhaust gases at all. The chamber is of totally insufficient volume, and cooling is totally neglected.

### Gases entering at a Tangent.

It is rather interesting to note that an attempt to get over the back pressure difficulty due to eddy currents has been made by Mr. James Norton, and is incorporated in the Norton motor cycle. It consists simply in directing the stream of gas tangentially to the wall of the cylindrical box instead of diametrically. Beyond fractionally increasing the radiator efficiency of the wall



**Silencers.—**

in the immediate vicinity of the pipe, it is difficult to see what advantage is to be obtained, as, obviously, eddy currents will still be produced by the gas shooting round only at one end of the box.

Another type of instrument is that illustrated in fig. 11, which is furnished on a few makes of machines. It gives evidence of excellent intentions at all events, if nothing else, but suffers in common with the previous type in having so small a radiating surface, so that the gases never get a chance to cool. A really good silencer should let them emerge almost stone cold, and at so slow a rate that they should hardly be felt when the hand is put close against the pipe. However, in this respect fig. 11 is better than fig. 10, but only because a long pipe to the rear takes the place of the series of small holes.

**A Suggested Design.**

Now, since there is but limited space in which to carry the silencer on a motor cycle, it follows, almost as an axiom, that the cooling should be very efficient indeed, and I have already suggested how such an end can be easily achieved with regard to the exhaust pipe. It seems to me that there is no reason, other than that of slightly increased cost, why a

similar idea should not be applied to the silencer chamber itself—that is to say, furnish it very thoroughly with cooling ribs both inside and out.

By rolling a sheet of iron into the form shown in fig. 12, it would be unnecessary to cast the box, so that additional cost would not be very high. Then, as shown in fig. 13, which may be taken to represent a design for a more effective silencer, the silencer box would be very long as well as of fair diameter, and the exhaust gases, furthermore, would enter it axially. The pipe through which they would leave

for there is not the slightest doubt that it would allow the explosions to be heard; at the same time, it would certainly be very much better than the "silencers" now in use on most machines, and it would be almost completely without noticeable back pressure. I will not pretend that it would either look particularly well or clear easily with its ribs and serrated tubes, but it certainly would be practically effective.

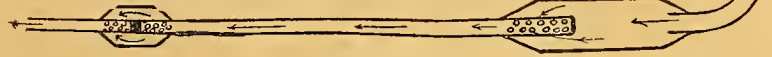


Fig. 13.

the main box would have a sealed end, but a number of large holes at the sides. This pipe would stretch to the extreme rear of the machine, where it would carry another small expansion box. In the middle of this the pipe would be stopped up, and holes bored each side of the partition, as shown in the drawing. To increase the cooling area, both this last box and the long pipe itself could be made of serrated section, and all would be finished a dull black.

It is not suggested that this design of silencer would be anything like perfect,

In considering, however, the real silencing of motor cycles, it must be realised that this is by no means the same thing as the silencing of motor cycle engines. Undoubtedly the engine is the worst offender, so far as noise is concerned, but it is a long way from being the only one, and in some machines there are other things which run it very close indeed. To realise which it is only necessary to coast down a hill, first with the engine switched off, and then immediately afterwards with the belt off.

W. G. ASTON.

**JACKSON CYCLECAR.**

The Jackson cyclecar is now complete with its body. As will be seen from our photograph, it is a striking vehicle with artillery wheels, to which are attached 760×90 mm. tyres and high side doors. The latest type of Jackson cyclecar is not yet on the road, but we are enabled, through the courtesy of Messrs. Reynold, Jackson and Co., Ltd., Brunswick House, High Street, Notting Hill Gate, W., to give a few details concerning it. The engine is the 90° 10-14 h.p. fan-cooled J.A.P., 85×120 mm., which is placed transversely in the channel steel chassis position. The drive is by propeller-shaft to the gear box, which contains two speeds and reverse, whence there is a cross shaft driven by bevel on which the sprocket is carried. Thence to the back wheel the drive is by chain. The rear axle is of ample width, and is carried in a separate tubular frame. The vehicle has great

lateral rigidity, so much so that two people can stand on a board attached to the chassis, one of these being outside the wheel track. The chassis is suspended on coil springs in front. The steering is of the rack and pinion type.

**ARMSTRONG GEAR IMPROVEMENTS.**

A call on the Armstrong Triplex Three-speed Gear Co., Icknield Street, Birmingham, last week elicited the information that their motor cycle hub gear improvements are many. The firm are also adding a new pattern three-speed hub gear to the one already manufactured. This latter has a top direct ratio of  $4\frac{3}{4}$  to 1, a middle ratio of  $7\frac{1}{4}$  to 1, and an emergency gear of 11 to 1. It is so constructed that the engine can be started with the driving wheel on the

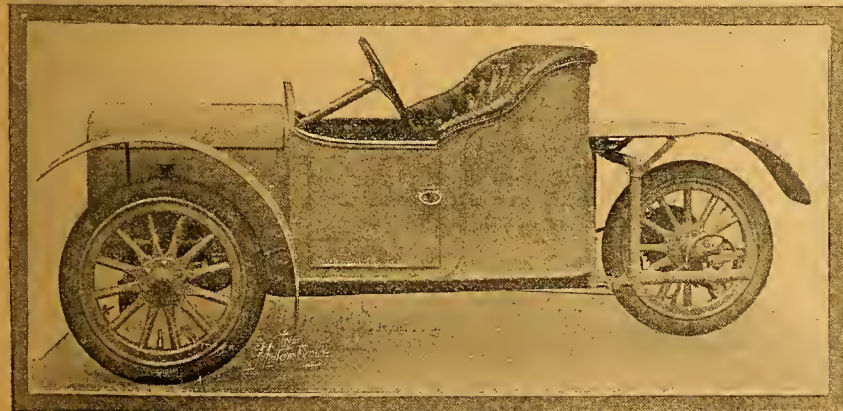
ground. Mr. Reilly, the manager, informed us that they had had so many applications from sidecar owners for a gear which would give a bottom ratio of 11 to 1 that they had decided to make that their standard for sidecars. This confirms what we have written about hub gears for single-cylinder machines requiring an emergency gear, which should be sufficiently low to make climbing the severest hill a certainty instead of an uncertainty.

Another improvement is the strengthening of the gear operating rod. This in future will be equal in diameter to the clutch push rod. The spindle diameter will be increased to  $\frac{1}{4}$  in., and a new control dispensing with the trigger will also be ready by the date of the Olympia Show.

The company, while kindly providing us with these particulars, wish us to point out that they are not in a position to supply the public at present, but will be ready to make deliveries immediately after the end of next November.

A refinement in the control is the fitting of a horn handle in lieu of the metal handle previously supplied. Detachable brackets for carrying the control lever will be made in three lengths to suit various widths of tank, and the brazed-on type will also be supplied in three lengths— $2\frac{1}{4}$  in.,  $2\frac{3}{4}$  in., and  $3\frac{1}{4}$  in. centres. The clutch pedal will be oval, and the clutch rod will be pushed in by means of a worm and nut instead of the usual levers.

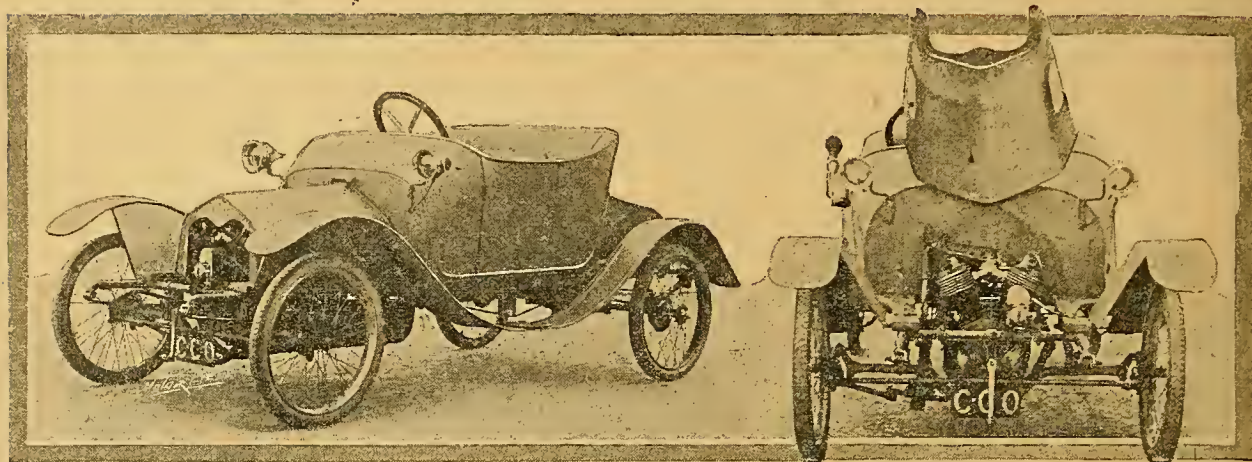
The indirect top gear pattern, which we have had in use for months on New Hudson and Humber machines, will be continued; in fact, the firm are specially arranging to supply both types to cater for different requirements. Some favour the indirect top and others the direct top gear pattern. In 1913 both tastes will be satisfied.



The latest model Jackson cyclecar, propelled by a 90° air-cooled twin engine set transversely.



## THE J.B.S. CYCLECAR.



(1) Side view of the J.B.S. cyclecar. (2) Front view showing how the bonnet tips up and renders the whole of engine, carburettor, clutch etc. accessible.

**T**HE other day a representative of *The Motor Cycle* had the pleasure of a trial in one of these cyclecars, which are being placed on the market by Messrs. J. Bagshaw and Sons, Ltd., of Batley, Yorkshire.

The machine, which has now completed a thousand miles trial, including three clean ascents (successive) with a passenger up Keighley Gate (the hill that caused a great deal of trouble to the competitors in the A.C.U. 1911 Harrogate trial), behaved very well whilst we were testing it on the rough West Riding highways, and held the road nicely at speeds up to about 35 m.p.h. This speed can be exceeded when occasion offers. The seating accommodation for two is ample and comfortable, while under the seat and also at the back are fitted receptacles for all tools, spares, etc. The overall dimensions of the chassis are approximately 9½ ft. x 4½ ft. It is built up of tubular steel and sprung by means of semi-elliptical springs fore and aft.

The engine, an 8 h.p. J.A.P., is placed at the extreme front of the chassis, and therefore receives the full wind pressure for cooling purposes. A leather-to-metal clutch is used with a three-speed gear box and propeller-shaft.

The steering gear is on car lines, as also the general operation of control, one pedal being for a brake fitted on the propeller-shaft, another pedal working the clutch, and a third being for the foot throttle. There are two side levers, one being for the internal expanding brakes on the rear wheels and the other for operating the change speed. There is one lever fitted to the steering column, and this is for advancing and retarding the magneto, which is a Bosch. A single control Lukin carburettor forms part of the regular equipment, and has given very satisfactory results. The petrol and oil tank is placed on the dash, petrol being gravity fed and oil by the J.A.P. automatic lubricator, and also an ordinary pump. The body is of metal, the complete machine weighing about 6 cwt. The position of the engine and the removable footboards make everything very get-at-able.

Altogether the machine behaved satisfactorily, and after one or two slight modifications (which road tests have shown desirable) have been made should prove itself equal to, if not better than, a large number of small cars now seen on the roads.

## The Taxation of Motor Cycles.

A few opinions from readers concerning "The Motor Cycle" Petition.

Sir,—We shall be very pleased to co-operate with you in obtaining as many signatures as possible protesting against the suggested motor cycle taxation, and will have the petition form signed and returned to you in a day or so.

CALCOTT BROTHERS, LIMITED.

Sir,—We will certainly obtain as many signatures as possible for the petition to the Motor Car Taxation Committee.

THE WILKINSON T.M.C. CO., LTD.

Sir,—I enclose my petition together with signatures. I have sent letter to Sir John Simon, and trust every motor cyclist will take this up enthusiastically.

Congratulating you upon your action, and trusting you will fight this to a finish.

E. J. BOWEN, JUN.

Sir,—I beg to enclose you herewith four lists of signatures for the petition against the proposed increased taxation. I trust that your efforts will not be in vain.

Wishing *The Motor Cycle* every success,

E. S. DANGER.

Sir,—I return petition duly signed. Well done! *The Motor Cycle*. We wish you every success.

E. B. BARTON.

Sir,—Please accept my best thanks for the great effort you are making on behalf of all motor cyclists.

T. A. DYER.

Sir,—We shall be very pleased to co-operate with you to obtain as many signatures as possible in protesting against the recommendation of the Motor Car Taxation Committee to tax motor cycles on the motor car basis. If you will kindly send us two or three forms we will have them put in a prominent position here so that our customers may sign.

BOWDEN WIRE, LIMITED.

Sir,—We have much pleasure in returning petition duly signed. We sincerely trust your energies will be rewarded by the proposed new taxation falling through.

THE PREMIER CYCLE CO., LTD.

Sir,—I have much pleasure in sending a few signatures from members of the stock exchange who own motor cycles (and ride them).

PAUL DRINKWATER.

Sir,—Regarding the petition for protest against increase in taxation on motor cycles. You can leave it to us to get as many signatures as we possibly can.

THE REX MOTOR MFG. CO., LTD.

Sir,—I enclose herewith signatures for petition and wish you every success with your project. I had a typewritten copy of your suggested letter written, and rode four miles to hand it personally to our member for Eccles. He promised to attend to it.

F. SHACKLETON.





# OCCASIONAL COMMENTS

by "IXION"



## Waterproof Magneto.

As the makers of the waterproof magneto very properly assert, trouble in wet weather can only arise from bad fitting of the cable. The unfortunate thing is that the original fitting may have been carelessly done by an agent, or after having been properly done in the first instance, may be disturbed by the owner and carelessly refitted, as, for instance, when the cable is removed to see how it is fitted, when it is accidentally pulled out of its socket, or when the owner takes it out unnecessarily in the effort to trace a trouble. Two points should always be verified before a machine fitted with a waterproof magneto is taken out in bad weather:

(1.) The cable should be a tight fit in the ebonite bush by which it disappears into the endplate.

(2.) The cable should be caulked into the ebonite bush with wax. The Bosch Co. recommend running melted paraffin wax round the cable at this point, but it is quite sufficient to let a candle drip round the joint.

When these two precautions are taken trouble is impossible. It is, of course, suicidal to remove the endplate in the open air when rain is falling, for the armature has no other protection than the endplate, and water is sure to be blown in under the arch of the horse-shoes. It is wiser to push two miles to find shelter rather than interfere with the endplate in the open.

## Tyre Bursts.

In his article on his personal cyclecar fads Mr. Davies introduced the question of tyre bursts, with special reference to three-wheeled cyclecars. He did not extend the scope of his remarks and apply them to all pneumatically tyred vehicles, and it should not be forgotten that a tyre burst is always a nasty thing, and that no sensible man will use tyres in such bad condition that a burst is at all probable. If we compare the risks attaching to tyre bursts with two, three, and four-wheeled vehicles, I suppose it is beyond contention that a burst is least perilous on a four-wheeler. Mr. Edge's public demonstration over razors and broken bottles with a Napier car at the Crystal Palace some years ago was generally discounted by the fact that a magnificent driver was permanently on the *qui vive* to correct the swerves resulting from a burst cover. But I have personally sustained several sudden bursts on four-wheelers, and I do not regard them as really dangerous. In particular I remember how a front cover burst two years ago when I was driving a light racing car downhill at an excessively illegal speed, and yet I brought the vehicle to a standstill without real difficulty.

The case of two-wheelers is very different; a bad swerve is inevitable; but, as de Rosier showed us when he was travelling at over 70 m.p.h. in his Brooklands race with Charlie Collier, the accident need not produce a smash. *The salvation of the*

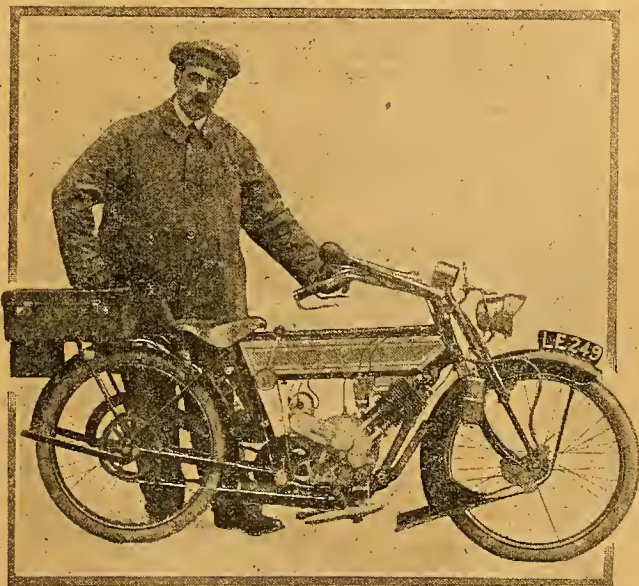
*motor cyclist who bursts a tyre at speed lies in his ability to jam his feet down.*

The case of the modern three-wheeler is short of evidence at present, and it would be interesting if owners who have burst tyres on modern three-wheelers at speeds well in excess of legal limit would write to the Editor. I know of one 1906 tricar which sent three people into hospital for this cause before it caught fire last spring, and made tardy atonement for its misdeeds by realising £100 insurance money—about three times its face value!

This machine, like many of its contemporaries, was absolutely unsteerable with a flat back tyre, and its owner could only pray that bursts would occur when there was a pile of hay, or other soft material, somewhere adjacent. I presume the latest three-wheelers are steerable at low speeds with a flat back tyre, and that at high speeds the owner must be content to take his chance, like all users of pneumatically tyred vehicles, from the owner of a racing car to the modest motor cyclist.

Could not some leading manufacturer of three-wheelers give a public demonstration at Brooklands? Whatever danger exists can best be met by only using sound tyres on the driving wheel, by avoiding high speed work in hot weather, and by being very methodical in fitting new tubes. For the circumstances under which bursts are probable are:

1. Using badly worn tyres.
2. Driving too fast on hot days.
3. Nipping new tubes.



H. Vandyk, the well-known Court photographer, with his specially fitted up 1912 P. and M.



## Motor Cycles for Colonial Use.

**W**ITH experience of road surfaces in Australia, Cape Colony, and Rhodesia, as well as in England, possibly my notes on the subject of the ideal Colonial mount may be of interest.

During the last twelve months or so the number of motor cycles in Rhodesia has increased rapidly, and most of the best-known British makes are represented. Beyond the municipal areas macadamised roads do not exist. The "natural" roads of the country are, as a rule, rideable only in the dry season (*i.e.*, the winter), from about April to November, and occasionally in between spells of rainy weather; but during the summer months wheeled traffic converts the surface into a series of ruts along which progress on a single-tracker is impossible. When the surface is wet—except in sandy country—the wheels become clogged with mud and immovable in a few revolutions.

As has often been mentioned in *The Motor Cycle*, manufacturers have as yet paid no special attention to colonial requirements. When they do, I think the sale of suitable machines will be largely increased. For use in or near the larger towns, both in Australia and South Africa, where macadamised roads are general, the standard models fill the bill satisfactorily; but for outside use the design of the whole machine needs to be very carefully considered, and a special colonial model might be turned out for export.

### Height of Magneto and Crank Case Clearance.

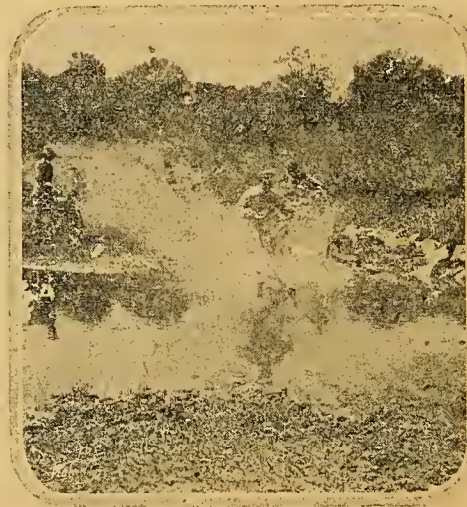
For Rhodesian use, the position of the magneto is an important matter. It should be placed as high as possible. Some of the best-known machines cannot be pushed through more than a few inches of

water without the magneto being submerged, and this is a serious drawback where streams have to be forded. In nearly every machine both the silencer and the crank case are so low that great care has to be exercised not to get them damaged by contact with projections on uneven surfaces. Tyres of not less than  $2\frac{1}{2}$  in., and preferably 3 in., in diameter, of greater thickness and strength than are usually supplied with the machines, would give greater satisfaction. Rims and spokes, especially in the back wheels, should be heavier in proportion; and wide hubs, giving greater lateral strength, are advisable.

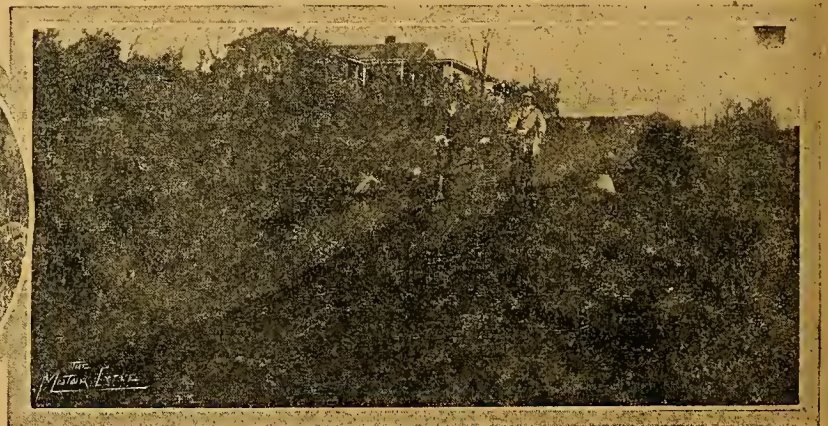
The transmission question is not such a troublesome one here as it is in a wet country, since very little riding can be done in the wet season. The dry atmosphere at an altitude of 4,500 feet has a deteriorating effect on rubber, and for this reason leather belts are being used a good deal. The conditions of road surface change so much and so rapidly that variable gears give an enormous advantage. What form these should

take—whether hub-contained, counter-shaft, or variable pulleys—is not of so much consequence as that the system shall be absolutely reliable and simple. An important point in favour of a belt or chain drive through a counter-shaft is that the usual large-diameter belt rim, with its great risk of damage from projections, is replaced by a comparatively small rim or a chain wheel.

A free engine clutch and a kick starter give a great advantage to the rider. Although a vigorous man *can* start a fixed geared machine up a steep gradient or on a sandy surface, it is too strenuous an exercise for most people. On bad roads, with perhaps



A "Douglas" rider going through a stream near the Matopo hills, twenty miles from Bulawayo.



(1) The same stream, crossed a mile farther on. The machines are—a Rudge, Triumph, Douglas, and an N.S.U. (2) A Rudge and a Singer descending the hill from the Matopo Hotel towards Bulawayo. Gradient 1 in 7.



**Motor Cycles for Colonial Use.—**

numerous streams to be crossed, dismounts are generally frequent, and the energy saved by being able to restart from the saddle can only be appreciated by those who have tried other methods.

The type of engine most suitable is, of course, a debatable point. From the fact that it gives more clearance than a vertical engine, I favour the horizontally-opposed twin-cylinder type as used on the Douglas machines. With slightly increased cylinder capacity and a choice of gears, such a high engine speed would not be necessary. A single cylinder is less trouble to keep tuned up, and this type will no doubt always find its advocates. The greater part of Southern Rhodesia averages 4,500 feet above sea level, and engine power is consequently reduced by

something like 25%, so that allowance must be made for this loss, either by increasing the original power or by using lower gear ratios. Naturally, high speeds are not often possible, and an average of from fifteen to twenty miles an hour is considered quite respectable travelling, so that gear ratios of, say, 4, 5½, and 8 to 1 would be most satisfactory.

Motor cycles are more often adopted in Rhodesia as a means of getting from place to place, than as a pastime. It is comparatively expensive, and the absence of "made" roads detracts very much from the pleasure, though the "sporting" nature of some of the rides appeals to the more adventurous. Most of the best machines are sold at an advance of 30% to 40% on the English price; and petrol at 3s. 6d. per American gallon. **BERTRAM WOODS.**

## A Run on an 8 h.p. Cyclecar.

**L**ATELY we made a careful inspection of the 8 h.p. Duo car built by Duo Cars, Ltd., York Street, Westminster. The engine, which is set longitudinally in the frame, drives by chain to the counter-shaft, at each end of which are two adjustable pulleys, which are controlled by a side lever, which also pushes backwards or forwards the rear wheels, thus keeping the tension on the belts equal, irrespective of the gear in use. The movable flange slides on a square shaft, and the expanding or contracting of the pulleys is effected by means of a quick pitch thread. The whole is packed with grease and will run without attention for about six months. The steering is worthy of note. The front axle ends forming the bearings for the steering pins are raked, and the arms connecting the tie rod are slightly out of centre, giving a trailing action tending to keep the wheels in a straight line. The movement of the wheels is effected by three strong wire cables wrapped round a fibre pulley, each being provided with a spring at one end to ease the strain, save the wire, and allow for any stretch. The side brake shoes are shod with Service belting (the same type of belt is used in the transmission), and a limited oscillating movement is permitted, allowing the shoe to adapt itself to the rim, while means of adjustment are provided. The wheel hubs are of large size and ball bearings of the cage type are employed, rendering the wheels detachable. The throttle and ignition control are by wire. The engine is the well-tried 8 h.p. J.A.P. with extra outside flywheel. The cooling is assisted by an aluminium fan running on ball bearings.

### The Touring Model.

When Mr. de Peyrecave suggested a trial run, he invited a choice of two vehicles, a racing-looking machine and a smart, well-finished cyclecar fitted with hood and screen. We chose the latter.

During the early part of the run Mr. de Peyrecave took the wheel, and skilfully threaded his way through the traffic to Ealing, thence through the lanes to Denham. When once well away from the haunts of men we took over the control ourselves. The side lever which controls the free engine and gears, if pushed forward applies the brakes, while a second side lever puts extra tension on the belt. Of the two pedals, that on the right hand works the brake, while

that on the left is the accelerator. The steering was good and we did not spare the car. In fact, we drove as fast as the winding nature of the lanes would allow, and yet the perceptible rise up Red Hill, the first gradient encountered on the main road, was taken without a falter. All went well until we were a mile or so from Gerrard's Cross, when the vehicle suddenly gave a heavy list to port, necessitating a quick pull up. An examination revealed that the near side spring shackle plate bolted to the frame had come adrift, as both bolts holding it had sheared. Fortunately, a motor furniture van came by and one bolt was procured which saw us into Beaconsfield. Here another was purchased, and the rest of the run was concluded without further trouble. The several steep pitches between Beaconsfield and Amersham were taken in comfortable style, also Rectory Hill. After tea we followed the same route in the reverse direction, taking Gore Hill with plenty of power in hand and the other short but stiff ascents on top gear.

The springing was good, but a little more care might be bestowed on the design and upholstery of the seats. On the whole the vehicle impressed us most favourably.



An 8 h.p. Duo competing in a hill-climbing contest.





### How to Become a Military Motor Cyclist.

**T**HANKS to the indefatigable efforts of those who have taken up the cause, motor cyclists have at last been acknowledged by the military authorities, and a place has been found for them on the establishments of the Territorial Force—(1) with the Divisional Telegraph Companies of the Royal Engineers, and (2) with the Cyclist Battalions. In order to join, all that is necessary is to write a letter to the "Officer Commanding" the most convenient unit and to ask to be enrolled. I append a list of units:

#### (1.) ENGINEERS.

E. Anglian Divisional Tel. Co. R.E., 13, Hassett Street, Bedford.  
 Highland Divisional Tel. Co. R.E., 80, Hargate Street, Aberdeen.  
 Home Counties Divisional Tel. Co. R.E., Coombe Road, Brighton.  
 East Lancashire Divisional Tel. Co. R.E., Seymour Grove Old Trafford, Manchester.  
 West Lancashire Divisional Tel. Co. R.E., Engineers' Hall, Cropper's Hill, St. Helens.  
 First London Divisional Tel. Co. R.E., 10, Victoria Park Square, E.  
 Second London Divisional Tel. Co. R.E., 67, College Street, Chelsea, S.W.  
 Lowland Divisional Tel. Co. R.E., 192, Main Street, Rutherglen, Glasgow.  
 N. Midland Divisional Tel. Co. R.E., Shelton, Staffs.  
 Northumbrian Divisional Tel. Co. R.E., Barras Bridge, Newcastle-on-Tyne.  
 S. Midland Divisional Tel. Co. R.E., 32, Park Row, Bristol.  
 Welsh Divisional Tel. Co. R.E., 59, Charles Street, Cardiff.  
 Wessex Divisional Tel. Co. R.E., The Priory, Colleton Crescent, Exeter.  
 West Riding Divisional Tel. Co. R.E., Glossop Road, Sheffield.

#### (2.) CYCLIST BATTALIONS.

London Cyclist Battalion, Fulham House, Putney Bridge, S.W. (Detachments: Leigh and Finsbury Park.)  
 Kent Cyclist Battalion, Drill Hall, Tonbridge. (Eastbourne, Canterbury, Chatham, and Maidstone.)  
 Hampshire Cyclist Battalion, Southampton. (Farnborough, Havant, Winchester, and Basingstoke.)  
 Sussex Cyclist Battalion, Ship Street, Brighton. (Also East Grinstead, Hastings, Battle, etc.)  
 Devon Cyclist Battalion, Exeter. (Torquay, Cullompton, Crediton, Dartmouth, and Plymouth.)  
 Welsh Cyclist Battalion, Park Street, Cardiff. (Swansea, Neath, Bridgend, Barry, and Aberavon.)  
 Highland Cyclist Battalion, Birnan, Perth, N.B. (Stirling, Forfar, and Fife.)  
 Lowland Cyclist Battalion, Headquarters Linlithgow. (Boness, Armadale, Bathgate, Uphall, Fauldhouse, West Calder, and Kirkliston.)  
 Northern Cyclist Battalion, 7, Ridley Place, Newcastle-on-Tyne. (Sunderland, Hartlepool, Chester-le-Street, Gosforth, and Whitby Bay.)  
 E. Yorks Cyclist Battalion, Hull. (Howden, Beverley, Bridlington, Hornsea, and Filey.)  
 Norfolk Cyclist Battalion, York House, Rosary Road, Norwich. (Framlingham, Cromer, etc.)  
 Suffolk Cyclist Battalion, Ipswich. (Saxmundham, Lowestoft, Yarmouth, etc.)  
 Essex Cyclist Battalion, Colchester. (Chelmsford, Brentwood, Malden, Rochford, Leyton.)

### The Conditions of Service.

Men between the ages of seventeen and thirty-six are eligible, provided they come up to the physical standard required and pass the doctor as to fitness. They engage to serve for four years, but should they wish to resign before the expiration of their service they are entitled to do so on payment of a sum which is usually assessed as follows: During the first year £3, second year £2, third year £1, and in the fourth year nil. If, on the other hand, the reason for retirement is justified on the plea of business or absence abroad, a free discharge is granted.

During his first year the recruit must put in forty hours of attendance at military exercises, such as recruits drills, lectures, and field days. In subsequent years only ten hours are obligatory.

The attendance at camp (or army manoeuvres in lieu) is for fifteen days, unless a certificate from the employer is produced saying that the man can be only spared for eight days or not at all. Then leave of absence is granted and no penalty exacted. Each man is supplied free with a complete set of arms and equipment and two complete suits of uniform. Whilst at annual camp, in addition to the pay and allowances of his rank, a motor cyclist draws 6s. 6d. a day petrol allowance, whilst in a Cyclist Battalion he also draws £1 a year cycle grant and has any damage made good which is incurred whilst on military service. When attending army manoeuvres the motor cyclist draws 8s. a day petrol allowance (this covers breakages and insurance), and another 8s. a day for hotel expenses if he is not provided with board and lodging.

No man can be called up on any particular day except in the event of a national crisis, when a general mobilisation has been called by an Order in Council.

It will, therefore, be seen that the terms of service are by no means as onerous as some people believe.

### The Social Side.

The class of motor cyclist who joins the Territorial Army is typical of the sport, and nobody but an arrant snob could find anything to grumble at in the company he will have to keep. Moreover, the motor cyclists, whether it be in the Engineers or in the Cyclist Battalions, usually hang together and form a little mess of their own, and here Stock Exchange men, solicitors, doctors, insurance agents, and mechanics hob-nob together and learn to appreciate one another's good points and to get a wider outlook upon life. Even when two men can find no other common topics of conversation, there is always that inexhaustible topic—the motor cycle—for them to discuss and to wax friendly over.

As described above, there is at present room on the Territorial establishment for 112 motor cyclists with the Engineers and 221 motor cyclists with the Cyclist Battalions. About half of these vacancies are already filled, and there appears to be quite a rush for places.



## The Progress of the Motor Cycle.

Impressions by the New President of the Institution of Automobile Engineers.

**I**N the course of his presidential address, read on Wednesday, the 9th inst., before the Institution of Automobile Engineers, Mr. T. B. Browne, M.I.Mech.E., dealt with the progress of the motor cycle. We publish below an extract from his address:

A branch of our craft which has extended enormously within the last year or two, and which has attracted quite an appreciable amount of capital, is the motor cycle industry. It is but a few years since many scoffed at the idea of a successful motor cycle, as they did at the idea of a successful motor omnibus, and as we have seen, the number of motor bicycles registered in this country is about 130,000, not to speak of a large number spread throughout our colonies. I can give you no authentic statistics in relation to the number of motor bicycles now actually in use, for the reason that registrations once made are seldom cancelled, though the machines to which they refer may have been placed on the scrap-heap. However, 100,000 is a round number sufficiently accurate, and it is being added to very rapidly, and it is quite certain that where there is a demand for one car, there will be room for at least a dozen motor cycles. Large makers are now turning out machines by the thousand, and there is a host of smaller makers also busily at work. It will be remembered that a few years back the motor cycle sprang into popular favour, and a large number of these machines were to be seen on our roads, but, curiously enough, after a short period of popularity, they seemed to fall into disuse, until at last it was quite rare to meet a motor cycle anywhere.

The reason of this strange disappearance was due to the fact that the motor cycle had come before its time. Two very important adjuncts had not been sufficiently perfected to make it reasonably safe and reliable. The first was the non-skid tyre, which is an absolute necessity for motor cycles, and the other was the magneto ignition. In the early forms of motor cycles the vibration experienced was so great that no accumulator could be made to stand up against it, with the consequence that frequent breakdowns and renewals of batteries were experienced. The excessive vibration was also so trying to the rider that only the hardy athlete was capable of enduring it.

### The Comfort of the Sidecar.

By going carefully into the question of spring suspension this last objection has been entirely removed, and the problem of springing is, indeed, much easier than with the cars, the weight being so much less. Only those who have taken a ride in a sidecar can realise how very smoothly these lightly sprung vehicles run.

That this is so may be seen in the adoption of the motor bicycle for pleasure purposes by quite middle-aged men, who take out their middle-aged wives in sidecars, and also in the wide use of the machine for commercial purposes in carrying light and delicate goods. It is now no novelty for business firms to equip their travellers with motor bicycles, and they find that it pays them to do so, particularly in districts badly served by the railways, or where railways are few and the distances to be covered great.

This combination of circumstances has been instrumental, in our colonies especially, in bringing prominently before business men the advantages to be derived from the use of the motor bicycle. In several districts in England, Post Office contractors have adopted the motor cycle in their work with great success, the reliability of the machines making its adoption for such a class of undertaking quite safe. In the recent floods at Norwich, motor bicycles and sidecars were used with great success for carrying mails to the beleaguered city when the railway facilities had failed entirely.

As in the car world, each year sees new ideas put forward, but progress in design is necessarily slow, and one step has to

be proved sound before another can be taken. In cycle engine design, the past year has seen no wonderful changes, but there are several interesting portents. For instance, the Tourist Trophy race of 187½ miles, held in the Isle of Man, was won by a two-cylinder, two-stroke, water-cooled, chain-driven machine, at an average speed of 48.69 m.p.h., the cylinders being 69.8 mm. bore and 63.5 mm. stroke. This was not mere luck, for during the race in 1911 such a type of machine covered a lap of 37 miles at a higher speed than any of its competitors, and its victory this year was freely predicted. The extensive experiment with water-cooling which has been going on throughout this year and last thus received very welcome encouragement, especially as water-cooled machines of other makes, though failing in the race owing to tyre and minor troubles, showed a gain in speed on the hills. The result is that water-cooling for motor bicycles is receiving more attention than ever, and is making steady progress towards wide adoption.

This year has seen the production of several cycle engines with rotary valves, but these have not yet been placed on the market in the ordinary way.

### Features of Present-day Motor Cycles.

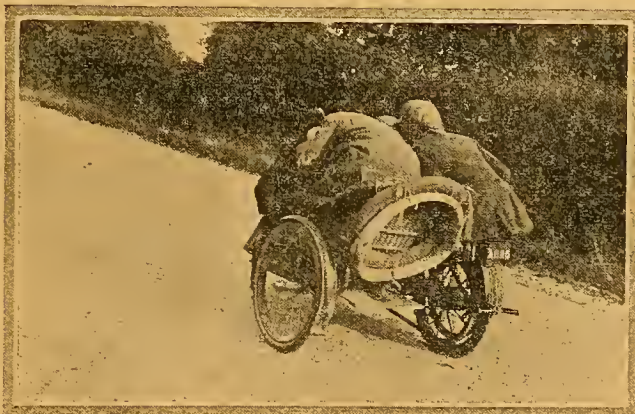
Other noticeable features of the development of motor cycles shown during the year are the almost universal use of the chain for transmission on high-powered machines, the very common fitting of clutches, and of a foot-starting device, and the wide use of change-speed gears.

Three-speed and gradually variable gears have come much into favour, giving, as they do, a wider selection of ratios with which to meet changing conditions of road and load.

There is also a noticeable increase in the favour with which automatic carburetters are now regarded, and next year several machines will be fitted with these devices. Whatever may be the excellence of the carburettor with adjustable air supply in the hands of the expert, it is certain that the automatic carburettor gives better service in the hands of the ordinary motor cyclist.

These, then, are the principal lines on which mechanical development has taken place in the motor cycle of recent times.

As regards the capabilities of the machine, there is practically no hill in the British Isles which the motor cycle cannot climb, while on the track it has attained a speed of 93 miles an hour, has covered over 3,000 miles in six days, and 20,000 miles in twenty-one weeks with a sidecar, and 40,000 in forty weeks as a solo machine.



A 3½ h.p. B.S.A. two-speed machine climbing Weathercock Hill with a total weight (including sidecar) of 66 stones.



## 1913 MODELS.

**The Williamson.**

Several refinements have been carried out on the new model Williamson, but the most important is the fitting of a spring device in the rear sprocket, so as to abolish any chain snatch. The device

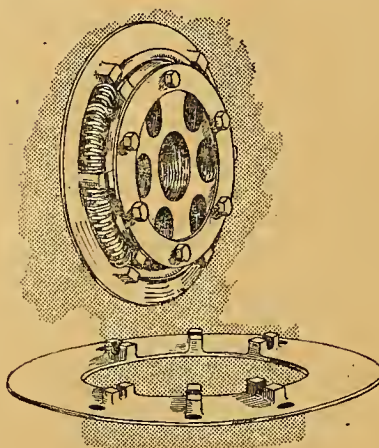


Williamson inlet pipe showing new carburettor position.

consists of two plates, on one of which is fitted the rear or driven sprocket, while the other carries a series of buffer and recoil springs mounted on a circular steel rod, and arranged between stops. Similar stops are arranged on the sprocket carrying plate, and these, when the device is erected, lie between the pairs of washers (marked A in sketch). Thus when the sprocket is revolved the drive is conveyed through the springs to the hub. In actual practice the device works admirably, and a very considerable motion of the sprocket can be obtained relative to the wheel. Other improvements consist of a new inlet pipe, which carries the carburettor inside the frame and behind the magneto, and an improved system of chain guarding.

We had a short trial run on an air-cooled model, and were impressed with the smooth starting due to the spring

drive and the wonderful absence of vibration for so large a twin-cylinder engine. One is apt to consider the Williamson as a sidecar machine only, and though it is built specially for that work we found the air-cooled model very comfortable and handy as a solo mount. It has a wonderfully quick pick up, and yet is as quiet as a lamb in traffic. Mr. Williamson is preparing to manufacture in quantities, and we should not be surprised if the machine becomes extremely popular.



Spring shock absorber fitted to Williamson rear sprocket.

**Two Large Contracts.**

We understand that the Triumph and Humber companies will fit the Sturmev-Archer three-speed hub gear for 1913, these two contracts alone calling for 200 gears per week.

**Zenith Motors, Ltd.**

The chief improvements in next year's Zenith machines will be the introduction of a plate clutch in the hub and a kick starter, which refinements will be supplied as an extra, some original innovations as regards mudguarding and the fitting of a more comfortable saddle. Messrs. Zenith Motors, Ltd., are busy at present with their colonial models, which have a good crank case clearance and yet allow the cylinders to be readily dismantled without removing the engine from the frame.

**Auto-carriers, Ltd.**

For next year very little will be altered in the A.C. Up to the present the most recent improvements have been the fitting of enclosed front wings, the provision of cast iron steps each side of the floor-board of the front seats, rubber covered control pedals, and a new method of operating the top gear. The latter is now controlled by a side lever which works the top speed clutch with the aid of Bowden wires attached to the rod working the expanding mechanism. If the lever is pushed forward the high gear is engaged, if pulled right back the brake is applied. The new automatic Brown and Barlow carburettor, allows the engine to be run slowly.

## AMONG THE ACCESSORIES.

**An Extension Piece for Belts.**

The Stanley Motor Belt Co., 32, London Road, Bromley, Kent, send us particulars of a new belt link. It has been patented by Stanley Webb, and fills a want in that it enables a belt to be shortened or lengthened in a minimum of time. The usual drawback to belt fasteners with long hooks is that a considerable length of the belt is unsupported when passing over the small diameter of an engine pulley. In consequence, there is a jerk which is quite noticeable when the engine is turned slowly, but not very apparent when the machine is running at speed. The

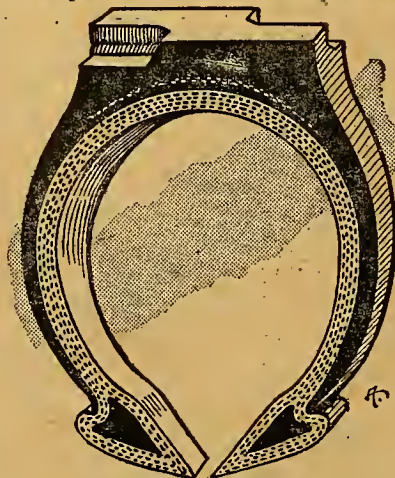


Stanley new hook link.

Stanley link fills this gap, and consists of an ordinary hook fastener at one end and a pin at the other. The link is brought up to the full section of the belt by means of fibre blocks, one on each side. If it be desired to increase the length of the belt, more than one link can be used, and it is claimed that the link is unnoticed and quite silent when running over the pulley.

**Skew Non-skids.**

Our sketch shows the latest pattern Skew non-skid tyre. This tyre is giving the greatest satisfaction on motor bicycles. It will be noticed that the tread is square with a series of recesses situated at intervals around the circumference of the cover. The cover is built absolutely on car lines, and the greatest care is used in its manufacture, while there is an ample amount of rubber on the tread.



Section of the Skew non-skid.

Another form known as the Non-skid is of similar pattern except that the tread is round and it is not quite so heavy. The Skew tyre is made in the following sizes: 26in. x 2½in., 26in. x 2½in., and 26in. x 3in. We hope to submit shortly one of these to a strenuous test, after which we will report on its behaviour.

**A New Leather Belt.**

We illustrate a leather belt made by J. T. Bradford, of 91, Burnley Road, Colne, Lancs. It is constructed of special leather cut in strips, and riveted together with a washer on the top of each rivet so as to keep it in shape. On



Bradford's leather belt.

the inside of the belt alternate ends are allowed to project loosely for an inch or two, so that the belt must always be run in the same direction. This is an important detail which is too often forgotten. We have one of these belts under trial at the present time, and shall report upon it shortly. The belt is very flexible and will bend round the smallest of pulleys.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### Inconsiderate Riding.

Sir,—Re your note respecting Midland riders and the chief constable of Birmingham.

I hope good results will follow the efforts of the A.A. It is a shame that a few would-be "knuts" and budding motor cycle manufacturers should bring obloquy on us all. There is a small band of riders (whose names and numbers are known), and if they do not modify their speeds (and their noise), it will be a simple matter to bring them individually to the notice of the authorities. Some of these riders are quite good performers in hill-climbs, but the majority are "swankers."

Why do they not go and practise on Dinas Mawddwy if they want to let off steam? Though I do not suppose there is more than one of them who could climb Dinas on a single-gear 3½ h.p. machine.

FT 3698.

#### An Appeal to Car Drivers.

Sir,—With reference to a letter by "Medicus" asking for someone to suggest a scheme which will bring "chauffeurs" (I would suggest the word "drivers" here, as chauffeur suggests the paid driver, who, in my opinion, is not the worst offender) of large motor cars to give motor cyclists and sidecarists more room.

As this is the first letter I have noticed complaining of this treatment, I have thought that my own experience must be exceptional, and that I was a most unfortunate individual to meet so many road hogs.

I have driven several makes of machines since 1903 without an accident and without coming into contact with the police, so may claim that I am a careful driver; but many a time I have had to take to the footpath to save a smash.

It is difficult to suggest a scheme to deal with this effectively, but I think that if others like "Medicus" and myself, who feel they have good cause to complain, were to make an effort to secure numbers of offending cars, and send a complaint, with the number, to the R.A.C. and M.U., if they were members of either association this would reach them and probably bring forth an apology.

S. JEFFORD.

#### Hub Gears and Belt Drive.

Sir,—With regard to "Ixion's" query as to the life of three-speed hubs, it is quite probable that the wretched summer has prevented the piling up of big mileages, but I know of one instance in which over 7,000 miles have been covered very satisfactorily by a 5 h.p. machine and sidecar. Of course, this is not a great deal, but it shows that these hubs are getting out of the experimental stage. Within the next twelve months I hope to cover over 10,000 miles on a Triumph with Sturmey-Archer hub in the way of business and pleasure.

I notice that "Ixion" puts in a good word for the direct drive by belt if a large belt is used with a large engine pulley. With a small neat belt guard near the pulley, this drive will be hard to beat, and is much neater in appearance than the combined drive.

Inferior belts of small section made the combined drive necessary, and your contributor did well to champion this arrangement, but now belts are improved and larger, belt fasteners stronger, and bigger engine pulleys can be used, there does not appear to be any particular need for the primary chain, and it is by no means an ornament.

I should think that belt drive, being smoother, will considerably lengthen the life of the gears, as is the case with other kinds of machinery.

ENGINEER.

#### Hill-climbing.

Sir,—I should be glad to know if any 3½ h.p. motor cycle has climbed the hills around Mevagissey (South Cornwall) with a passenger on the carrier. On the 22nd ult. I climbed New Road Hill and (I think it is called) Polkirk Hill with a 12 stone passenger, my weight being 11 stones. A rider of a Scott machine witnessed our ascent, and said he thought we were the first 3½ h.p. to climb these hills.

CHIMPEE.

#### The Definition of Cyclecars.

Sir,—Referring to the letter over the initials "W.S." in a recent issue of *The Motor Cycle*, may I, as a possible purchaser of a Singer cyclecar, express the hope that the makers will not fit wire wheels, as suggested by your correspondent, but that they will adhere to their announced intention of fitting Sankey wheels, which to my mind will be more suitable in every way. They will certainly add to the appearance of the little vehicle, and they are much more easily cleaned.

VERDANT.

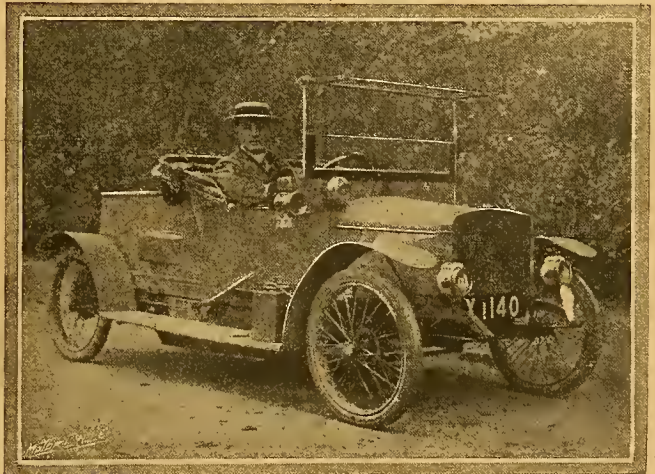
#### Cyclecars for Commercial.

Sir,—This is a subject you have broached on occasion, and for the benefit of your readers I can give them a few facts that may help.

The cost to run the G.W.K. works out at 2½d. per mile. This includes petrol, oil, garage, insurance, depreciation, and wear and tear. The enclosed photograph shows the special body I have had made for samples. (It is interchangeable with touring body in two minutes.) The machine is thoroughly reliable, except for it being a little too lightly built in places, but the friction drive is perfect. The machine will climb any hill, and beat nine out of ten cars on any incline. I have done 3,000 miles in two months, which in itself is a testimonial.

My experience of a 3½ h.p. motor cycle is that it works out at 1½d. per mile on 20,000. (You will notice I do not base my figures on petrol only.) I ran an A.C. for a season, which worked out at 2½d. per mile. As encouragement to any commercial interested, I have trebled my turnover in three years, solely through the use of motors.

X 1140.



The G.W.K. referred to in letter from X 1140.



### Chivalry of the Road.

Sir,—To put up against "Melanzie's" experience as described in a recent issue, I should like to relate a little experience that fell to my lot.

About two years ago, when in the old country and out on a long business ride, I broke the exhaust valve of my 1909 Triumph. This misfortune happened to me about six miles outside Bridgwater, and the nearest repair shop of any description was in Bridgwater.

I was carrying a "spare" in my toolbag, but when I came to fit it, I found that my agent had given me a 1910 valve, and, as I was riding a 1909 machine, it would not fit. In despair I packed up my traps, took off my belt, raised my saddle as high as it would go, and started to leg it back to Bridgwater. I had not gone a mile when I met another Triumph rider, who immediately stopped, sold me another valve (the right size this time), assisted me to fit it, and finally (being one of those lucky fellows with lots of spare time) accompanied me for the best part of the day and showed me the way over the very intricate country roads which I had to cover that day and with which he was familiar.

Although I am at present a stranger in a strange land, and, unfortunately, without a mount of any kind, yet I would say that when in the old land I always met with every assistance and courtesy possible from passers-by, although, riding a Triumph as I was, I was more often in a position to render assistance than to ask for it.

Ontario, Canada.

A.C.S.

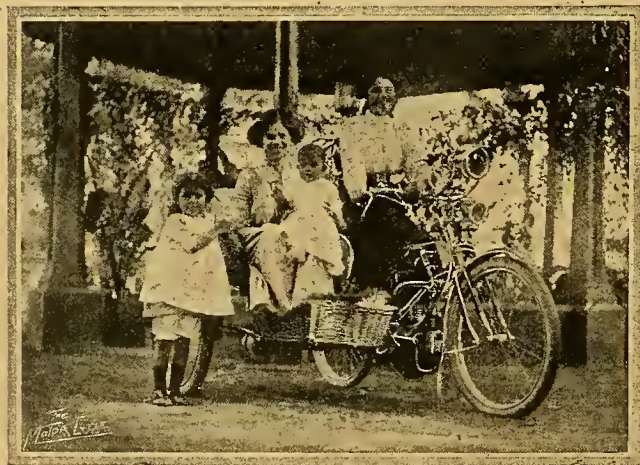
### Sidecarring in Mysore.

Sir,—I enclose photograph of a 2½ h.p. F.N. and sidecar combination. It is a year now since the machine has been used with a sidecar, and has given the greatest satisfaction with least amount of trouble; in fact, it is far more satisfactory than our new 9 h.p. car. We generally use the combination to take us to the shooting grounds and back, covering twenty to 100 miles a trip, on some of the worst roads imaginable, where it is a common sight to see country carts stranded with broken axles, etc. It is marvellous what the little engine can do on these roads, for it averages eighteen miles an hour. We have never as yet been held up with any mechanical trouble.

We find the shaft transmission ideal for our work, and has safely brought us through many a fix where a belt would have given trouble. To quote an instance, we were once caught in a heavy shower of rain which turned the road into a strip of slush in which the wheels sank in from five to seven inches. With the exception of a stop to clean the float chamber of water, we got home (a distance of twelve miles) without trouble.

The upkeep of the combination is very cheap, as it is light on tyres and does over 100 m.p.g. with sidecar.

The Millford Herald sidecar has stood the rough usage splendidly. A few months back a heavy iron-tyred carriage ran into it, one of the wheels passed over the front of the



Sidecarring in Mysore. (See accompanying letter.)

basket on to the seat, and bent the mudguard; the carriage turned turtle; the axle on sidecar or the tube carrying it was not affected in the least.

Mysore, South India.

WILL THEO.

### A Double-seated Sidecar.

Sir,—Enclosed is a photograph of my wife, daughter, and myself in my special sidecar turnout, taken on Brickfield Hill, on the occasion of the Feilding Motor Cycle Club



Double-seated sidecar referred to by E. F. P. Hinds.

Hill-climb. We successfully climbed the hill, which has a gradient of 1 in 4½; and in the competition for solo machines, which I won, several failed to make the ascent.

The car has a wheeltrack of 3ft. 6in., with two elliptical springs fitted on main axle underneath the body, making seat position very low and comfortable. We have two main frame tubes joining back axle, and these are brought up to one lug, which connects to the main tube at head of cycle. This, with the extension at back, makes it very rigid. The seat and back are upholstered with springs, and I can assure you it is luxury itself to ride in.

Palmerston North, N.Z.

E. F. P. HINDS.

### Petrol Consumption Better on Hilly Roads.

Sir,—The letters in your much appreciated paper respecting petrol consumption and costs of motor cycling suggest that it might interest your numerous readers to learn of my experiences.

Seven months ago I landed a motor cycle with an 85 x 85 mm. J.A.P. engine, Chater-Lea pedalless frame, Druid forks, B. and B. carburettor, Mabon clutch, and Dunlop rubber-studded tyres. I have travelled just on 2,000 miles since, over the very indifferent roads of New South Wales, during which distance I used Shell petrol, averaging 99¾ m.p.g., or a cost of 1s. 2½d. per 100 miles. My total running costs are exactly 1d. per mile. This includes petrol, cylinder oil, tools, lamp, coat, leggings, cap, spares, punctures, *The Motor Cycle* (2d.), "Hints and Tips," "Motor Cycles and How to Manage Them" (1s. 6d.), maps, repairs, licences, etc. I got three punctures and broke three springs in my Druid forks.

On one occasion, in riding over the mountains, I averaged 155 m.p.g. petrol consumption, the roads very, very billy, rising 4,500 feet, in one place over 2,600 feet in twelve miles, and the temperature 24° to 29° Fahr. On another occasion I averaged 125 m.p.g. on a trip of 237 miles, when the temperature during the hottest part of the day was 155° in the sun, say 113° to 116° in the shade; and made yet another run of 258 miles on 2½ gallons.

On some of the roads the surfaces are almost unmade, and they are rough and hilly, 1 in 4, 5, 6, and 8 grades being frequent.

Sydney, N.S.W.

W.G.W.



### The Definition of Cyclecars.

Sir,—In your last issue I notice a paragraph in which "Ixon" refers to a certain make of cyclecar which competed in this year's Six Days' Trials, and suggests that this vehicle cannot have conformed to the rules governing that event.

If I am not mistaken, the cyclecar which "Ixon" has in his mind is one in which the body is separable from the chassis, and therefore it can only be the chassis weight that is in question. The heaviest chassis of any of the competing cyclecars turned the scale at 5 cwt. 3 qrs. 27 lbs., and therefore conformed to the definition of a cyclecar.

T. W. LOUGH OROUGH, Secretary A.C.U.

[According to this letter the body and spares of the cyclecar mentioned by "Ixon" weighed 5 cwts. 2 qrs. 8 lbs.—almost as much as the chassis.—Ed.]

### Importance of Efficient Lubrication.

Sir,—We observe that frequently no distinction is made between "mechanical" and "forced" lubrication. The letter under the above heading in your issue dated the 10th inst. is a case in point. We should, therefore, like to make our point quite clear.

In the W.D. engine the main bearings, crankpin, and gudgeon pin are force lubricated under a pressure of 10 lbs. per square inch (or more, if desired). In the Veloce engine the oil is not pumped under pressure to the bearings; the main shaft runs on ball bearings and oil is thrown on to the big end of the connecting rod, whilst the small end is lubricated in the ordinary way by the oil thrown from the revolving parts.

May we quote from *The Engineer* for November 11th, 1911, and leave your readers to judge whether the claim made by Veloce, Ltd., "to lubricate their engine and gears mechanically in a more efficient manner than is accomplished in any other motor cycle is valid."

*The Engineer* says: "The whole problem of lubrication is to supply the maximum possible amount of oil to the bearings without getting too much on the cylinder walls. The right way to do this is to force the whole of the oil through the bearings before any of it can be thrown into the cylinder, and the only system which does this is the forced feed."

W.D. MOTORS.

### The Stanley-Bailey Match.

Sir,—I notice in your paper of the 10th October a suggested match between Bailey and Stanley at Brooklands, which seems to be of a very sporting nature.

There is another match in contemplation which is also, I believe, for £100 a side, between the Vauxhall and the Sunbeam, and I think this is to be a three-lap race.

Would it not be possible to hold both these events on the same day?

The date at present suggested for the Vauxhall and Sunbeam match is Saturday, October 19th, although nothing is absolutely settled about this.

I think Percy Lambert is making the arrangements.

A combination match between two of the most successful motor cars and two of the most successful motor cycles of the year held at the same time would, I think, be a great attraction.

F. LINDSAY LLOYD,

Clerk of the Course.

[The above suggestion has been placed before Messrs. Whitworth and Mansell.—Ed.]

Sir,—As the acceptors in this challenge, we think we ought to inform your readers that the whole of the details connected with this race have not been settled.

The point that was overlooked by us is that Mr. Bailey himself is having something to say in the matter, and he feels that in a competition of this nature the events should be such as to bring out the relative merits of both machines and riders under conditions with which both parties are equally familiar.

Mr. Bailey is very jealous of his own reputation, and in a letter we have received from him recently he points out that, while Mr. Stanley has had a great deal of experience in road hill-climbs, and is experienced in this form of competition, he himself (Mr. Bailey) has only ridden in one road hill-climb, and he suggests that the Brooklands hill shall be used as one of the events.

A conference is being arranged between Mr. Stanley and Mr. Bailey, and we trust that all difficulties will be got over satisfactorily.

THE COLMORE DEPOT.

### Motor Cycle Taxation.

Sir,—I have much pleasure in enclosing the petition against further taxation of motor cycles, and will certainly send a copy of the proposed letter to our parliamentary representative.

W. R. ROWE.

Sir,—In reference to taxation of motor cycles, the only way as far as I can see in regard to taxation of motor cycles and motor cars is for the Inland Revenue tax to be abolished altogether and put on petrol. It is the only fair way of dealing with this question. If the tax be put on petrol, it will not matter whether you run a 1 h.p. or a 60 h.p.—you will just pay your share whether you run one mile or 1,000 miles. The bigger and heavier the vehicle, the more petrol it will use. What can be fairer?

J. T. BRADFORD.

Sir,—It is with great pleasure that I forward you enclosed list of names protesting against the unfair taxation which the authorities are trying to thrust upon us. I hope our efforts will be successful, as I think we are taxed too heavily now. I, for one, cannot think of keeping a motor cycle if it comes to pass, and I am only voicing the opinion of many others. I am only a working man in the motor trade and could not afford it. Hoping you will not spare any effort on your part to remove the present recommendation, and to reduce the present tax.

J. HAMPSTON.

Sir,—In this district (Gainsborough) we have approximately 150 motor cyclists, the greater part of whom work in the engineering works here. These men are in receipt of a weekly wage of say, 30s. per week, and the value of their motor cycles range from £5 upwards. I should say that fifty per cent. of these are accumulator models, and you know these have a very low value. I feel sure there must be thousands of the working classes, who by dint of hard work and thrift have managed to scrape up sufficient to buy a motor cycle, and who are a credit to the roads so far as their behaviour is concerned. This increased taxation would bear far heavier on them than the more prosperous rider could imagine, and will most certainly compel many of them to give up their best means of recreation.

G. C. WILSON.

Sir,—I have read with dismay that there is a proposal on foot to increase the present tax on motor cycles. This will, I trust, be opposed by all who are interested in this means of locomotion.

If the suggestions become law, then the industry is sure to suffer.

Take my own case as an example. In 1908 I was the owner of a 6 h.p. combination with sidecar, and fitted with a two-speed gear (which I found was indispensable with all its imperfections). Through monetary considerations, I had to give up the pastime. I now want another 6 h.p. sidecar combination, for business and pleasure purposes, and have been in communication with several makers for a new outfit, and I had practically settled for a well known make.

This latest proposal has squashed the whole scheme until I know what is going to happen, as I certainly will not pay £3 per annum tax, besides driving licence and petrol tax.

I reside in Wales, so require 6 h.p. in order to get about with any degree of comfort. If the Chancellor wants something to tax, let him put a £20 tax on those modern "Juggernauts" called steam lorries, etc., which tear about this part of the country in dozens with loads of four and five tons at ten miles per hour. They tear up the roads in a few weeks after steam rolling; consequently it is positive torture for one to ride in a well sprung modern car at more than fifteen miles per hour. I cannot quite agree with your remarks in your leaderette of September 26th, "We do not say this because motor cyclists, generally speaking, are men who cannot afford more, but because we think that on the lines of a general taxation motor cyclists are sufficiently burdened already." The majority of motor cyclists round Merthyr cannot afford more, and, if the tax be increased, then they will have to get rid of their machines. To some who own 5 h.p. and 6 h.p. machines two and three years old, the extra £2 per annum means half of their present running expenses, as they only go out at week-ends for short rides.

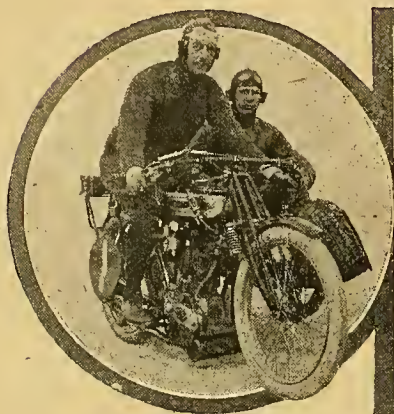
MAGNETO



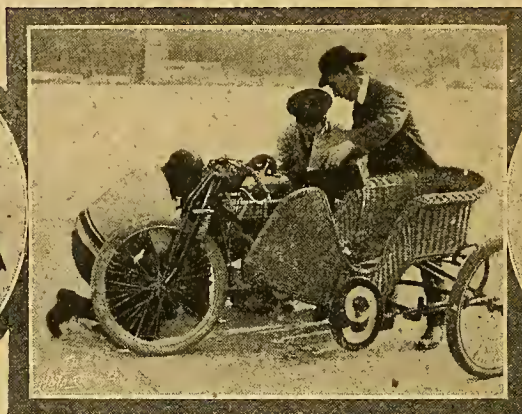
# The B.M.C.R.C. Open Championship Meeting.

## A BIG PROGRAMME.

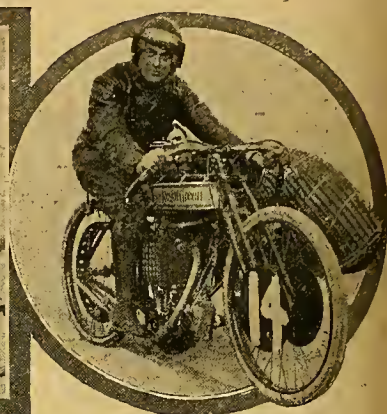
Sidecar records broken by Barnes (Zenith) and Garrett (Regal-Green).



(1) F. W. Barnes (Zenith sidecar), winner of the hour sidecar race.



(2) Hugh Gibson (Bradbury) filling up and making adjustments at the depot.



(3) S. F. Garrett (Regal-Green), who finished third. Garrett captured the one and two hours sidecar records last Friday at Brooklands.

**H**ELD in glorious weather and with a large number of spectators in attendance, the B.M.C.R.C. Open Championship Meeting was a great success. The fog at the outset was very thick, so bad in fact that the track could not be used, and so dense that people were seriously delayed on their journey down. At 11 a.m., one hour after the advertised starting time, Major Lloyd asked us to go round the track and report on its fitness for racing. We did so, and found the fog clearing off, so the Clerk of the Course, on hearing our report, gave the large assembly of competitors twenty minutes for practising, and at 11.45 the cyclecar race was started.

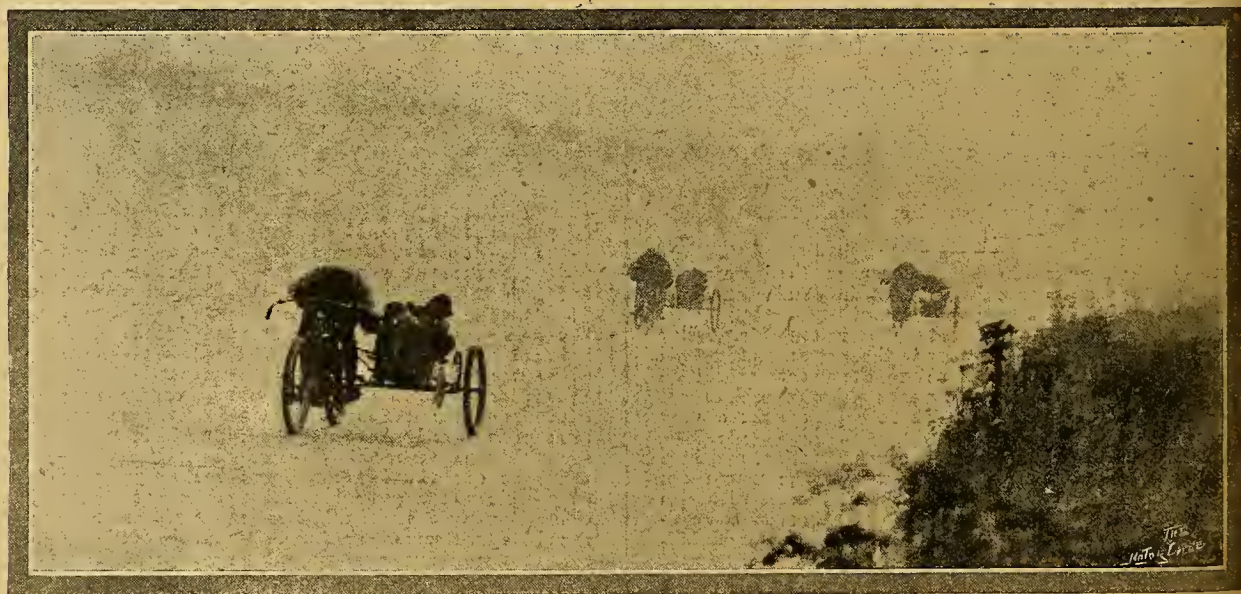
### The Cyclecar Race.

By this time the fog had almost cleared off, the sun shone brightly, and the air became so warm that overcoats could be taken off. The one hour cyclecar race was for vehicles complying with the R.A.C. and A.C.U. definitions, (i.e., not exceeding 1,100 c.c., chassis weight not exceeding

6 cwt., or if the body and chassis are not separate 7 cwt.) Prizes, the club's gold, silver, and bronze medals and certificates to all who finish.

Though a dozen entries had been received, only five competitors turned up at the starting line. Among these was Robert Bourbeau, the designer of the Bedelia, whom as a mark of hospitality on his visit to our shores, the police saw fit to trap near Surbiton the day previous. Bourbeau was driving the same machine he used at Le Mans.

At the end of the first lap the G.W.K. established a fine lead. Ward driving a Bedelia with a J.A.P. engine came next, followed by the Rollo and Bourbeau, who was not travelling particularly well. Wood on the G.W.K. began lapping at 52, and later increased his speed to 53.99 miles an hour. He maintained his lead, and in the eighth lap was a lap ahead of Ward. In the fifth lap the Sabella started about twenty minutes late, but, despite this fact, put up a good performance. On his tenth lap it was noticed that Wood's off side rear tyre was flat, and on the



RACING IN THE FOG

An impression of the sidecars at full speed. Competitors emerging from the fog which was dense on some parts of the track.



**The B.M.C.R.C. Open Championship Meeting.—**

twelfth lap he came in on the rim, the cover having come completely off. A new tyre was put on in about four minutes, and he restarted. The Sabella stopped owing to a belt coming off. Wood stopped again in his fourteenth lap to replace a high-tension wire which had become detached. A. W. Lambert (Morgan-Jap) started 32m. late. Result:

	Bore and stroke.	c.c.	mls.	yds.
1. J. T. Wood (2 cyl. G.W.K.)	86×92	1,058	47	30
2. R. Bourbeau (2 Bedelia) ...	80×100	1,008	39	1,296
3. C. G. Pullin (2 Sabella) ...	85×95	1,080	32	1,698
V Busby (2 Rollo) ...	85×85	965	10	laps
H C. Ward (2 Bedelia) ...			8	laps
A. W. Lambert (2 Morgan-Jap) ...	85×85	965	7	laps

Wood was inside record until he stopped, and his average speed was only 60 yards outside his own record.

**The Sidecar Race—Records Broken.**

The next event was the hour sidecar race for machines with sidecars fitted with engines not exceeding 1,000 c.c., and carrying a passenger weighing not less than 10 stones. Prizes: The club's gold, silver, and bronze medals, and certificates to all finishing. Barnes led at the end of the first lap, but he shed his belt opposite the timekeeper's box. He was followed by Hunter, Tessier, Garrett, Wells, Applebee, Mago, Ware, Griffith, Hill, Woodhouse, Baskill (who was riding the new long stroke Rudge, 85×132), and Wiles. Tessier and Garrett ran neck and neck for the first place in the second lap, while Wells, Barnes, Applebee, Griffith, and Ware followed in a bunch. Garrett maintained his lead for the first eight laps, and then Barnes recovered his lost ground and took the first place, which he never afterwards relinquished. Garrett pluckily stuck to the second place till the fifteenth lap, and then Wells, who had gamely stuck to his task, crept up to second place. Garrett's performance on the 499 c.c. water-cooled Green-Precision engine is little short of marvellous, and a great credit to an engine of which two years ago we prophesied great things. During the race Hunter retired owing to a frozen carburetter and other troubles, and Ware through a broken cylinder. Two records were broken, as will be seen in the results given below:

	Bore and stroke.	c.c.	mls.	yds.
1. F. W. Barnes (2 cyl. Zenith)	90 × 77.5	998	52	200*
2. W. H. Wells (2 Indian) ...	82.5×93	994	51	840
3. S. F. Garrett (1 Green-Precision) ...	85 × 88	499	50	1,740†
4. F. A. Applebee (2 Indian) ...	82.5×93	994	48	1,734
5. J. Woodhouse (1 Regal-Precision) ...	85 × 88	499	45	1,700
6. G. Griffith (2 Zenith) ...	90 × 77.5	998	44	1,257
7. A. Mago (1 Bradbury) ...	89 × 89	544	43	530

\*Barnes beat his own record, Class E, 49 miles 1,233 yards, March 27th, 1912



C. R. Collier (8 h.p. Matchless-Jap), winner of the five lap race.

†Garrett beat the record he gained last Friday, 46 miles 1,333 yards, which supersedes Stanhope Spencer's record on August 30th this year of 46 miles 557 yards.

Barnes also improved on the fifty miles record time, 57m. 32½s., beating his own record on March 27th, 1h. 0m. 18.6s. Garrett also beat his own record of 1h. 3m. 55½s., 46.93 m.p.h., of the previous Friday, by 5m. 10s. On Friday Garrett also gained the two hours' record, covering in that time 87 miles 889 yards, 43.76 miles an hour. Previous best, Stanhope Spencer (Rudge), 30th August of this year, 86 miles 115 yards.

**Mechanical Notes.**

The contrast in sidecars was distinctly interesting. Tessier had one of the lightest possible sidecars attached to his machine. Others used coach-built sidecars of the Canoelet pattern. Of the machines entered the majority were single geared, and as in these days single geared sidecar machines are an anomaly, it is a pity that variable gears are not rendered compulsory in sidecar races, a starter being forbidden. It is pleasing, however, to note that Barnes, of course, used the Zenith-Gradua gear, and Wells came in second, using the Indian two-speed gear and clutch. Mago (Braibury) had a curiously shaped bell-mouthed air intake, the bell-mouth facing forwards, so that the air was forced up against the end thereof and then back up the pipe into the carburetter.



Start of the hour race for Junior T.T. machines. G. E. Stanley (2½ h.p. Singer) proved victorious.





The long line of starters for the Hour Championship for "The Motor Cycle" cup—at which J. L. Emerson (3½ h.p. Norton) proved the ultimate winner, covering 63 miles 1289 yards in the hour.

### The Junior Hour Race.

The Junior Hour A.C.U. Championship race was really an exciting event. The first prize was *The Auto Challenge Cup* and the A.C.U. gold medal, the second the club's gold medal, the third the club's silver medal, and as fourth prize the club's bronze medal. The winner in 1911 was Harry Martin. McNab rode a Regal-Jap, which looked diminutive beside his bulky form. Scorning a push off which some kind spectator offered him, he said, "Oh! no thanks, I can throw it away if I don't like it." He did not follow out this threat to the letter, but gave up in three laps. Bailey led at the end of the first lap, followed by Newsome, who was seen on a Douglas for the first time, then came Weatherilt, Stanley, Kickham, Colver on the new Enfield, Barnes, Cox, Bashall, Dawson, Martin, and Roberts. In the next lap Stanley took first place and Bailey followed close in his rear. Right up to the fourteenth lap it was a ding-dong race between Bailey and Stanley. The latter's 299 c.c. engine was running in the most extraordinarily efficient manner. Martin, who was running the only accumulator ignited machine, retired owing to the earth wire coming adrift. Barnes gave up through plug trouble. Weatherilt's cylinder blew to pieces in a manner very similar to Ware's in a previous race. Bailey, who was leading in the thirteenth lap, had a valve break in the fourteenth, and Newsome had the valve spring cup come adrift in the thirteenth, but restarted. These various retirements brought Stanley into the first place, and Colver and Kickham into second and third respectively. The result was as follows:

	Bore	and stroke.	c.c.	mls.	yds.
1. G. E. Stanley (1 cyl. Singer)...	69	× 80	299	55	1,260
2. H. V. Colver (2 Enfield) ...	54	× 76	348	53	10
3. E. Kickham (2 Douglas) ...	60.5	× 60	350	52	1,390
4. W. F. Newsome (2 Douglas)...	60.5	× 60	350	50	36
5. W. H. Bashall (2 Douglas) ...	60.5	× 60	350	48	85

The next event was the Five Lap A.C.U. Championship Race, for machines up to 1,000 c.c. First prize the *Motor Car Journal Challenge Cup*, and the A.C.U. gold medal; second prize the club's gold medal; third prize, the club's silver medal; fourth prize the club's bronze medal. The winner in 1911 was C. R. Collier. This time Collier was out to win again, and we noticed he had fitted a forced induction arrangement in the shape of a pipe from the crank case to the bottom of the jet. Collier led from the start, and increased his lead throughout the race. The first lap order was Collier, Bashall, Reed, Godfrey, Baragwanath, Hunter, Printz, Jamieson (who started late), Garrett, Da Silva, and Mills. Second lap order, Collier, Reed, Bashall, Godfrey, Jamieson, Baragwanath, Hunter, Printz, and Garrett. Third lap order, Collier, Reed, Godfrey, Jamieson, Bashall, Hunter, Garrett, and Baragwanath. Fourth lap order, Collier, Godfrey, Jamieson, Hunter, Garrett, Printz, Bashall, and Baragwanath. Collier won easily. Results:

	Bore	and stroke.	c.c.	m.	s.	m.p.h.
1. C. R. Collier (2 Matchless) ...	90	× 78.4	999	10	53½	74.65
2. O. C. Godfrey (2 Indian) ...	82.5	× 93	994	11	45½	
3. H. Hunter (2 Zenith) ...	90	× 58	738	12	40½	

The last event of the day was the Senior Hour A.C.U. Championship Race for *The Motor Cycle Challenge Cup*, presented by this journal. This and the other cups competed for

in the championship races were given to the R.A.C. in 1900 as perpetual trophies for motor cycle events, and as there was to be no A.C.U. race meeting this year they were run off at the B.M.C.R.C. meeting.

The first lap was completed in the following order: Stanley, Emerson, Hill, Spencer, Garrett, Martin, Woodhouse, Godfrey, Collier, Carter, Miller, Vallis, Oliphant, and Tollady. Stanley kept his lead for the next lap, but in the third gave way to Emerson, who kept his place for two laps, and then surrendered the lead to Hill. Emerson again led, then Hill, and finally Emerson, who never again lost his place; in fact he was at one time two laps ahead of Godfrey, who was second when he (Emerson) stopped to replenish. Collier, C. R. Martin, and Godfrey kept together during the greater part of the race. Emerson's long stroke Norton ran like a dream, winning by over a lap, and carrying off *The Motor Cycle Challenge Cup*. The result was as follows:

	Bore	and stroke.	c.c.	mls.	yds.
1. J. L. E. Emerson (1 Norton) ...	79	× 100	490	63	1,289
2. C. R. Collier (2 Matchless) ...	70	× 64.5	497	60	1,660
3. C. R. Martin (1 Triumph) ...	85	× 88	499	60	1,650
4. O. C. Godfrey (1 Indian) ...	82.5	× 93	497	60	1,640
S. F. Garrett (1 Regal-Precision) ...	85	× 88	499	56	740
J. Woodhouse (1 Regal-Precision) ...	85	× 88	499	56	700
T. A. Carter (2 Martin-Jap) ...	76	× 64.5	499	56	660

It will be noticed that only twenty yards separated the second, third, and fourth men. Last year C. R. Collier won *The Motor Cycle Challenge Cup*. The meeting was one of the most successful the B.M.C.R.C. has yet held, alike as regards entries, organisation, and attendance.

As the time trials were postponed owing to the fog, these will be run off at the next B.M.C.R.C. meeting to be held on November 9th.



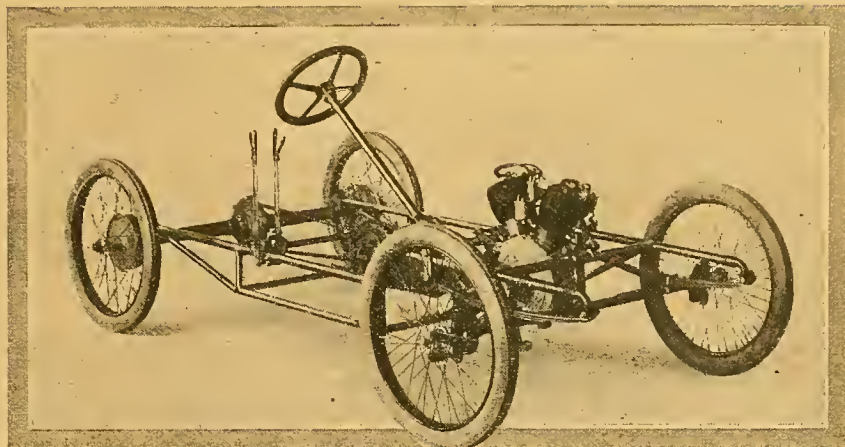
C. R. Collier (Matchless) and P. Weatherilt (Zenith) at full speed in the Hour Championship Race.



## THE PREMIER CYCLECAR.

Features: 7-9 h.p. M.O.I.V. Engine, Tubular Frame. Chain Drive, Two Speeds.

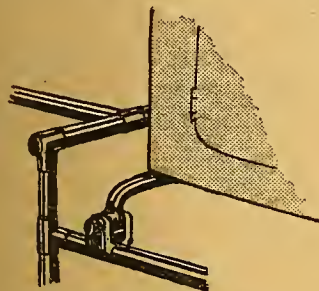
**L**IKE many other large firms of motor cycle manufacturers the Premier Cycle Co., Ltd., Coventry, have built a light four-wheeler, and the first example was completed at the beginning of this week. It is a very simple little vehicle, so constructed that there is the least possible chance of anything going wrong. The engine is the 7-9 h.p. twin-cylinder described and illustrated in our last issue, and drives through a single chain to a two-speed gear placed amidships. The engine drives from the off side, the valve gear being disposed on the near. A leather to metal cone clutch is mounted on the primary shaft of the gear box, as also is



Chassis of the Premier. The absence of rear springs will be noted.

The gear box is mounted on two flat members and may be slid backwards or forwards for chain adjustment.

as to provide an adjustment for the rear chain.

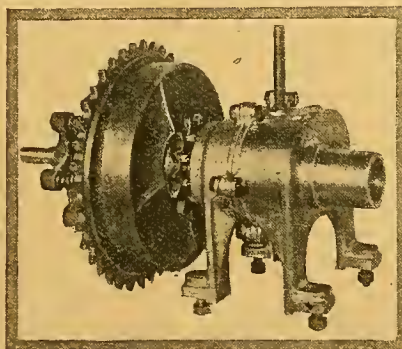


Front hinge for the body.

a large brake drum. The gear box is of the dog clutch type, the gears being always in mesh and the change being effected by sliding dogs; a direct drive is obtained on top gear.

### Chain Drive Throughout.

From the gear box the drive is transmitted by a single chain to a differential mounted centrally on the rear live axle. This axle follows the usual practice and carries at each end the shoes of powerful expanding brakes which operate one on each rear wheel. The frame is of somewhat unusual construction, being of the braced tubular type, the fore part being narrowed to allow of a big steering lock and raised to permit good axle clearance.

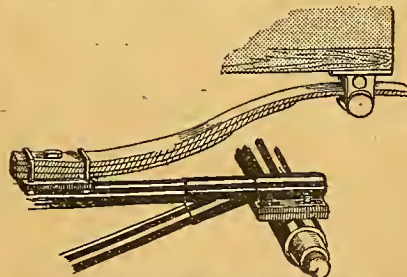


The two-speed gearbox and chain wheels.

The rear axle is bolted direct to the frame members by means of two pairs of flat plates. These plates are slotted so

### The Suspension of the Body.

In front the chassis is suspended on semi-elliptical springs, while the fore end of the body is hinged, the rear being supported on quarter elliptical springs. Steering is by worm and sector, a 14½ in. wheel being fitted. 26 in. x 2½ in. tyres are used, and the machine has a 4 ft. track and 6 ft. wheelbase. The body gives comfortable room for two people to sit side by side, and ample accommodation for tools and luggage at the rear; both brake and change speed levers lie inside

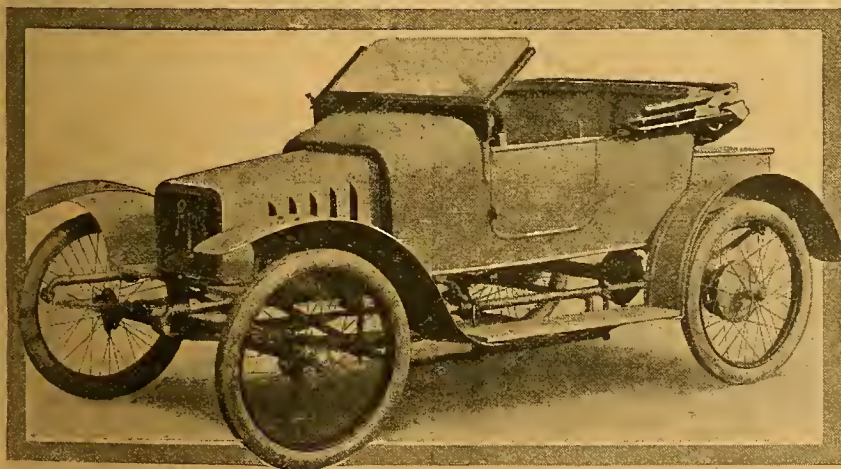


Method of springing the rear of the body.

the body. A dummy radiator adds to the appearance of the little vehicle without interfering with the cooling, for five air scoops are fitted on each side of the bonnet.

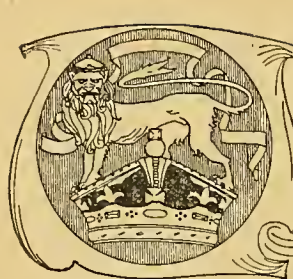
### PEUGEOT 1913 MODELS.

The firm of Peugeot Frères will exhibit at the forthcoming shows the following new models. A 3½ h.p. single-cylinder, 84 x 90 mm., with Bowden controls throughout. A stand, carrier, and specially wide mudguards will be fitted to bring this mount up to British requirements. The sidecar model will have a V twin air-cooled engine of 5 h.p., 75 x 75 mm., and arrangements are being made to fit the Armstrong hub gear as a standard. A Millford sidecar will probably be adopted, and the tank of the motor cycle will be enamelled.



The complete vehicle, which, as will be noted, has a dummy radiator





# CURRENT CHAT



## TIME TO LIGHT LAMPS.

Oct. 17th	...	6.2 p.m.
" 19th	...	5.58 "
" 21st	...	5.54 "
" 23rd	...	5.50 "

## Short Measure in Petrol Cans.

A reader asserts that nine out of ten tins of petrol he recently purchased were not full and contained less than the two gallons of spirit paid for. It is bad enough in all conscience to pay 1s. 6d. per gallon, but to have short measure in the bargain is really serious.

## Yorkshire made Motor Cycles.

Both the P. and M. and Scott firms are considerably extending their works capacity to enable a larger output of motor cycles. These two Yorkshire products are among the most popular on the market, and for some time the demand has far exceeded the supply.

## Police Trap.

We are informed of the presence of a police trap on the Pinner-Northwood Road. This is always working during week-ends, and occasionally during the week. The distance is a measured furlong, including the Eastcote-Watford cross roads.

## English-Dutch Trial.

Messrs. A. Citroen and J. Ferwerda, the donors of the N.M.V. Beker in the English-Dutch International Trial, have decided that the cup will be won outright by the country winning it on two occasions. In 1913 the trial will be held in England, consequently, should this country prove victors, the final decision will be in Holland in 1914.

## Trips to Olympia.

Trips are already being arranged to the Olympia Cycle and Motor Cycle Show next month. On Saturday, the 30th prox., the Birmingham Centre of the Cycle and Motor Cycle Trades Benevolent Fund will run a trip from Birmingham. Full particulars can be obtained from Mr. A. B. Williams, 13, Weaman Street, Birmingham, or Mr. J. Francis, 50, Alexander Road, Acocks Green, Birmingham.

## An Appeal before the Stewards of the R.A.C.

For the first time since the founding of the Royal Automobile Club the stewards have met to hear an appeal against the decision of a committee. It may be remembered that Vernon Taylor was recently suspended *sine die* by the A.C.U. Committee, and it was against this decision that he appealed. Sir David Salomons, Col. H. C. L. Holden, and Mr. F. P. Armstrong heard the case, and dismissed the appeal after giving the matter due consideration.

## A Thousand Motor Cycles Wanted.

We have received an enquiry for the name of a firm who can deliver a thousand  $3\frac{1}{2}$  h.p. motor cycles next year, with and without three-speed gears. Replies should be addressed "M.T.C.," c/o the Editor.

## Liverpool A.C.C. Hill Climb.

By the kind permission of Sir William H. Lever and the Liverpool Corporation Waterworks, the club has secured the use of the private road up Rivington Pike, Horwich, for its open hill-climb on Saturday. The course will be just under three-quarters of a mile long, with an ideal surface. It is practically straight and has an average gradient of 1 in 10, the worst part being 1 in 8. The club headquarters for the climb will be the Royal Hotel, Wigan. The nearest towns to the hill are: Wigan, Chorley, and Bolton, each of which is about six miles from the hill. 150 entries had been received on going to press, including Harry Martin, F. W. Barnes, P. Weatherill, H. C. Newman, F. G. Edmond, W. E. Cook, F. S. Whitworth, S. W. Phillpott, A. J. Dixon, H. Petty, and K. H. Clark. Further entries will be accepted at double fees.

## SPECIAL FEATURES:

### THE NEW TAXES.

### B.M.C.R.C. OPEN CHAMPIONSHIP MEETING.

### COLONIAL MOTOR CYCLES.

## The A.C.U. Silencer Trial.

It has definitely been decided that this event will take place this year, probably during the third week in December. The standard silencer has been copied, and the regulations are to be sent out immediately.

## The Taxation Petition.

Thousands of forms have been received from readers protesting against the proposed new rates of taxation for motor cycles, but still more are wanted. Motor cyclists should note that all *The Motor Cycle* blue sheets should be returned by Saturday next, the 19th inst.

## M.C.C. Winter Run.

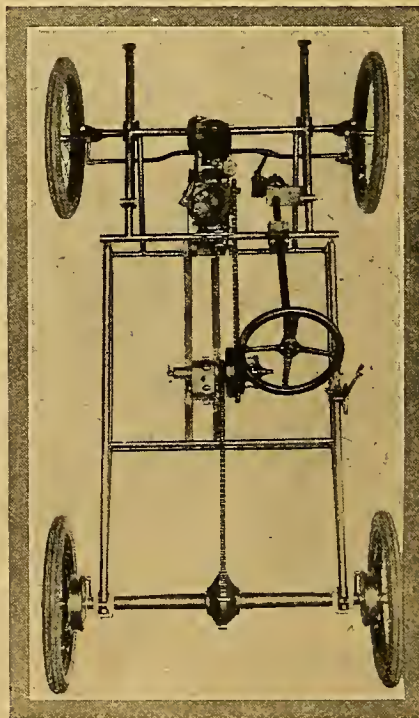
The date of the Motor Cycling Club's annual twenty-four hours' winter run has been altered from Boxing Day night, December 26th, to the 27th inst. The turning point will be Exeter, but in all probability some alteration will be made in the route.

## Partially Illuminated Number Plates.

Motor cyclists whose lamps only partially illuminate the number plate should be careful in Warwickshire. A number of Coventry riders have been summoned and fined, and on Saturday evening some members of the Coventry and Warwickshire M.C. were stopped on the Kenilworth Road. Two, unfortunately, had left their licences at home, so a double summons is likely to follow.

## New $3\frac{1}{2}$ h.p. Sidecar Records.

The Green-Precision water-cooled engine used by S. F. Garrett when he broke the one and two hour single-cylinder sidecar records at Brooklands so handsomely, is the same one he rode in the Isle of Man and other races since. The only difference between the engine and the one Messrs. F. E. Baker, Ltd., will market after the show is that the connecting rod and piston have been reduced in weight to a greater extent than would be advisable for touring engines. Timing, compression ratio, and other essential details are, we are assured, standard. The 1913 engines will, however, have rather larger valves. It is worthy of mention that Garrett weighs nearly 12 stones, and his passenger was no lightweight.



Plan view of the new 7-9 h.p. Premier cyclecar described on page 1179.



**The Trade and the T.T.**

Mr. A. Bednell, secretary of the Motor Cycle Manufacturers' Union, assures us that the manufacturers have not yet discussed their 1913 competition programme.

**A Douglas Cyclecar Promised.**

The latest cyclecar announced is the Douglas, but the machine is not yet ready, as it has not been tested. After all, as Messrs. Douglas Bros. possess such an excellent power unit in their 8 h.p. twin-cylinder horizontal water-cooled engine, it is not surprising that they have been tempted to mount one on four wheels.

**Regrettable Accident to a Club Secretary.**

We regret to report a fatal accident to the secretary of the Bradford-on-Avon M.C.C., Mr. A. W. Wheeler. Mr. Wheeler was riding a 2 h.p. lightweight last week-end and collided at a bend in the road near Norton St. Philip, Bath, with another motor cyclist on a twin-cylinder machine, who was carrying a passenger on the carrier. The other two riders escaped with severe cuts and a shaking.

**"The Motor Cycle" Petition.**

The new rates of taxation are to come into force on January 1st next, unless sufficient pressure can be brought to bear on the authorities. Readers are urged to do their utmost to obtain further signatures and forward the petition forms to us by Saturday next. The example of Mr. A. Eades, 28, Anderton Road, Birmingham, might be copied. He has sent us a lengthy form containing no less than 118 signatures.

**Auto Cycle Union Notes.**

**THE LIVERPOOL CONFERENCE.**—At the Liverpool conference of motor cycle clubs, which will be held on the 25th inst.—the day before the Autumn One-day Trial—the amateur question will be fully discussed. As most people are aware, the matter is one which has engaged the attention of those who take an interest in motor cycle politics for a long time, and a solution to the difficulty is hard to find. It is thought that by suggesting to the clubs that in their competitions classes be instituted for "novices" and "experts" some of the difficulties may be removed. By "novices" are meant those who are private owners who have not gained any award in competition, and by "experts" those who have won prizes. Club secretaries are finding that they cannot run competitions without trade support, and yet they cannot get sufficient entries from private owners, since the latter are unwilling to compete against men whom they have no possible chance of beating. Perhaps at the Liverpool conference some solution may be found.

**THE INTERNATIONAL FEDERATION OF MOTOR CYCLE CLUBS.**—A meeting of the representatives of Scottish, Irish, and foreign motor cycle clubs will be held at Olympia during the show week.

**HONOURS TO THE TAUNTON M.C.C. OFFICIALS.**—Messrs. W. G. Potter and T. Goldsworthy Crump will be awarded the A.C.U. gold medal in recognition of their services to the A.C.U. during the 1912 Six Days' Trials.

FUTURE EVENTS			
Oct.	19.	Liverpool A.C.C. Open Hill-climb.	
"	26.	A.C.U.—Autumn Open One Day Trial.	
Nov.	2.	N. Middlesex M.C.C. Open Winter Reliability Trial.	
"	8-16.	MOTOR CAR SHOW AT OLYMPIA.	
"	25-30.	MOTOR CYCLE SHOW AT OLYMPIA.	
Dec.	..	Auto Cycle Union Open Silencer Trial.	
"	27-28.	Motor Cycling Club Annual Winter Run.	

**The Stanley-Bailey Match.**

On going to press we heard that though Major Lindsay Lloyd's suggestion in our correspondence columns this week to run off the match at Brooklands on the 19th inst. had been considered, it was feared that the time was too short to enable arrangements to be completed for this date. We understand that Stanley is quite ready, but Bailey is preparing an exceptionally light machine with single forks, wood rims, and other light parts. It will be capable of over 60 m.p.h.

**Successful Year's Trading.**

We are very pleased to record the fact that the balance-sheet of Rudge-Whitworth, Ltd., shows a nett profit of £25,098, which with £14,776 brought forward from last year shows an available balance of £39,874. This sum will be appropriated as follows: Two years' 6% preference dividend, £11,200; 5% dividend on ordinary shares, £5,000; to reserve fund, £10,000; to carry forward, £13,575. The Rudge motor cycles were exhibited for the first time at the Olympia Show in 1910, and a record number have been turned out this year. The machine has also been most successful in competitions.

The Enfield Cycle Co.'s report also shows a good profit, the nett amount being £14,055, which with £6,297 brought forward amounts to £20,352. A dividend of 5% has been recommended on the ordinary shares, and 7% on the preference. £5,000 will be added to reserve and £8,707 carried forward. Owing to the development of the industry, additional works have been acquired.

**Motor Cycle "Show Numbers.**

The first of the special show issues of *The Motor Cycle* will be devoted to passenger motor cycles of all types. This number will appear on Thursday, November 14th, the two further show numbers will be dated November 21st and 28th.

**The A.C.C.F. 1912-1913 Programme.**

This club, which is the pioneer club of the motor cycle revival in France, has drawn up a progressive programme for the future. Among the more important events are a hill climb at Gometz on December 1st, the Circuit de Paris on 23rd and 24th March (Easter), 1913, in which twenty English competitors took part last year, and the International Motor Cycle Cup Race on June 13th. There will also be the Paris-London-Paris trial on 15th, 16th, and 17th August, and in September the Tour de France 3,000 kilometres (1,863 miles).

**222 Hour Record Broken.**

On Tuesday last, the 15th inst., at Brooklands, G. E. Stanley, riding a 3½ h.p. Singer, broke the Class C (500 c.c.) hour record. He covered just over 66 miles in the hour, and did laps at 68.5 m.p.h. Nearing the completion of the performance Stanley unfortunately broke a valve; but for this the speed would probably have been higher. We offer Stanley and the Singer Company our congratulations. The previous best time was Stanhope Spencer's 65 miles 803 yards on a Rudge, October 3rd, 1911.

**English Machines in Bavaria**

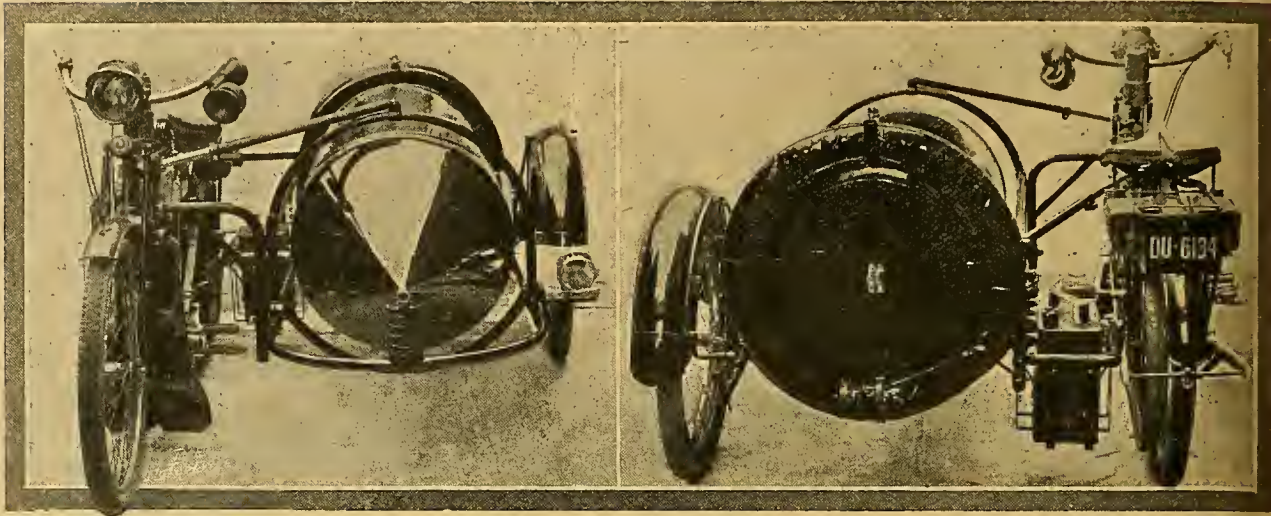
A correspondent in München writes as follows: "The first big Bavarian reliability run took place on the 5th and 6th inst. over a most difficult road from Munich to the Bohemian frontier and back again—five hundred miles in all. This time English machines were not barred, and secured first and second places. The two days' trial was run off in beautiful weather, and was controlled by officials in cars. The motor cyclists were not allowed to stop their engines within the controls. Severe mountain roads had to be crossed. Result: 1, H. Fränkel (3½ P. and M.); 2, C. Holste (3½ T.T. Triumph); 3, Nicolay (3½ N.S.U.); 4, Mayerhofer (2½ F.N.) There were others competing, such as Douglas, Peugeot, Wanderer, etc. It looks much like the revival of the motor cycling sport."

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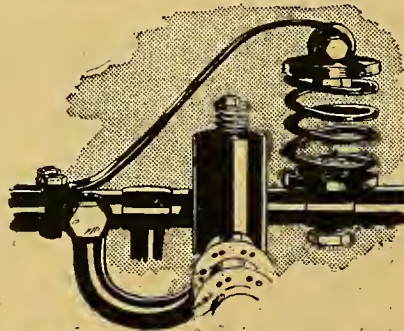
## A NOVEL GLORIA SIDECAR.



Front and rear views. This special design admits of a handy tool locker and tyre carrier.

Quite an attraction at the Olympia Show will be the sidecar of novel design which the Gloria Cycle Co., Ltd., are introducing for high-powered motor cycles. The body is shaped like a projectile, coming to a very fine point for ward and ending in a plain circle aft. In the back is a locker fitted with shelves for carrying tools, etc., on the lines we recently suggested, and behind is a tyre carrier.

The suspension is ingenious and embodies the well-known Gloria spring wheel, while the body itself rests on three large compression springs, rolling being prevented by light auxiliary leaf springs attached to the two rear coil springs. The chassis is of particularly stout construction, the main frame being carried right round the front of the vehicle, while a circular stay completely surrounds the two ends of the body. From the top of the front circle a fourth



Suspension of the Gloria sidecar body. The spring wheel is retained.

attachment leads to the cycle head. The body has no door, but a neat metal running board affords a simple method of entry. The machine is beautifully

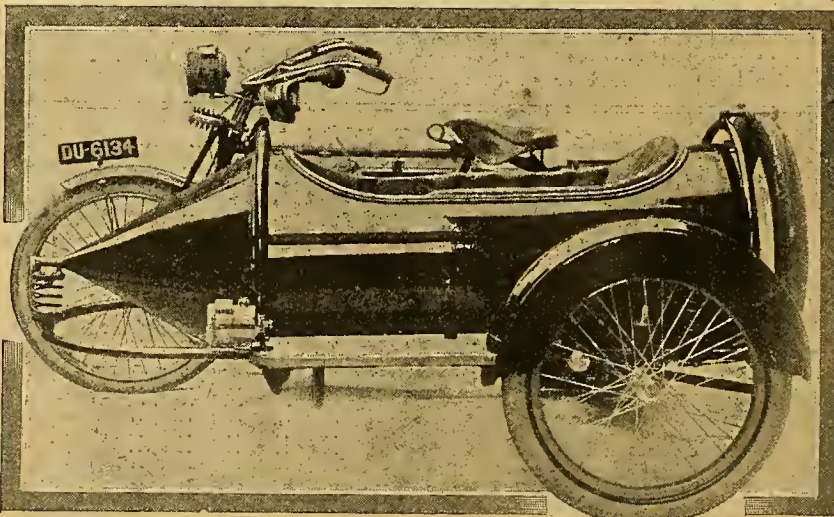
finished in every detail, and is sure to attract much attention. We suggested a streamline sidecar body some months ago, and this is the nearest approach to it we have seen.

## A.C.U. AUTUMN ONE-DAY TRIAL.

This event will be held over a secret route, starting from Kendal on the 26th inst., and will be the last important Auto Cycle Union event of the year. The following officials have been appointed: Judges, Messrs. S. W. Carty, W. B. Little, and the Rev. E. P. Greenhill; timekeepers, Messrs. C. P. Glazebrook and J. A. Walker; and chief marshal, Mr. S. W. Philpott, secretary of the Liverpool Auto Cycle Club.

## DATES OF CHIEF 1913 EVENTS.

The annual meeting of secretaries of clubs affiliated to the Auto Cycle Union will take place at Olympia on the Wednesday during the show week, when the dates of various competitions will be settled. The following are the provisional dates of the chief A.C.U. events in 1913: March 1st, the Spring One-day Trial; Wednesday, June 4th, and Friday, June 6th, the Tourist Trophy Races; July 14th to 26th, the Auto Cycle Union Long-distance Trials; September 24th, the Autumn One-day Trial. The Tourist Trophy Races will consist of two days' racing of four laps each for the machines entered for the Junior T.T. and two days of five laps each for the Senior machines, with one day of rest in between, during which time the machines will be kept locked up. The engine dimensions are to be the same as last year. There is a suggestion that the A.C.U. Long-distance Trial this year should last over ten days, and be run in conjunction with the Scottish Trials. This would indeed provide a searching test of machines.

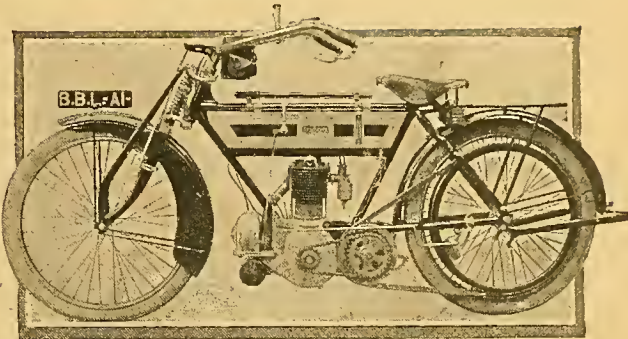


A motor cycle projectile! A novel design of Gloria sidecar suspended on spiral springs. The frame work, as will be observed, is of special construction.



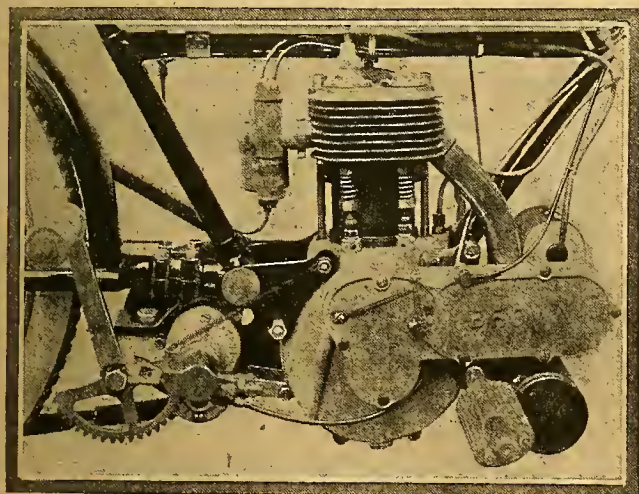
## THE 1913 BROWN MOTOR BICYCLE.

We have lately had an opportunity of inspecting the latest model  $3\frac{1}{2}$  h.p. Brown. The dimensions of the engine are  $86 \times 86$  mm., 499 c.c. The engine has been considerably improved, being fitted with a greater number of radiating fins, larger valves, which are placed further apart, adjustable tappets, and valve ports of ample dimensions. The same cylinder fastening, hitherto employed by means of two vertical rods fore and aft of the engine attached to bolts running through the crank case, has been retained. This is a very simple and excellent way of fastening down the cylinder with the aid of two nuts only. The exhaust valve lifter is now of the internal type. The compression tap is placed in a most accessible position. Other features of the machine are low riding position and its comparatively light weight. In fact, Messrs. Brown Bros. claim that it is 30 lbs. lighter than the average  $3\frac{1}{2}$  h.p. The excellent Bowden two-speed gear with kick starter and either hand or foot control is fitted.

1913 model two-speed  $3\frac{1}{2}$  h.p. Brown, with chain and belt transmission.

## A.C.F. AND FRENCH COMPETITIONS.

THE Competitions Committee of the Automobile Club of France met recently in Paris, and in co-operation with the following French manufacturers of motor cycles new regulations were established for the 1913 French reliability trials. The firms represented were: Clément-Gladiator, Terrot, René-Gillet, Peugeot, Griffon, Alcyon, and Bedelia. Representing the A.C.F. Competitions

The new  $3\frac{1}{2}$  h.p. Brown motor cycle showing kick starter and countershaft gear.

Committee were MM. René de Knyff, Surcouf, de la Valette, Longuemare, and Forreau. It was decided that the formation of a Federation would not bring about any improvement in French motor cycle competitions, and that it was better for the pastime to encourage a good sporting spirit under the aegis of the A.C.F. Monsieur de Knyff then announced the formation of a sub-committee composed of members of the Competitions Committee and the manufacturers to deal with motor cycle events. The following regulations were decided:

Class I. for motor cycles, sub-divided as follows:  
Single-cylinders, 250 c.c., weight 40 kgs., tyres 45 mm.  
Single or multi-cylinders, 350 c.c., weight 50 kgs., tyres 50 mm.  
Single or multi-cylinders, 500 c.c., weight 60 kgs., tyres 55 mm.

## Class II.—Sidecars.

350 c.c., weight 80 kgs., tyres 50 mm.

500 c.c., weight 100 kgs., tyres 55 mm.

750 c.c., weight 110 kgs., tyres 60 mm.

1000 c.c., weight 120 kgs., tyres 65 mm.

Variable gears optional, but clutches compulsory.

## Class III.—Voiturettes.

500 c.c., weight 100 to 200 kgs., tyres 50 mm.

1050 c.c., weight 120 to 250 kgs., tyres 55 mm.

The makers present would not hear of a motor bicycle class with cylindrical capacity exceeding 500 c.c.

The following definition of a touring motor cycle was drawn up:

Touring motor cycles competing in events held under A.C.F. rules to have two independent brakes, a toolbag (dimensions to be defined later), front and rear mudguards forming an angle in front of  $120^\circ$  and at the rear  $180^\circ$ , to extend from edge to edge at least 10 mm. beyond the tyres on each side, comfortable saddle, footrests, silencer fitted with cut-out, luggage carrier, and tank to contain a minimum of five litres petrol and one of oil.

The industry in France appears to be anxious to support the A.C.F., and an attempt is to be made to form a union of the clubs in Paris to organise big trials next year.

The decision not to support the formation of an International Federation appears to us to be rather unwise, because if all countries were to meet on level ground and formulate rules for the proper conduct of competitions it would be far better for manufacturers of motor cycles and competitors.

## NATAL M.C.C. HILL-CLIMB.

The N.M.C.C. recently held a most successful hill-climb for the Shiniwell trophy at Inchauga, which was attended by a large gathering of spectators. Nearly all well-known English makers were represented, and the timing was carried out by an electrical apparatus made by Mr. C. Morris. The positions of the leaders were:

Rider and machine.	secs.	Formula.
1. P. Flook (T.T. Triumph) ...	51	3772
2. E. W. Banfield (T.T. Triumph) ...	51	3874
3. H. E. Markham (T.T. Triumph) ...	55	4350
W. A. Berkenberg (T.T. Bradbury)	55	4529
R. H. Christian (Norton) ...	58 $\frac{1}{2}$	4917
C. H. Hope (Triumph) ...	61 $\frac{1}{2}$	5047



## AN AUTO-AVIETTE.

A 2 $\frac{1}{2}$  Royal Enfield, prepared for the Pewsey Carnival. The little twin (with cut-out open) made a noise similar to an aeroplane engine, and the propeller was driven by a round belt from the belt rim on the back wheel. The monoplane was on the lines of the Morane, and measured ten feet across.



## Mersey M.C. Hill-climb at Pen-y-Ball.



A. J. Brewer, in the passenger class. He was travelling well, but when nearing the top his belt broke.

THE Mersey Motor Club was again fortunate in having a perfect day for its open hill-climb last Saturday, the weather conditions being more like midsummer than October. Holywell was a buzzing hive of motors of all descriptions. The natives, however, are getting used to it, and appear to like the noise and excitement, and the hotel proprietors were smiling. Tea was difficult to obtain after the competition, every hotel being full.

During the competition the telephone worked well, which was particularly necessary owing to the system of timing. One timekeeper stood at the top with the receiver at his ear, while the starter, holding the transmitter, was placed about thirty yards above the mark where the competitors lined up. On the course being signalled clear, he would shout, "Number —, get ready. Go." The timekeeper at

the top could, of course, hear all this, and clocked them from the word "Go" till they passed him at the finish. Any competitor who passed the starter was considered to have started. If he failed to get going, he was permitted one more attempt. This arrangement worked very well indeed.

### Time and Formula Results.

There were four classes, and the results on time in CLASS 1 (singles or twins up to 350 c.c.), in which nine competitors took part, were:

	Time.
C. Williams (2½ A.J.S.) ... ..	55½s.
F. S. Whitworth (2½ Colmore-Douglas) ... ..	59½s.
S. W. Phillpott (2½ Humber) ... ..	1m. 3½s.

The formula results give the same positions as above.

CLASS 2 (twins or singles between 351 and 600 c.c.) This class drew the biggest entry, sixteen starters facing the line. Results:

	Time.
K. H. Clark (3½ Corah-Jap) ... ..	52½s.
H. C. Newman (3½ Ivy-Precision) ... ..	54½s.
V. E. Horsman (3½ Singer) ... ..	55½s.

Horsman unluckily had a dry skid on his way to the hill, and damaged both himself and his machine.

Formula results: 1, Horsman; 2, Clark; 3, Newman.

CLASS 3 (twins or singles between 601 and 1,000 c.c.)

Of the ten entrants only six took part. Results:

	Time.
J. J. Cookson (7 Matchless) ... ..	44½s.
N. H. Brown (7 Indian) ... ..	51½s.
A. Marston (8 Matchless) ... ..	56½s.

Formula results same as above.

CLASS 4 (sidecars and cyclecars).

Only four turned out, as the regulations insisted on a full-sized passenger. Result:

	Time.
N. H. Brown (7 Indian) ... ..	1m. 15½s.
H. W. Coopland (8 Williamson) ... ..	1m. 42s.

These two were the only competitors to complete the ascent, and on the formula were placed in the same order as given above.

The Motor Cycle formula was used.

C. Williams (2½ A.J.S.) won the Palmer Tyre prize.



(1) P. E. Tollree (3½ n.p. Bat-Jap) crossing the starting line. The starter's telephone may be seen on the right.



(2) H. D. Ashworth (Triumph) half way up Pen-y-Ball.



## CLUB NEWS.



Competitors who took part in the reliability competition on Saturday for the "Bisby Cup," held by the Sheffield and Hallamshire M.C.C. The photograph was taken at the start from "Crosspool," near Sheffield.

## Walthamstow M.C.

The speed-judging competition for the Henbrey Cup resulted as follows:

- |                                 |     |     |      |
|---------------------------------|-----|-----|------|
| 1. J. H. Kerr (3½ N.S.U.)       | ... | ... | 4s.  |
| 2. W. Wilson (3½ Springfield)   | ... | ... | 17s. |
| 3. W. S. Low (3½ Scott and sc.) | ... | ... | 55s. |

The distance of 51 miles had to be covered at a speed of 20 m.p.h.

## South Birmingham M.C.C.

A reliability trial and flexibility test will take place on the 20th inst. The course will be *via* Stratford, up Sunrising, through Tysoe, Ilmington, Chipping Campden, down Weston-sub-Edge, up Saintbury, down Willersey, up Weston-sub-Edge to Broadway, up Fish Hill, down Saintbury, up Willersey, up Tysoe, up Shennington to Stratford-on-Avon, and Red Hill. In the event of a tie the flexibility climb will decide the result.

## Ilkley and District M.C.C.

The following are the results of competitions held recently:

## THE TEAM TRIAL FOR THE HEMINGWAY TROPHY.

The course was one of about 200 miles, being from Ilkley to Kirkby Lonsdale, Kirkby Lonsdale to Keswick and back. One hour was allowed at Kirkby Lonsdale both on the outward and homeward journey for refreshments. Out of fourteen starters ten completed the journey. The result was as follows:

1. Chas. Ackroyd (5 Matchless sc.) and H.V. Sunderland (3½ Triumph), error 1½ marks; 2. Chas. Thackray (3½ Contrast-Jap) and E. Turner (3½ Rex), error 2½ marks; 3. Bert Platt (3½ Triumph) and A. Drummond (5 Johnson), error 7½ marks.

## HANDICAP HILL-CLIMB FOR THE DIXON CUP.

This hill-climb was run off on the knockout system in heats. The hill, which had a gradient of about 1 in 12, was perfectly straight, with magnificent surface, so some splendid racing was seen. There were eighteen entries. The winner was J. A. Hoffmann (3½ Triumph); 2. Burwin Whitaker (3½ Triumph); 3. Wilfred Moore (3½ Bat).

## SPEED TRIALS FOR THE TRADE CUP.

The speed trials took place on a perfect stretch of road in the Blubberhouse district. The measured course was 645 yards long. Electrical timing apparatus (the invention of Mr. A. Griffiths) was used. Each competitor was given a certain speed to do by the Handicapping Committee, the rider beating his set speed the most, or, in the event of no one attaining his set speed, the one nearest to it, to be the winner. Results:

1. C. Thackray (3½ Contrast-Jap), speed given 58½ m.p.h., speed attained 61.65 m.p.h. = +3.15 m.p.h., winning the cup presented by "The Trade," and the club gold medal; 2. W. Mangham (5 h.p. Matchless), speed given 62½ m.p.h., speed attained 64.67 m.p.h. = +2.17 m.p.h., winning the club silver medal; 3. J. A. Hoffmann (3½ T.T. Triumph), speed given 67 m.p.h., speed attained 68 m.p.h. = +1 m.p.h.

Mr. Felix Scriven has unanimously been elected to the presidency of the Ilkley and District M.C.C.

## Mid-Bucks M.C.C.

On the 3rd inst. the members of the above club held a hill-climb on Kingston Hill. The results, decided on formula, were: 1, C. H. Wright (Rudge); 2, T. Hopperoit (Rover); 3, J. W. Tollady (B.S.A.) Fastest time was made by J. W. Tollady.

## Coventry and Warwickshire M.C.

The speed-judging contest last Saturday proved an enjoyable function. A paper trail of eighteen miles was laid on Warwickshire by-roads by the hon. sec., Mr. G. Smith, from a Fiat car kindly loaned by Rudge-Whitworth, Ltd. Eighteen competitors took part, the winners being:

MOTOR BICYCLES.—W. Gibb (2½ Douglas), 2m. slow.

SIDECARS.—V. A. Holroyd (3½ Rudge), 1½m. slow.

CARS.—M. W. Danks (8 Rover), ½m. fast; D. J. Corser (12 Rover), ½m. slow.

The Humberette made its first appearance in competition in this event. S. Wright, who drove, was 3m. slow.

## Oldham and District M.C.

A hill-climbing competition was held on the 8th inst. on the Yorkshire Moors. The hill, which is about a mile long, is quite safe, and some excellent times were recorded. Results:

	SOLO CLASS.	Formula.	Time.
			m. s.
1.	J. Smith (T.T. Triumph)	101	1 7
2.	F. Wood (F.E. Triumph)	111	1 24
3.	P. Platt (T.T. Bradbury)	123	1 15

## SIDECAR CLASS.

1.	J. Smith (T.T. Triumph)	91	1 41
2.	F. Wood (F.E. Triumph)	93	2 4
3.	F. Whitehouse (F.E. Triumph)	104	2 16

The club's A.G.M. is called for the 29th inst., at 8 p.m., preceded by dinner and presentation of prizes.



A group of competitors at Wellesbourne, the starting point of the Coventry and Warwickshire M.C. speed-judging contest last Saturday.



## Club News.—

## Luton and South Beds. M.C.C.

Inter-team speeds trials v. Herts County A. and Ac.C. will take place on October 19th, at Luton Hoo Park.

## Doncaster and District A.C. (Motor Cycle Section).

The following won prizes in the reliability trial to Baldock and back on the 20th ult.: E. Goult (Rudge), H. Borrill (Triumph), G. Brenchley ( $2\frac{1}{2}$  A.J.S.), E. Cro s (8 Matchless), F. Wells (6 Matchless), C. Barnsdale ( $3\frac{1}{2}$  Rex), and J. Smith (Bradbury).

## Bedford and District M.C.C.

A reliability run was held from Bedford to York and back on the 5th and 6th inst. Results:

Solo Class.—1, G. Crawley ( $3\frac{1}{2}$  T.T. Triumph); 2, Waring ( $2\frac{3}{4}$  Enfield).

Sidcar Class.—1, F. W. Jameson (8-10 Jemmy-Jap); 2, S. Crawley ( $3\frac{1}{2}$  Triumph); 3, H. H. Rapley ( $3\frac{1}{2}$  Triumph).

Jameson and Crawley were only separated at the secret check, being "dead on" at all the other checks. Two men went to sleep whilst riding; the first, N. A. Yarrow (Triumph), ran into a gate and did considerable damage to his machine. The second, Haywood (New Hudson and sc.), ran into a ditch. On the outward journey, stops were made at Stamford, Newark-on-Trent, and Doncaster.

## Dundee and District M.C.C.

Very successful speed trials were held at Lunn Bay on the 7th inst. The sand was hard, but a trifle wet, and the weather fine. There were sixty-four entries, and some excellent performances were made notably by A. J. C. Lindsay, J. R. Alexander, who made fastest time of the day, and C. M'Gregor. Results:

## ONE MILE.

Lightweights.—1, C. M'Gregor (Douglas); 2, C. Y. Miles (Douglas); 3, D. Robbie (Douglas). Time, 1m. 25s.

Under 600 c.c.—1, A. Forr (Rudge); 2, H. W. Braid (Morton); 3, D. Robbie (Douglas). Time, 1m. 18s.

T.T. machines.—1, A. J. C. Lindsay (Rover); 2, J. Steele (Indian); 3, O. G. Braid (Indian). Time, 1m. 3s.

Under 1,000 c.c.—J. R. Alexander (7 Indian); 2, A. J. C. Lindsay (Rover); 3, J. Steele ( $3\frac{1}{2}$  Indian). Time, 57s.

## SIX MILES.

Lightweights.—1, C. M'Gregor (Douglas); 2, C. Y. Miles (Douglas). Time 9m. 56 $\frac{3}{4}$ s.

Under 600 c.c.—1, D. Robbie (Douglas); 2, H. W. Braid ( $3\frac{1}{2}$  Morton); 3, J. H. Ferrier ( $3\frac{1}{2}$  N.S.U.). Time, 9m. 13s.

T.T. machines.—1, J. Steele ( $3\frac{1}{2}$  Indian); 2, O. G. Braid ( $3\frac{1}{2}$  Indian); 3, A. B. Watson ( $3\frac{3}{4}$  Scott). Time, 8m.

Under 1,000 c.c.—1, J. R. Alexander (7 Indian); 2, O. G. Braid ( $3\frac{1}{2}$  Indian); 3, J. Steele ( $3\frac{1}{2}$  Indian).



## DONCASTER M.C.C. RELIABILITY TRIAL.

S. Nettleton and J. H. Wilkinson caught in one of the secret checks.

## Bishop Auckland and Darlington M.C.

The results of the recent hill-climb are:

Touring Class.—C. W. Smith (2 $\frac{3}{4}$  New Hudson).

T.T. Class.—C. Bone ( $3\frac{1}{2}$  T.T. Smith-Precision).

All-comers' Class.—C. Bone ( $3\frac{1}{2}$  T.T. Smith-Precision).

Sidcar Class.—C. Bone ( $3\frac{1}{2}$  T.T. Smith-Precision).

Twin Class.—E. T. Glaister (5-6 Rex).

The formula used was  $\frac{C \times T^2}{W}$ , as recommended by *The Motor Cycle*. The fastest time of the day was made by C. Bone.



Doncaster and District M.C.C. trial to Baldock and back. Checking competitors in Tuxford market place.





## TWO NEW WORLD'S RECORDS

Created at Brooklands, October 3rd and 5th, 1912, by Mr. G. E. STANLEY, on his  $3\frac{1}{2}$  h.p. Singer, using a

## PEDLEY BELT

### FIFTY MILES

Class C, 500 c.c. in 43 minutes  
40 seconds—  
AVERAGE SPEED  $68\frac{1}{2}$  M.P.H.

### FIVE MILES

Classes C and D, 500 c.c. and  
750 c.c.—  
AVERAGE SPEED 70'75m.p.h.

Mr. STANLEY writes, Oct. 7/12, as follows—"I have proved your Belts to be a mile an hour faster than anything else I have touched."

The Pedley Belt has already secured the highest possible award for reliability—SILVER CUP FOR BEST BELTS in the recent A.C.U. 6 Days' Belt Trials, and this latest speed success has not only firmly established its absolute supremacy over all other belts for both SPEED and RELIABILITY, but provided indisputable evidence that the

# PEDLEY

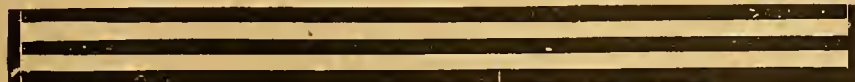
is the

## WORLD'S PROVED BEST BELT

J. PEDLEY & SON, LTD., Gt. Charles Street, BIRMINGHAM

WHOLESALE AGENTS FOR SOUTH AFRICA—Messrs. Smith Denham & Co., P.O. Box 2839, Johannesburg.

WHOLESALE AGENTS FOR NEW ZEALAND—Messrs. Bell Bros., 168, High Street, Christchurch, New Zealand.



In answering this advertisement it is desirable to mention "The Motor Cycle."



THE PULLMAN CAR  
OF MOTOR CYCLING  
ON H.M.  
WAR OFFICE LIST.

**BAT**  
MOTOR  
CYCLES

BEST  
EST  
EST

Built by the  
BAT MOTOR  
MANFG. CO.,  
PENGGE,  
LONDON, S.E.

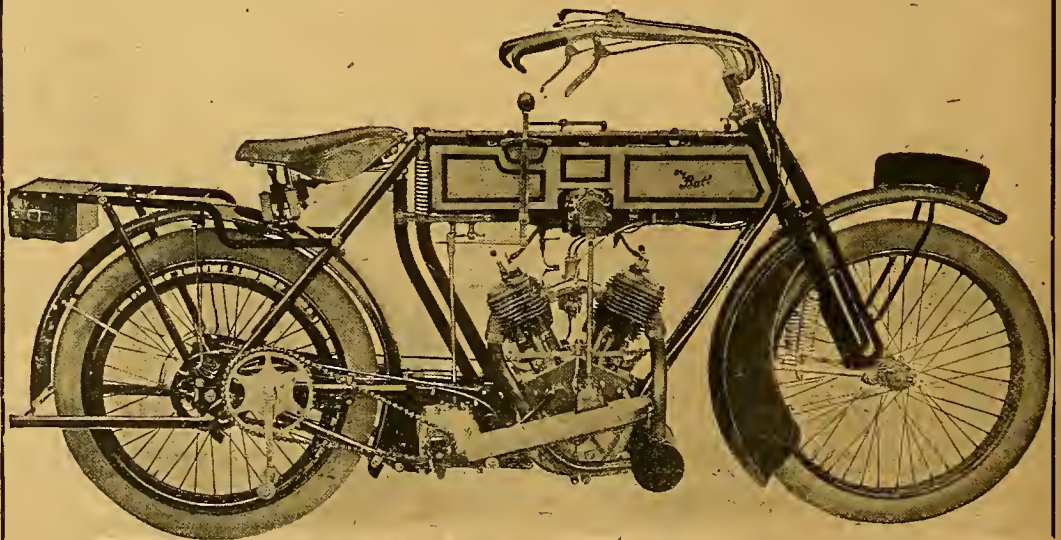
## WHY WAIT FOR THE SHOW!

If you are wanting a motor cycle—to be available for use in a reasonable time—to be equipped with all the refinements that go to make a high grade mount—**DECIDE NOW.**

### THE BRITISH BUILT BAT

has the **SPRING FRAME** (sprung fore and aft), **SANE MAGNETO POSITION** (away from wet and dirt), **TWO SPEED GEAR** (countershaft type), **CLUTCH** (foot or hand controlled), **FOOT STARTER** (most effective as well as dignified), and other features which place it in a class by itself.

*Send for "The Book of the Bat" and investigate.*





## Club News—



K. Holden (B.S.A.), winner of his class in the Birmingham M.C.C. flexibility hill-climb held near Evesham.

## Leads M.C.C.

After several postponements the annual run to Edinburgh took place on the 28th and 29th ult. A start was made at 6.30 a.m. The route left the Great North Road at Scotch Corner and turned across the moors through Bowes and Brough, thence *via* Appleby, Penrith, Carlisle (lunch), Longtown, Eskdale, Mossbail Summit, Hawick, and Galashiels. Out of seventeen competitors seven reached Edinburgh. On the return journey the coast road was taken through Dunbar, Cockburnspath, Berwick, and Alnwick, where a steady downpour commenced. J. Stuart-White (Bradbury) won the solo, and J. Tattersall (Bradbury) the sidecar class. Other finishers within schedule time were A. Mackie (3½ New Hudson), J. Wilkinson (4 Singer), and Brewis (B.S.A.).

## The Brookdale Club, Catford (Motor Cycle Section).

A hill-climb for members was held during the week-end, at Westerham, Kent. There were no mishaps of any kind, and some excellent climbs were made. Results:

## CLASS I.—Machines up to 554 c.c.

	Fig. of merit.
1. R. A. Croucher (Kerry-Abingdon) ...	74
2. S. T. Tessier (Bat) ...	75
3. W. F. Guiver (Rudge) ...	81

## CLASS II.—Machines up to 1,000 c.c.

1. R. A. Croucher (Kerry-Abingdon) ...	73
2. S. T. Tessier (Bat) ...	75
3. W. F. Guiver (Rudge) ...	78

Fastest time of the day: R. A. Croucher, 52½s.

## CLASS III.—Sidecars.

1. H. A. Cooper (Bradbury) ...	72
2. W. F. Guiver (Rudge) ...	83

## Heris County A. and Ae.C. (Motor Cycle Section).

There will be a slow hill-climb on the knock-out system at a hill not far from Welwyn on Saturday, October 26th, at 3 p.m. sharp. Separate classes will be run for single and twin-cylinder machines.

## Furness M.C.C.

The members of the above club held their last competition of the season on Saturday, 5th inst., in the form of a secret reliability run. The course was a circular one of 46½ miles. Eighteen miles per hour was to be maintained throughout the journey. There were no fewer than seven checks, four of which were secret, and Lindale Hill was observed. Possible marks 120. Result: 1. E. E. Clow (6 Zenith), 118½, and H. C. Wilkins (P. and M.), 118½, equal; 3. W. Jones (5 V.S. sc.), 113. Two competitors failed on Lindale Hill and retired.

## Middlesbrough and District M.C.C.

A time trial was held on the 21st ult. for sidecar and solo machines over a course of fifty-three miles. There were eight open and four secret checks, and competitors were penalised a mark for each minute under or over schedule time.

## Winners:

Sidecar Class.—1. B. Ayrtton (3½ James sc.), 5.27m. out.

Solo Class A.—1. C. F. Blincoe (3¼ Scott), 7.20m. out.

Solo Class B.—1. H. B. Beckwith (2¾ Douglas), 9.50m. out.

On the 28th ult. an all equal hill-climb was held on Yearby Bank. D. K. Webster (3½ Triumph) made least divergence from schedule time. During the competition S. Gjertson (7 Indian) made a record ascent of the hill in 44s.

## Newcastle and District M.C.

The Bevan-Goold reliability run and hill-climb was held on the 22nd ult., when the competitors and officials were favoured with glorious weather, and eighteen competitors finally faced the starter; of these nine survived the trial. The course was of a very heavy nature, being *via* Hexham, Brunton Bank, Stagshawbank Top, West Woodburn, Elishaw Bridge, Otterburn, Rothbury, Alnwick (*via* Lakeside and Corby Hills), Wooler, Millfield, Cornhill, Coldstream, Kelso, Jedburgh, Hawick, Langholm, and Brampton to Newcastle-on-Tyne, *via* the Military Road. Competitors were required to make their own feeding arrangements, no time being allowed for this, so making the competition a test for the competitor as well as the machine. Results:

Reliability Trial (Silver challenge cup, presented by Mr. J. E. Goold, and silver tankard).—1. G. W. Raper (2½ A.J.S.); 2. R. J. Robson (8 Chater-Lea sc.); 3. R. Wilson (3½ Triumph); club enamelled silver medals—1. Baty (4½ Dene sc.); F. A. Rudd (6 Rex-Jap), and F. Turvey, jun. (3½ B.S.A.); club bronze medal—Cecil Armstrong (3½ Ivy-Precision).

Hill-climb, Single-cylinder Class (Silver challenge cup, presented by Mr. Edward Bevan, and silver medal).—1. G. W. Raper (2½ A.J.S.).

Multi-cylinder Class (Silver challenge cup, presented by Mr. Edward Bevan, and silver medal).—1. F. A. Rudd (6 Rex-Jap).

Sidecar Class (Silver challenge cup, presented by Mr. Edward Bevan, and silver medal).—1. I. Baty (4½ Dene sc.).



Harry Long (4 h.p. two-speed Singer sidecar), the only motor cyclist who has ever claimed "20,000 miles in 20 weeks without a single involuntary stop," tried his luck on Brooklands recently. He covered a lap at 37½ m.p.h.



# Questions & Replies

A selection of questions or general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

**Benzole for Motor Cycle.**

Can I use benzole for my motor cycle without risk of damage? and can I mix it with petrol? If so, kindly give quantities.—B.H.T.

You may use benzole without doing any more damage to your engine than perhaps sooting it up a little; but you will find it necessary to give more air. You would be advised not to mix it with petrol. See *The Autocar* for October 5th.

**The Motor Cycle in Ceylon.**

I am going to Ceylon rubber planting in a fortnight's time. What are the prospects of motor cycling in Ceylon? Are the roads fairly good? Are there many machines out there? What is the price of petrol and oil, etc.?—A.F.B.H.

The roads in Ceylon are quite good, on the whole—naturally, not so good as they are in England, and they are well graded; but some of the hills are long. The pastime is going ahead very strongly over there. Petrol and oil are slightly more expensive than in England. It is advisable to take some spare parts with you.

**Skirting London.**

I should be very much obliged if you would send me the best route from London to Ipswich. I wish to avoid the London traffic, as I live in West London, and would like to strike on the main road at Chelmsford.—S.S.

Your best route would be as follows: Chiswick, Goldhawk Road, Shepherd's Bush, Wood Lane, which follow straight through till you reach the turning to the Bathurst Gardens, then go straight through West Avenue, Cavendish Road, West End Lane, after which take the right-hand road, which will bring you up to the top of Fitzjohn's Avenue, then go past The Spaniards, down Bishops Road into the Great North Road. Immediately after you have passed East Finchley railway bridge turn right, and continue absolutely straight on till you strike the Ware Road, just after the point where the Seven Sisters Road joins it. Go straight across this through Tottenham Hale, then turn right, continuing straight on across the Marshes to where you join the Woodford Road. (This route is somewhat difficult to explain, but is clearly shown on the R.A.C. Official Map of Recommended Routes Round London, which can be obtained from these offices, price 1s. 7d. post free.) You can then continue through Epping, Ongar, Chelmsford, Witham, and Colchester to Ipswich.



**Eye Levers.**

(1.) Will you please tell me how to remove the back wheel cover from a motor bicycle, having a belt rim one side and a dummy belt rim for the brake on the other? Is any tool sold for the purpose. (2.) Is belt slip readily distinguishable from clutch slip?—G.O.S.

(1.) We do not know of any special lever sold for this purpose. The problem is certainly a difficult one. (2.) Only by making sure that the belt is perfectly tight. If this is the case, it is obvious that the slipping is in the clutch and not the belt.

**London to Bournemouth.**

I am thinking of going from London to Bournemouth, and would like your advice as to the best route, giving mileage, etc., and the charge for admittance to Brooklands, as I should like to have a turn on the famous track. Would it be safe to go on the track with ordinary touring handle-bars?—S.J.

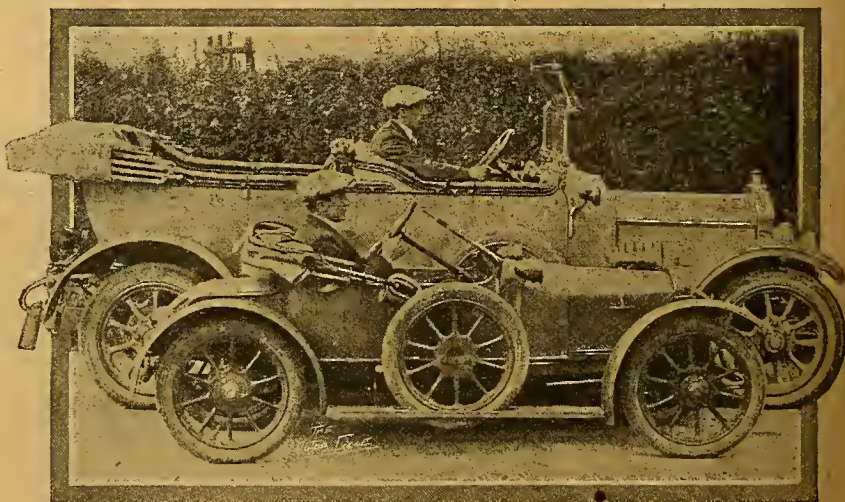
Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

The route from London to Bournemouth would be as follows: London, Kingston, Cobham, Ripley, Guildford, Hog's Back, Farnham, Alton, Alresford, Winchester, Romsey, Cadnam, Lyndhurst, Christchurch, Bournemouth. The distance is approximately 129 miles. The admission to the track is 1s. You would be quite safe to try your machine thereon.

**Starting on Stand.**

(1.) Would you please tell me in what way I can start up a Douglas two-speed model H 1912 machine on the stand? As it is not a free-engine, I have not yet been able to do so, and there are no pedals to assist in starting it. (2.) Would this machine be suitable for sidecar work?—T.J.K.

(1.) We have tried ourselves to start our own 2½ h.p. Douglas by pulling over the back wheel, but it does not seem to take kindly to it. You really want to run the machine on the low gear, and the first time the cylinder fires throw the lever into neutral. Then you can throttle down and jack up the machine if you desire to. The makers have wisely prevented this machine from being started on the stand, and thereby probably greatly increased the life of the engine. (2.) The machine is not suitable for sidecar work. Though it will take a sidecar, it is not fair to ask it to do so.



**A COMPARISON. 10 H.P. CYCLECAR—20 H.P. CAR.**

The Singer cyclecar being such a perfect miniature of a big car, and to scale in every part, it is difficult to gain an idea of its small size from pictures. The above photograph of the cyclecar beside a 20 h.p. Singer conveys an excellent idea of its relative proportions.





# accepted

That will take place as under—

**At BROOKLANDS, a five lap and a ten lap race, and—a hill-climbing contest on a Hill to be chosen later (dates to be arranged).**

The details were left to a Committee consisting of the Hon. Secs. of the following Clubs: Coventry and Warwickshire Motor Club, Oxford M.C.C., Sutton Coldfield and Mid-Warwickshire A.C., Mersey Motor Club, together with the Editors of "The Motor Cycle" and "Motor Cycling," but one condition was mutually agreed, viz.—

That puncture or belt troubles on the part of either rider, and in either event, should necessitate a re-start.

That's the match—the Tit-bit of the year, and now—

## Watch the Singer.

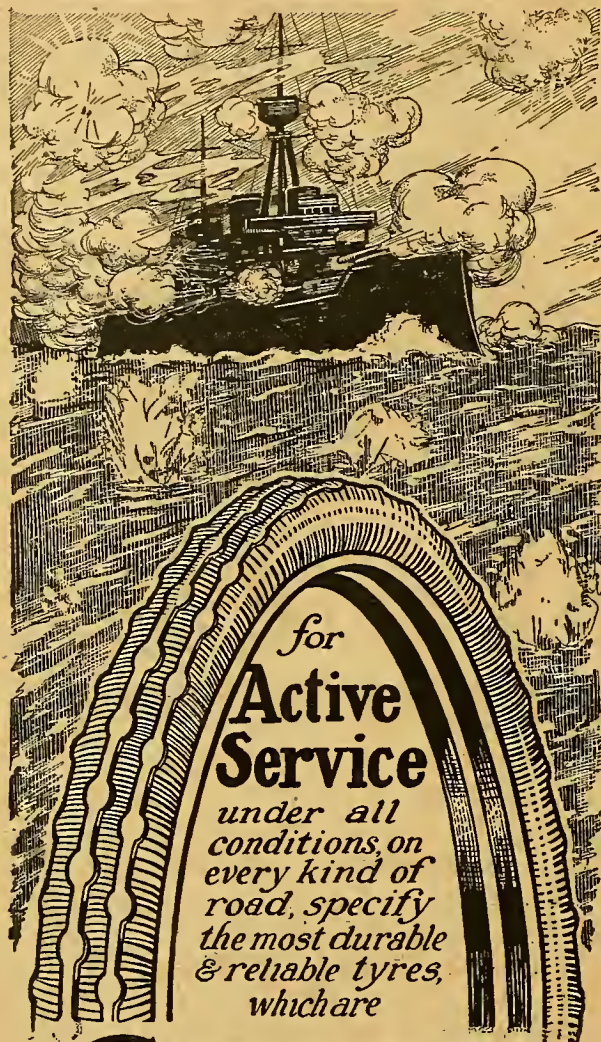
Fuller particulars from

**SINGER AND CO., LTD., COVENTRY AND LONDON,**  
who will also send you Singer Booklet free.

# DOUGLAS

*In answering this advertisement it is desirable to mention "The Motor Cycle."*





# CLINCHER DREADNOUGHTS

**"THE TYRE THAT IS SUPERIOR"**



The North British Rubber  
Co., Ltd.  
Tyre Sales Department,  
CLINCHER HOUSE,  
Great Portland St.,  
London, W.  
Tels.: Gerrard 8578  
— 8579. — rams.  
"Nobritire,  
London."

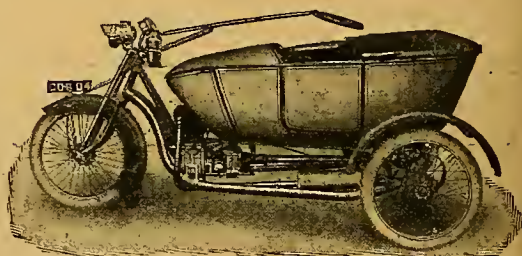
## THE WALL TRICARRIAGE

Built like a car

**Originates—does not imitate.  
Takes its model from the car.**

- \_\_\_\_\_ Shaft transmission. \_\_\_\_\_
- \_\_\_\_\_ Differential axle. \_\_\_\_\_
- \_\_\_\_\_ Two driving wheels. \_\_\_\_\_
- \_\_\_\_\_ No belts or chains. \_\_\_\_\_
- \_\_\_\_\_ Roc patent two-speed gear. \_\_\_\_\_
- \_\_\_\_\_ Easy and safe to drive. \_\_\_\_\_
- \_\_\_\_\_ Cheap to maintain. \_\_\_\_\_
- \_\_\_\_\_ Light on tyres. \_\_\_\_\_
- \_\_\_\_\_ Turns in own space. \_\_\_\_\_
- \_\_\_\_\_ Weatherproof—does not skid. \_\_\_\_\_

**The comfort of a car.  
The economy of a motor cycle.**



Orders are now being executed for the 1913 two-seater model of the same type that will be exhibited at the forthcoming Olympia Show.

Trial runs are available any day by appointment, either at the Works or at the London Agency.

Booklet describing the machine will be sent on application.

Sole Makers and Patentees:

**A. W. WALL, Ltd.,**  
Roc Motor Works,  
**Hay Mills, BIRMINGHAM.**

LONDON:

Messrs. ROBERTSON'S, 157, Gt. Portland St., W.





T. A. Edwin, Eastern Divisional Commander of the Salvation Army, who uses his  $3\frac{1}{2}$  h.p. Brown regularly and speaks in praise of its reliability. The owner's work in East Anglia renders the motor cycle's duties by no means inconsiderable, but he tells us he can run with almost "Bradshaw" precision.

#### Local Taxation Licence.

**?** I own one motor cycle and have purchased a second, and am selling the original one. If I place it in the hands of an agent to sell for me, that is, leave it stored on his premises, may I use the new one without taking out another revenue licence?—F.H.B.

If you do not use your old machine after taking the new one on the road you are not liable for a second licence, otherwise you must have a second licence, which, if purchased after October 1st, will cost 10s.

#### Pitting of Exhaust Valve.

**?** Will you kindly help me out of my difficulty with my 1912 standard motor cycle? My exhaust valve gets badly burnt or pitted after about 100 miles running, so I have to grind my valves often, or the compression goes away entirely. I use a B. and B. carburetter with a No. 32 jet, and Price's Huile de Luxe for lubricating.—W.M.

The trouble is due to the exhaust valve being composed of incorrect material. What you had better do is to write to the makers about this, and if they do not send you a valve which wears better you had better get one specially made.

#### Overheating.

**?** I should be very pleased if you could tell me the cause and remedy of the following: I have a  $3\frac{1}{2}$  h.p. 1910 Fafnir, overhead m.o.v. About two weeks back I took the cylinder down and cleaned it, up to which time I had had no trouble whatever. Since then I have had overheating to such an extent that three exhaust valve stems have broken. I find the valve to be badly pitted after running about five miles. I have tried various mixtures, but fail to remedy. I can, however, run with full air and about one-third gas. Do you think the timing is wrong? I give one pump of lubricating oil about every five miles. I use a sidecar, and run on a 33 jet. Is this too large?—W.M.

It is almost impossible to account for the trouble of which you complain. We

do not see what harm you can have done when taking down the cylinder and cleaning off the carbon deposit. We do not see how the timing can be wrong. The only way to tell whether the timing is wrong is to check this over. A 33 jet is on the large side, but not sufficiently so to account for the trouble. Are your exhaust pipe and silencer choked or obstructed in any way?

#### London to Edinburgh Run.

**?** Next March I intend purchasing a  $3\frac{1}{2}$  h.p. Triumph with a three-speed gear. I am very keen on entering for the M.C.C. London-Edinburgh and back trial, but a friend of mine, who has had some experience of competitions and trials, says I have "no earthly chance" of success. Now at the time of purchasing the machine I should be an absolute novice, but I should spend the Easter holidays on it and all week-ends previous to the trial. I am not of a mechanical turn of mind, but, in spite of this, am disinclined to agree with my friend, especially considering the reputation of reliability this make has won. However, I should value your opinion. Also the 800 odd miles (almost continuous), do you think that would affect the engine to its detriment?—A.B.W.

Anyone who can stand the fatigue of sitting on his machine and allowing it to take him along, and who can keep awake for one night, can get through the London-Edinburgh run and gain a gold medal. All he has to do besides sit on his machine is to keep within a quarter of an hour of schedule time to get the single journey gold medal. To get the double journey medal he has to do the same thing again after one night's rest. To get the cup is certainly more difficult, as this is simply a matter of adhering to a certain speed. There is no further test for the reliability of the

machine; it requires, however, a certain amount of practice. It is not reliability alone which gains the cup, but adherence to schedule time, and simply to the ability of the rider to guess his speed. As the whole ride is taken at a very easy speed, it cannot affect the engine any more than an ordinary run.

#### EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"C.R.W." (Brighton).—8 h.p. Matchless for sidecar work.

"J.H.S." (Dorset).—Reliability of Bowden two-speed counter-shaft gear with  $3\frac{1}{2}$  h.p. Bradbury or other standard  $3\frac{1}{2}$  h.p. machine.

"Dr. N.S." (Wien, Austria).—The Scott for use in the Alps; solo and sidecar.

"P.C.B." (Crawley).—A satisfactory exhaust whistle for a 1912 Douglas.

"W.G." (Newcastle).—Mabon variable gear with Triumph and sidecar.

"C.W.H." (Croydon).—T.M.C. and 8 h.p. water-cooled Williamson.

"W.J.K.B." (Dublin).— $2\frac{1}{2}$  h.p. Levis. Lubrication, liability to overheat, and petrol consumption.

"C.D.M." (Edinburgh).— $3\frac{1}{2}$  h.p. P. and M. and sidecar.

"W.J.P." (Dublin).— $3\frac{1}{2}$  h.p. Triumph. Solo and with sidecar. As regards reliability, hill-climbing, petrol consumption, and wear on belts and tyres.

"J.D." (Cardiff).—Mabon or Albion free engine clutches.

"W.H.T." (Harwich).—Pillion or tandem seats on  $3\frac{1}{2}$  h.p. motor cycle and variable gear used.

"W.T.M." (Dublin).—Binks two-jet carburetter fitted to a  $3\frac{1}{2}$  h.p. 1912 Indian. Is it better than the pilot jet carburetter fitted as standard?



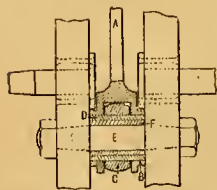
#### THE SIDECAR POPULAR IN SOUTH AFRICA.

With so much attention being paid to cyclecars, it behoves manufacturers to remember that the sidecar is exceedingly popular, and likely to remain in public favour for a long time to come on account of its cheapness, low cost of running and general reliability. Our photograph shows a group of Cape Town sidecarists.



**Connecting Rod Construction.**

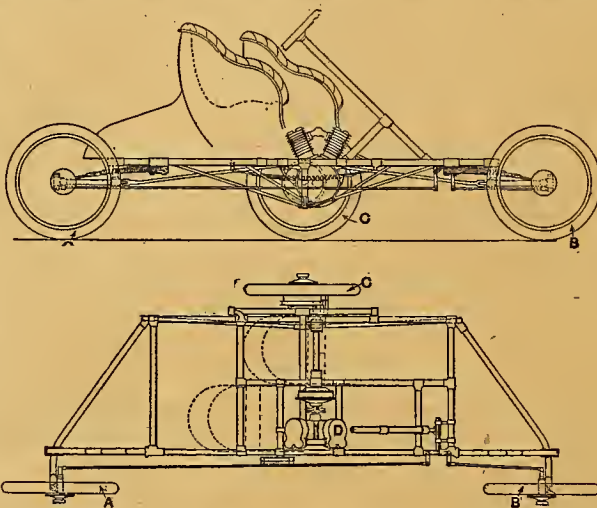
This invention is intended for application where two connecting rods drive on to the same crank pin. The connecting rod A is provided with two



side lugs B, between which passes the end C of the second connecting rod. A bush D is then inserted in the eyes of the rods and spun or riveted to the lugs B. Interposed between the crank pin E and the bush D is a floating bush F, the object of which is to reduce wear to a minimum. Suitable ducts are formed to convey the lubricating oil to the various faces.—Blumfield, Ltd., and T. W. Blumfield, No. 25,727, 1911.

**An Interesting Cyclecar.**

The accompanying elevation and plan show clearly the general arrangement of a three-wheeled two-seater vehicle on cyclecar lines. Two wheels A B are arranged in the same plane, and are both operated for steering purposes. The third wheel C is driven through clutch and shaft gearing from the engine arranged at D. Other particulars are readily obtainable from the drawings.—W. Starley, No. 16,820, 1911.

**Accessories to a Record.**

When G. E. Stanley broke the five and fifty miles records he used a Pedley belt, Dunlop tyres, and Wakefield Castrol oil.

**Catalogues Wanted.**

Rag. Guido Parodi, Vico Giannini, 12 Genoa, would like the leading firms of motor cycle manufacturers to send him their latest catalogues.

**A Double Success.**

Continental tyres and a Continental belt were used by E. F. Baxter when he won the Reliance Cup in the Liverpool A.C.C. open reliability trial on a twin Rex machine.

**Changes of Address.**

The Moto-Rève Co., Ltd., inform us that they have changed their address to Moto-Rève Works, Alpertons, Middlesex.

We are informed that the London depot of the Clipper Tyre Co. is at 102, Lennard Street, E.C., off Great Eastern Street, E.C.

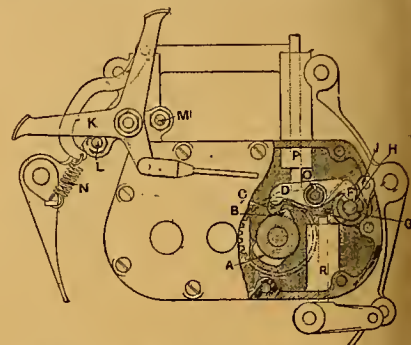
**New Sidecar Model.**

With reference to the Swan sidecar illustrated on the 26th ult., page 1,096, the makers, the Midland Motor and Cycle Co., Cowley Road, Oxford, state that they are manufacturing and putting this on the market at once, the chassis, suspension and design of body being all provisionally protected. Reference to the illustration previously published will show its special construction

**Ariel Decompressor.**

The exhaust cam A and decompressor cam B are arranged in parallel planes, the former acting through a rocker C as usual. The decompressor rocker D is pivoted at its centre on the rocker C, and is provided with a beel F engaging a cam G, which is provided with a recess H as shown. This cam G

can be moved into either of two positions by the lever J and rod and pedal mechanism K, the latter being held against stops LM by a spring N. The decompressor rocker D is provided with a coil spring O at its pivot, which normally moves it into the position shown. It will be seen that the heel of the



rocker D lies within the recess H in the cam G, raising the operative end of the rocker out of the path of the cam B. This is the position for normal running, the rocker D being clear of the cam. To obtain the reduced compression, the mechanism K is moved to rotate the cam G to a position in which the recess is moved from beneath the heel of the rocker D, causing this to be raised against the action of its spring O, and depressing its operative end into the path of the cam D, causing the rockers C and D to be lifted by the cam B, raising the valve tappet P, and allowing part of the charge to escape in the well-known manner. The ordinary exhaust valve lifter is shown at R. This is operated in the usual way.—C. T. B. Sangster, No. 22,475, 1911.

**SPARKLETS****Decompressors.**

Arrangements have been made whereby the Endrick Engineering Co., Warwick Road, Olton, Birmingham, have become sole concessionaires for Guest's Patent Decompressors. A special short pattern is marketed for Ridges and Bradburys, and for fitting in lieu of a compression tap in the centre of the cylinder head. The makers do not

recommend it for cylinders of less than 350 c.c., but for this and larger sizes it gives good results in the matter of easy starting and slow running. We have one in use on a 4 h.p. single-cylinder engine, and find the results warrant the fitting of it both for starting and slow running on top gear.

**Tyres Cheaper.**

Since September 16th the prices of tyres manufactured by Messrs. George Spencer Moulton and Co., Ltd., have been reduced.

**3½ h.p. B.S.A.**

The B.S.A. machine is of 3½ h.p., and only one size of engine is made at present. Owing to a slip E. Clissett, who won the Cowbridge and District M.C.C. hill climb, was stated to be riding a 5½ h.p. B.S.A., and this has led to a number of enquiries being received by the makers.

**Trade Announcements.**

We understand that E. A. Colliver, a well-known amateur, has joined Messrs. Godfrey and Applebee, Ltd.

B. Alan Hill, a successful rider of Rudge and latterly Indian motor bicycles, is shortly going into partnership with D. S. Parsons in the motor cycle and sidecar business at Squirrel's Heath, Romford. The firm has arranged for the exclusive agency in Essex for Rex and G.W.K. cyclecars, and Quadrant, Rex, and Corah motor cycles.

**"The Motor Cycle" Photographs.**

Duplicates of photographs appearing in "THE MOTOR CYCLE" will be supplied at the following rates:—  
Unmounted prints, half plate, 1/6 post free; mounted, 1/9 post free. This refers only to photographs taken by "THE MOTOR CYCLE."

Orders, which must be accompanied with remittance, should be addressed to the Photographic Department—Iliffe and Sons Limited, 20, Tudor Street, London, E.C.





A Corner of Bournville Works

## BOURNVILLE

### The COCOA de Luxe

The name suggests the bright, airy surroundings and the healthy, contented workers in Cadbury's Factory in a Garden. It stands, too, for a pure cocoa made from the finest cocoa beans, selected with skill and judgment.

7½d. a ¼-lb. tin.



"BY TEST THE BEST."

Cadbury, Bournville.

A New Book  
for Motor Cyclists.

# TRACING TROUBLES

: : Motor Cycle Faults; : :  
: : their identification, : :  
: : and their remedies : :  
: : simply and fully : :  
: : explained. : : : : : :

Specially prepared for novices, and invaluable in cases of roadside trouble. It gives methods for locating faults in the running of motor cycles, and advice as to the best means of remedying them when found.

Price	From	By
1/-	ILIFFE & SONS Ltd.,	Post
net.	20, Tudor St., London, E.C.	1/2
and all Booksellers and Bookstalls.		

## WHY

is it that on nearly every one of the "crack" machines you see about everywhere you find a

# LODGE PLUG ?

One reason is probably that the owner is a discerning rider and knows a good sparking plug when he sees one.

Again, it is now widely known amongst motor cyclists that a Lodge Plug is so designed as to develop just a shade **more power** than can be obtained with any other plug made. And engine power is what they want.

Suitable with all magnetos on all motor cycles, the Lodge Plugs are English made, and are obtainable everywhere.

Price 4/- each.

When ordering specify "motor cycle type"—those in RED boxes.

LODGE BROS. & CO.,

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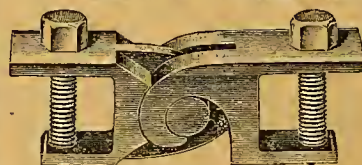
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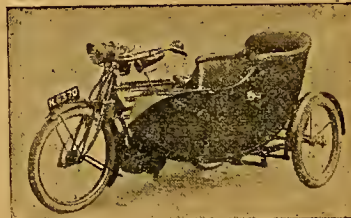
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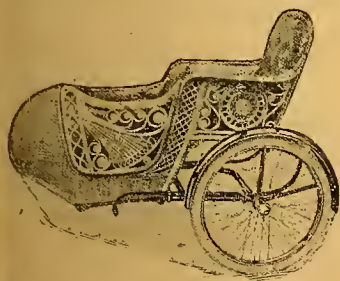


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NEW Hudson, 3½ h.p., 3-speed, J.A.P. engine; £59/17.

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WRITE, call, or 'phone 488 at once if you require a machine at your own price.

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ARIEL, 1911, variable, decompressor, sidecar; £36; exchange 1912 Bradbury.—Cooke, 45, Sankey St., Warrington. [X8139]

1912 8 h.p., 2-speed Rex-Jap and coachbuilt sidecar, splendid condition; £70; trial—68, Renshaw St., Liverpool. [X7589]

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ENFIELD, 2½ h.p., late 1911, perfect order; sacrifice through sickness; £25.—Rev. George, 276, Scotland Rd., Liverpool. [6825]

TRIUMPH, 1909, new back tyre, perfect condition; £27, a bargain.—Grimsshaw, Whalley Banks, Blackburn. Tel.: 3X. [X8079]

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ENFIELD, 2½ h.p., 2-cyl., spring forks, Whittle belt, splendid condition; offers.—Wilson, Houghton Green, Warrington. [6853]

NEW Hudson, 1912, 3½ h.p., Armstrong 3-speed, 1913 pattern, shop-soiled only; £55.—Headen, 125, R. stone St., Sheffield. [X8314]

1912 3½ h.p. Premier, Armstrong 3 speeds, new condition, including spares; £45.—Woolgrove, Heslington Rd., York. [X7582]

1912 Bradbury, N.S.U. gear, side entrance car, splendid condition, car and gear new; £50.—Walker, Church Lane, Liverpool. [X7967]

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as turned out by makers, and fully guaranteed. These are fitted with stand, carrier, number-plates, toolbags, tools, lamp, horn, etc.

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We can supply same machines fitted with Sturmey-Archer 3-speed Gear for £10 extra. Ideal sidecar machines.

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N.S.U., 3½ h.p., 1908, magneto, 30 in. wheels .....	£16 10
REX, 3½ h.p., 1908, spring forks, magneto .....	£15 10
VINDEC, 5 h.p., 1910, 2-speed .....	£35 0
REX, twin, 1910, Speed King .....	£20 0
REX DE LUXE, 5 h.p., twin, 1911, M.O.V., with £12 12s. Rex sidecar .....	£47 10
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TWIN REX, 5 h.p., 1909, magneto, complete with £6/6 sidecar .....	£20 0
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Exchanges entertained.	

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RUDGE, 3½ h.p., 1912, free engine	15%
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HUMBER, 1912, 2-speed, like new	£44
HUMBER, 1911, 2½ h.p., twin, fine lightweight	£30
ENFIELD, 1912, 2½ h.p., 2-speed twin	£38
BAT, 1912, 5 h.p., T.T. Spedometer and lamp, grey finish	£42
REX, 6 h.p., 1912, sideite, complete, a bargain	£52
ZENITH, 3½ h.p., 1912, shop soiled only	£48
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A.J.S., 3 h.p., twin, just been overhauled and re-enamelled	£24
F.N., 5/6 h.p., four-cylinder, exceptionally good order	£26
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DARRACQ CAR, 9 h.p., 3 speeds, lovely order, bargain	£25
F.N., 2½ h.p., 2 speeds, free engine, very good order	£22
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REX, 3½ h.p., 1911 model, cone clutch, good order	£28
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32 h.p. Mag. Matchless, thoroughly overhauled and enamelled, tyres as new; exchange for lightweight.—Briggs, Whiteby. [X8304]

MINERVA, 3½ h.p., m.o.i.v., Fital 2-p ed, B. and B. 1911 carburettor, good tyres; £13.—Hartley, 29, Common, Thornhill, Dewsbury. [X8184]

TRIUMPH, 1912, May, standard, horn, all spares, tools, excellent condition throughout; £37.—Chadwick, 2, Ellesmere Rd., Penberton. [X8123]

1910½ Triumph and Sidecar, engine just overhauled; £50; cycle only £27/10.—Rev. W. G. Paddy, Kirkby Vicarage, Stokesley, Yorks. [X1913]

SPLENDID 3½ h.p. Motor Cycle, very low, grand condition, accumulator ignition; £12; part exchange cycle.—26, Entwisle Rd., Rochdale. [6646]

SCOTT, 4 h.p., 1910, in excellent condition, engine, gear, just overhauled by makers, take sidecar anywhere; £35.—Eversham, Pocklington. [X8188]

7 h.p. Rex, 1911, B. and B., variable, and many accessories, condition as new; £40, or offer. Premier Garage, St. George's Rd., Bolton. [X8263]

3½ h.p. Triumph, 1911, T.T., first-class condition; £32 or offer.—Premier Garage, St. George's Rd., Bolton. [X8264]

2 h.p. Lightweight, Minerva engine, B. and B., Bosch mag.; very smart machine; £13, or offer.—121 and 123 St. George's Rd., Bolton. [X8265]

WHAT Offers for a 3½ h.p. Elswick-Precision, only done few hundred miles, unfractured, and perfect; any trial.—Wood, Bridge Rd., Chatburn. [X8124]

1912 B.S.A., 3½ h.p., F.E., speedometer, lamp, etc., 2½ tyres, perfect, little used; cost £65, accept £47.—Smith, Thornleigh, Greenmount, Bury. [X8242]

1911½ Free Engine Triumph, horn, lamp, Stewart speedometer, Duplop belt, beautiful condition; £38/10 cash.—Hoodless, 88, Castlegate, Malton. [X8150]

LATE 1909 P. and M., with Montgomery sidcar, lamp, generator, Cowey speedometer, £35; 1912 P. and M., almost new, £52.—H. Reese, Wetherby. [X8102]

SCOTT, 1912, water-cooled twin, 2-stroke, 2-speed, perfect, powerful, plating as new, Jones trip, all accessories; £57, cost £75.—29, Oak Lane, Bradford. [6808]

SCOTT, 1910, and sidcar, 2-speeds, new Kempshall and tube, automatic lubrication, lamp, horn, etc.; £34 lot; buying later model.—Senior, Milton St., Fleetwood. [X8124]

R.O.C. 4 h.p., 2-speed gear, perfect condition, enamel and plating almost new; a bargain, £27/10 cash; deferred or exchange terms arranged.—Hitchen's, Ltd., Morecambe. [6422]

REX-J.A.P., 1911, 8 h.p., 2-speed and F.E. brand new, never been on road; listed £73/10, our price £60 cash; no offers, swaps, or deferred.—Hitchen's, Ltd., Morecambe. [6424]

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1910 Lincoln Elk, 3½ h.p., mag., good order, £14/10; 1912 Premier, 2½ h.p., 3-speed Armstrong gear, 3 months old, beautiful condition, what offers?

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3½ h.p. M.M.C., new Palmer cords, new accumulator, 32 fine gear, £8; 3 h.p. Pafair, new engine, very low, all spares, fast and powerful, £12/10.—Hart, College St., Hull. [X8305]

1908-9 5-6 h.p. Twin Rex, 2-speed and free engine, mag., suit sidcar, new Palmer tyre on back, new belt, good order; cash £28.—1,575, The Motor Cycle Offices, Coventry. [X8141]

INDIAN, September, 1911, 1912 improvements, 7 h.p., 2-speed, excellent condition, ideal sidcar machine, just thoroughly overhauled; £50, or nearest.—W. E. Life, Southampton. [6774]

SCOTT, 1911, just overhauled at works, engine in splendid condition, new spare tube, lamp, horn, tools, fine sidcar machine; £42.—13, Ainslie St., Barrow-in-Furness. [6788]

B.S.A., 1912 (June), free, 2 speeds, Cowey, F.R.S. lamp, Dunlops, new back, 10 g.n. cane sidcar, accessories, perfect; £50, no offers.—Fletcher, 34, St. James's St., Burnley. [X8121]

N.S.U., 1911, 4 h.p., single-cyl., 2-speed, free engine, sidcar complete, excellent condition, new studded tyre, butt tube; rock bottom price £30 (thirty pounds)—Brook, Gibbet House, Halifax. [X8251]

MATCHLESS Twin, 6 h.p., excellent condition, take sidcar almost anywhere, new P. and H. 27½ lamp; bargain, £32/10; ride 50 miles to genuine purchaser.—Joe Whittier, 52, Market St., Wigan. [X8125]

HUMBER 1912, 3½ h.p., 2-speed, in perfect condition, guaranteed only done 1,000 miles, Brooks saddle, tyres very little worn; trial by appointment willingly; £42.—Manorlands, Oxenhepe, Yorkshire. [6650]

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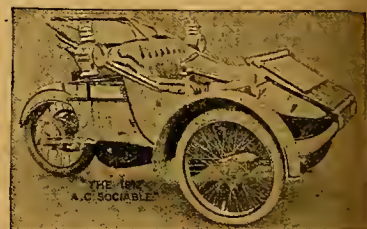
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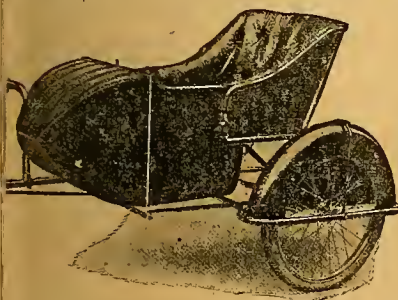
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## 1913 MODELS

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P. and M.'s

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HUMBER, 1912, 2-speed, handle starting	£44 0
NEW HUDSON Lightweight, 2½ h.p.	
Jan, like new, 3-speed gear, a bargain	£35 0
RUDGE, Standard 1912, 3½ h.p.	£33 0
NEW HUDSON, 3½ h.p., 1912, not done	
300 miles, 3 speeds	£46 10
HUMBER, 3½ h.p., 2-speed and free	
engine, take a sidecar	£39 0
TRIUMPH, 3½ h.p., late 1908, a beauty	£23 0
TRIUMPH, with 2 speeds and free	
engine	£23 0
TRIUMPH, clutch model, 1910½	£36 0
LINCOLN ELK, 3½ h.p., 2-speed and	
kick starter	£36 0
REX, 1908, 3½ h.p., h.b.c.	£16 0
P & M., complete with 9 guinea sidecar	£32 0
REX, 1910, 5-6 h.p., 2-speed and free	
engine complete with sidecar	£36 0
QUADRANT, 3½ h.p., Bosch, B. and B.	£18 0
P & M., 1909, 2-speed	£23 0
CHAMPION, 1911, like new	£26 0
F.N. Lightweight, 1911-12, shaft drive,	
shop-soiled, complete with £10 worth	
of spares	£30 0
F.N., 5-6 h.p., fitted with 2-speed gear	
and free engine at a cost of over £80,	
a bargain	£38 0
MINERVA, 3½ h.p., h.b.c., magneto igni-	
tion, spring forks	£15 0
HUMBER, 3½ h.p., and forecar, P. & M.	
2-speed	£18 0
50/- down and 5/- per week secures	
the following:	
REX, 2½ h.p., B. and B.	£3 0
N.S.U., 3½ h.p.	£16 0
REX and Forecar, complete, with free	
engine, h.b.c.	£14 0
8-guinea Sidecar, second-hand	£4 4



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### MOTOR BICYCLES FOR SALE.

TRIUMPH, 1911, 3½ h.p., free engine, fitted with 1912 forks, very little used, and equal to new; £442.—The Premier Motor Co. Ltd., Aston Rd., Birmingham. [0155]

TRIUMPH, 1911, 3½ h.p., T.T. roadster, fast machine, in good condition; £50.—The Premier Motor Co. Ltd., Aston Rd., Birmingham. [0156]

MATCHLESS-J.A.P., 1911, 3½ h.p., free engine, excellent condition; £33.—The Premier Motor Co. Ltd., Aston Rd., Birmingham. [0157]

TRIUMPH Motor Cycles.—Latest 1912 free engine and T.T. roadster models in stock, buy your machine from the official agents for Birmingham and district.—The Premier Motor Co. Ltd., Aston Rd., Birmingham. [0158]

VELOCE 2½ h.p. Motor Cycles, 2-speed, automatic lubrication; now in stock for immediate delivery; price £48 gns.—Sole Birmingham agent, Frank Hall, 64, Parade, Birmingham. [X8316]

1912 Zenith-Gradua, 6 h.p., with T.T. and touring bars, X'lll post seat, and all accessories, run 1500 miles, fastest 6 in the county, special engine; price £55.—B. Rhodes, Moortown, Lincoln. [6691]

BAT-J.A.P., 6-7 h.p. J.A.P. engine, Bosch mag., B. and B. carburettor, free engine, 2 speeds, Continental tyres, £32; also handsome coach-built sidecar, £6/10.—Brown's, 12, Bull Ring, Birmingham. [X8226]

LADY'S Motor Cycle, 2½ h.p., Bosch mag., B. and B. carburettor, Armstrong 3-speed gear and free engine, spring forks, only little used; bargain, £28/10.—Brown's, 12, Bull Ring, Birmingham. [X8227]

QUADRANT Motor Cycle, 3½ h.p., Bosch mag., spring forks, Clincher tyres, first-class condition; bargain, £17/10.—12, Bull Ring, Birmingham. [X8228]

MATCHLESS Motor Cycle, 1910 model, J.A.P. 2½ h.p. engine, mag., spring forks, equal new; bargain, £22.—Brown's, 12, Bull Ring, Birmingham. [X8229]

ARIEL, late 1911 model, 3½ h.p., var. gear, decompressor, mag., Lucas lamp, Premier sidecar; sell turnout £32.—Brown's, 12, Bull Ring, Birmingham. [X8230]

ROC Motor Cycle, 4 h.p., mag., free engine, 2-speed gear, together with sidecar; sell turnout £24.—Brown's, 12, Bull Ring, Birmingham. [X8231]

TWIN Humber, 2½ h.p., Armstrong 3-speed gear, 2½ h.p. rear tyre, double footrests, belt guard, spare belt, lamp, horn, and spares, splendid condition; near offer £40.—Gedrey Smith, Dunelm, Northumberland Rd., Coventry. [0141]

LINCOLN Elk, 1912, 3 h.p., new July, complete, lamp and horn, tyres unspun, perfect in every detail; written guarantee given; £27/10; illness cause of disposal.—Smith, Lincoln St., Basford, Nottingham. [X8036]

DOUGLAS, 2½ h.p., in excellent running order, overhauled by the makers, engine practically new, with various 1912 refinements; owner buying 1913 model; may be seen by appointment—Box 1,410, The Motor Cycle Offices, Coventry. [0165]

ROVER, 3½ h.p., 1912, Sturmer-Archer 3-speed gear, delivered June last, ridden 1,400 miles; listed at £59, will accept £49/10; would take a sidecar anywhere; no offers or exchanges entertained; may be seen by appointment.—P. W. Johnson, 22, St. George's Rd., Coventry. [0163]

32 2½ h.p. 2-speed Free Engine 1909 Humber, handle starting, new Dunlop studded tyre and bell, spare tube, valve, 1/2 white belt, etc., enamel and plating as new, in splendid condition, genuine bargain, £26; sidecar, with apion and spare studded tyre, £3.—Motorist, Buncailow, Stechford. [X8320]

2ND-HAND 2-speed Free Engine Motor Cycle for sale, Triumph, 1909, splendid condition, re-enamelled, re-plated, 1912 cylinder, piston, and fork spring, all wearing parts recently renewed, new tyres, lamp, horn, tools, spares, Cowey speedometer; £35.—Dunlop Rubber Co., Salford St., Aston, Birmingham. [X8051]

BARGAIN—Triumph, 1907 model, with 1911 cyl. and piston, 1912 improvements, new belt, Dunlop tyres, Triumph lamp and generator, Jones speedometer, T.T. and touring handle-bars, spurs and tools, in splendid running order; take £27/10, or near offer.—Box No 1,435, The Motor Cycle Offices, Coventry. [0167]

PLASTOW, Grimsby, has the following machines on offer: 1912 Douglas, model G, offers; 1911 Douglas 2-speed, £28/10; 1911 Douglas 2-speed, footboards, handle starting, £32/10; 1911 Premier lightweight, new condition, £21; 1910 F.E. Triumph, £32/10; 2½ h.p. twin Enfield, splendid order, £21. [X8301]

HUMBER Motor Cycles, 1911, shop-soiled models, greatly reduced, 3½ h.p., 2-speed, £45; 2½ h.p. twin T.T. or touring, £35; 2½ h.p. lightweight, £30; ditto with 3-speed, £35; lady's free engine model, £37/10; all these are new 1912 machines and cannot be repeated; cash only; no exchanges.—Humber Depot, 78, New St., Birmingham. [6892]

MOTOR Cycles.—1911 Humber, 3½ h.p., 2-speed, £32; 1910 ditto, £24; 1911 2½ h.p. 3 speed, £32; 1911 2½ h.p. lightweight, £22; 1911 Zenith-Gradua, 3½ h.p., £23; 1910 Enfield lightweight, £15; 1910 Humber, 3½ h.p., chain drive, splendid machine, £18; all must be cleared.—Humber Depot, 78, New St., Birmingham. [6893]

### Collier's Sidecars,

From £5 5s. each.

### 1912 BRADBURY'S

LIBERAL EXCHANGES.

CASH, EXCHANGE, OR EASY PAYMENTS.

N.S.U., Twin, 2-speed, magneto, and sidecar	£26 10
MINERVA, 2½ h.p., 2-speed, 2½ in. tyres	£16 10
REX, 1910 Twin, special finish, 2-speed, water-cooled, 2 h.p., little used, cheap at £70.	£29 10
SCOTT, special bargain	£33 0
REX, 1909, 3½ h.p., Tourist, specially good	£22 10
REX SIDETTE, 2 h.p., little used, cheap at £70.	£59 10
MINERVA, 4½ h.p., 1½ in. spring forks	£16 10
OLYMPIC, 3 h.p., vertical engine	£7 10
MOTO-REVE, 2 h.p., single cylinder, very fine condition	£19 10
WHITE & POPPE, 3½ h.p., spring forks	£16 10
REX, 5½ h.p., Twin, free engine, good order	£18 10
J.A.P., 2½ h.p., Lightweight, spring forks, H.B. control	£9 10
REX, 2½ h.p. magneto Lightweight, H.B. control, very handy machine	£16 10

### Collier's Motories,

Westgate, Halifax, England.

ROVER, 1911, 3½ h.p., fine order	£39 10
N.S.U., 3½ h.p., 2-speed and magneto	£21 10
TRIUMPH, 1910, 3½ h.p., magneto and free engine	£35 10
REX, 1912, 4 h.p. Tourist, 84½ x 95, new	£46 0
REX DE LUXE, 1912, 4 h.p., 2-speed, new	£56 0
BRADBURY, 1912, Millennium 2-speed in rear wheel, 1912 F.S.L. Case Sidecar, smart lot	£49 10
REX, 7 h.p., Twin, spring forks, very hot	£35 10
ANTOINE, 5 h.p., Twin, magneto, spring forks	£23 10
REX DE LUXE, 1911½, Twin, 2-speed, new, 1912 frame and control	£53 10
REX DE LUXE, 1911, 3½ h.p., 2-speed and new sidecar, very smart lot, with maker's guarantee	49 gns.
IVY-PRECISION, 3½ h.p., Druid forks, condition extra good	£32 10
REX, 1911, 3½ h.p., Tourist, very reliable	£29 10
REX DE LUXE, 5 h.p., 2-speed Twin, and sidecar	£35 0

Offers wanted.

### 1912 REX EXCHANGES

SPECIAL QUOTATIONS. OFFERS WANTED.

### REX-J.A.P., all 1912 Models

LISTS FREE ON APPLICATION.



# Evans

## SPECIAL

### TEMPTING BARGAINS

The whole of stock to be cleared considerably under List Price to make room for the 1913 Models. Now is the time to get a new machine at the right price, and have a season's riding for practically no cost. Let me have your cash offers.

### New Shop-soiled Models.

#### HUMBERS.

3½ h.p., 2-speed, £45; 2 h.p., 3-speed, £37 10s.; 2½ h.p., twin, £35; Lady's Clutch Model, £37 10s.; 2 h.p., 3-speed, £35.

#### ENFIELD.

6 h.p. and Sidecar Combination, £75.

#### CLYNO.

6 h.p. and Sidecar, £72.

#### TRIUMPH.

Clutch Model, £55, with spares.

#### ZENITH.

3½ h.p. Model, 48 gns.

#### BRADBURY'S.

Standard, £38; 2-speed, £45; Chain Drive, 2-speed, £48 10s.

#### JAMES.

4 h.p., 3-speed, Belt, £48; 1913, Chain Drive, 3-speed, £48.

#### DOUGLAS.

Standard, £36.

#### A.J.S.

2½ h.p., 2-speed, £42.

#### NEW HUDSONS.

2½ h.p., 3-speed, £40; 3½ h.p., 3-speed, £50.

#### RUDGE-MULTI.

Offer Wanted.

### Montgomery and Canoelet Sidecars.

Also Lamps, Speedometers, Spares, etc., considerably reduced.

### Special Clearance List.

1912 HUMBER and Montgomery sidecar	£46
1913 JAMES, 3-speed, chain	£48
1912 TRIUMPH, clutch model	£45
1912 HUMBER, 3½ h.p., 2-speed	£40
1912 BRADBURY, chain drive, new	£42
1912 NEW HUDSON, 2½ h.p., 3-speed	£38
1912 HUMBER, 2½ h.p., twin, very fast	£32
1911 CLYNO, 6 h.p., 2-speed	£42
1912 BRADBURY, standard, new	£38
1911 INDIAN, 5 h.p., clutch model	£32
1911 HUMBER and sidecar	£35
1911 BRADBURY, free engine	£28
1911 RUDGE, T.T. model	£23
1911 HUMBER, lightweight	£22
1911 HUMBER, 3½ h.p., 2-speed	£32
1911 BRADBURY, clutch model	£35
1911 ARIEL, variable gear	£32
1911 ENFIELD, 2½ h.p., chain drive	£28
1911 A.J.S., 2½ h.p., belt drive	£26
1912 CHATER-LEA, 4 h.p. Peugeot	£25
1910 ENFIELD, 2½ h.p., lightweight	£18
1911 ZENITH-GRADUA	£32
1911 DOUGLAS, 2-speed	£30
1911 HUMBER, 2½ h.p., 3-speed	£32
1911 HUMBER, 3½ h.p., chain drive	£18
1910 HUMBER, 3½ h.p., 2-speed	£24

### P. J. EVANS,

358 & 360, STRATFORD RD., SPARKHILL, BIRMINGHAM.

Telephone: 13 Victoria.

### MOTOR BICYCLES FOR SALE.

#### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1909 Triumph, standard, in good order and condition; £24.—37, Searle St., Cambridge. [X8158]

PREMIER, 3½ h.p., clutch model, 1911, new last July, absolutely as new; £40.—L. Cole, High Fen Farm, Lakenheath, Suffolk. [6654]

L.M.C., 1912, 3½ h.p., var. gear, running since June 1st; £35; tyres as new, all complete.—Apply, M. Butcher, Great Yarmouth. [X8016]

1912 Rudge, T.T. model, Kempshall back, recently overhauled by makers, capital condition; £32.—Brockbank, Tottrees, Fakenham, Norfolk. [6817]

ZENITH, 1911, 6 h.p., drip feed, lamp, horn, etc., everything splendid condition, about 2,000 miles only; £48/15, lowest.—Parkinson, builder, Chatteris. [6635]

MINERVA, 3½ h.p., mag., B. and B., XI—all seat, low, furnished copper torpedo tank, 26in. wheels, Dunlop, Michelin, and Whittle; £18, or offers.—Steeple Cottage, Garboldisham. [6870]

ROVER, 1912, 3½ h.p., brand new, free engine and variable pulley, beautiful machine, never used; cost £56, accept £47/10; good modern lightweight part payment.—G. 96, Crown St., Ipswich. [X8312]

TRIUMPH, T.T. Racer, with roadster handle-bars, and racing ditto, very fast machine, in fine condition; £46, complete with £5 Lucas lamp and Cowey speed indicator.—S. Savage, c/o Crowley, St. Mary's, Bedford. [X8055]

#### SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

1912 T.T. Rudge, 3 months old, in new condition; £43, offers.—Wale, Leominster. [X8170]

TRIUMPH, 1911, clutch, excellent condition, full kit and spares; £58, or offers.—Marshall, Belle Vue House, Malvern. [6802]

P. and M., 1909, good condition, new chain, new inner tubes, lamp, exhaust whistle, spares; £29.—27, Walter Rd., Swansea. [X8115]

F.N., 1912 model, 2½ h.p., 2-speed, Bosch mag., A1 condition, run about 2,000 miles, complete; £35.—Maeon, Tutshill, Chepstow. [X8245]

TRIUMPH, 1911, standard roadster, in good condition throughout; for quick sale £30.—G.H.O. 84, Etnam St., Leominster. [X8182]

1912 F.E. Rudge, excellent condition, carefully used; any trial or expert examination; genuine bargain, £37.—Drew, Battenball, Worcester. [6823]

CLEMENT Lightweight, new Michelin, all accessories; also 1½ h.p. 3-speed Wolf; both good condition; cheap.—Stradling, Lark Hill, Kidderminster. [6770]

TRIUMPH, 1912, lamp, horn, tools, spares; £39; ad. justable pulley, N.S.U. to fit. £6/10; art case side-car, £3/10; all excellent condition; no offers.—Sweet, Boncath, Pen. [X8000]

WHAT Offers for late 1911 3½ h.p. 3-speed New Hudson, 3½ h.p. 2-speed Humber; 3½ h.p. Quadrant, £14; 6 h.p. wheel steering triar, £16; both in excellent condition.—Prod. Morgan, Talgarth. [X8116]

#### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

MATCHLESS, new No. 7, passenger model, 8 h.p.; 62 gns.—Fremma, 151, Barton St., Gloucester. [6876]

TRIUMPH, 1912, F.E., Kempshall, only done 2,500, new condition; £45.—Paxman, Tewkesbury. [6806]

1913 Douglas, all models.—Enquire early delivery by ordering now from Gibb Motors, Gloucester. [5308]

DOUGLAS, late 1910, Whittle belt; £22, bargain; bought car.—77, St. Thomas St., Portsmouth. [6716]

DOUGLAS, 1911, fixed engine, just overhauled, bought new pattern; £25.—Herapath, 12, Brunswick Sq., Bristol. [X8154]

SCOTT, 1911, lamp, horn, speedometer, spare tube, overalls; £42.—Lieut. Finch, H.M.S. Vernon, Portsmouth. [6715]

ZENITH, 6 h.p., late 1911, low built, boat-shape side-car, accessories, and spares; £48.—J. J. Edey, Farnham. [X7590]

1911 3½ h.p. Bradbury, good condition, Garner, back tyre nearly new, spares, accessories; £28.—Hunt, S. Ascot. [6880]

OXFORD.—Eyles and Eyles, 113, St. Aldate's, have the famous G.W.R. cyclecars; immediate delivery; trial runs.

OXFORD.—Eyles and Eyles.—1912 Scotts, B.S.A., Premiers, and Bats, 2nd-hand models; Zenith, Rudge, Premier, Scott, Kerry, Enfield, and N.S.U. machines taken in part payment. [X8300]

ZENITH, 1912, 6 h.p., lamp, horn, tools, excellent condition; bargain, £55.—Heybourn, Macclesfield. [6824]

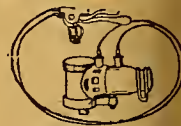
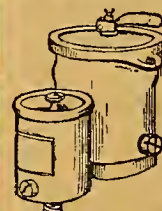
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# TAYLORS'

## STOCK TAKING CLEAR UP.

Great opportunity for Motor Cyclists to secure hundreds of useful articles of fitment and equipment.

All goods guaranteed in perfect condition, only showroom window soiled, and in some cases slightly scratched in railway transit.



#### CARBURETTORS.

1 only Lukin, soiled showroom model. Usual price, 50/-; sale price, 42/-.

2 only B. and B., 1912, used once for trials. Usual price, 30/-; sale price, 22/6.



25 TOP TUBE SPARE PETROL TANKS. Holds one quart. Enamel slightly scratched. Usual price, 6/-; sale price, 4/3.

16 Ditto.—Half-gallon size. Usual price, 8/-; sale price, 6/-.



10 Electary Belt and Tube Cases for tin, 4in. or 5in. belt, soiled.—State size required. Usual price, 9/6; sale price, 6/11.



6 TAYLOR'S STORE TOOL BAGS, soiled.—Fit between carrier and back mudguard. Usual price, 7/6; sale price, 4/11.

12 LYCETT'S PANNIER TOOLBAGS.—With lock and key, soiled. Usual price, 8/6; sale price, 6/11.

#### TYRES.

1 only Continental Rubber-studded Cover, 28 x 2½, soiled only. Usual price, 40/-; sale price, 23/6.

20 Taylor's Fearnought Extra Heavy Rubber-studded Covers, extra strong beads and treads, 26 x 2½. Usual price, 33/9; sale price, 26/6.

15 Ditto, 26 x 2½. Usual price, 36/-; sale price, 23/6.

50 Best Quality Guaranteed Heavy Red Rubber Inner Tubes, 26 x 2½, 5/9.

26 x 2½, 5/9.

Butt-ended Tubes, various makes, soiled, but perfect.

26 x 2. Usual price, 11/-; sale price, 8/-.

26 x 2½. Usual price, 12/6; sale price, 9/6.

26 x 2½. Usual price, 13/6; sale price, 9/9.

Quantity of Second-hand Covers from 3/6.

#### SPEED INDICATORS

1 only Cowey, 1912, run 50 miles, guaranteed perfect, £3 12 6.

1 only Cowey, good order, £2 2.

TELL US YOUR WANTS, WE CAN SUPPLY THEM AT BRITAIN'S LOWEST BARGAIN PRICES.

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21a, Store Street, Tottenham Court Road, London, W.1



## MOTOR BICYCLES FOR SALE.

MX 5-6h.p. Twin, B. and R., tyres good, engine lately rebushed, excellent order; £10, or offers.—[6718]  
—Cirencester.

EDGE Multi, latest improved model, in stock; trial runs; exchanges entertained; trade supplied.—[6718]  
—Cirencester, Bucks.

EDGE, 1912, free engine model, perfect condition, tyres as new, cost £55, bargain, £39; Rex, 3½h.p., ignition, 1912 B. and R. carburettor, good condition, £10.—Barnes, Colnbrook, Bucks. [X8046]

TRIUMPH, 3½h.p., 1908 new piston, cylinder, pulley, and back cover; owner going abroad; what offers?—[X7961]  
—Odell, Newport Pagnell.

RAND New unregistered free engine B.S.A., unable to take delivery; cost £56/10, accept £48/10.—[6699]  
—Lush, Clifton Vale, Bristol.

DOUGLAS, 1912, model H, practically new, splendid running order; price £38, or near offer.—Roster, [X6291]  
—14, Kingswood, Bristol.

DOUGLAS, late 1911, clutch, 2-speed, not ridden 1,000 miles, everything perfect, spares, 35 gas. cost.—Huddon, High Wycombe. [X8098]

h.p. Chater-Minerva, h.b.c., B. and B., L.M.C. var. pulley, and P.E. 2 new accumulators; £16, dealer.—Z., All Saint's Cottage, Alton. [X8160]

HAMBER, 1910, 3½h.p., 2 speeds, handle starting, excellent condition throughout; £30, or near offer.—Hammer, 8, Melrose Place, Clifton. [X8257]

ENFIELD, 1910, 2½h.p. twin, splendid condition; sell £22/10, or exchange 3½h.p. good make, cash adjustment.—Balls, High St., Lymington, Hants. [6695]

12 2½h.p. Humber Twin Lightweight, done 400 miles, unscratched, complete with horn and tools; no offers.—Avenell, 68, Market St., Maidenhead. [X8091]

TRIUMPH, 1912, free engine, almost unscratched, very little and carefully used, accessories, spares; £10.—Burrett, fruiterers, High St., Cheltenham. [X8262]

MOTOSACOCHE, 2½h.p., 1911½, free, splendid condition throughout, lamp, horn, tools, spares complete; sell or exchange higher power.—Sigs, Wolreton, [6725]

12 Stanton, 3½h.p., Bosch waterproof mag., adjustable pulley, B. and B. carburettor, tyres, belt, as new; £22.—Weston, West View, Bradwell, [6764]

h.p. Moto-Reve, 1909, fitted new carburettor, mag., Druids, overhauled, and in splendid condition; or exchange pony and governess car.—Wright, tailor, [6679]

EDGE, 3½h.p., free engine, new in July, hardly scratched, lamp, horn, and all accessories complete, 250 mile; £42.—R. Pugh, Densboro Rd., High Wycombe, Bucks. [6643]

11 Standard Triumph, exceptionally fine condition throughout, Dunlop and Palmer tyres, lamp, spares, run 1,600 miles; price £34.—Hart and Bescombe. [X7433]

h.p. Triumph, 1911, free engine, Jones speedometer, lamp, horn, done only 1,500 miles; price £38, no offers.—Lawrence, Brownhill, Stroud, Glos. [X8213]

2 3½h.p. Peugeot, 2 speeds, free engine, Druid spring forks, B. and B. adjustable jet, Bosch proof mag., handle starting; any expert examining absolute bargain, £30.—Coy. Sergt. Maj. Adshead, on Gymnasium, Blackdown, Hants. [6834]

## SECTION VIII.

Bedford, Essex, Middlesex, Surrey, Kent, and Sussex.

LOR'S.—1912 6h.p. Clyno and sidecar, 2-speed, run 900 miles, unscratched; £55.

LOR'S.—1912 6h.p. Clyno, soiled only; £59.

LOR'S.—1912 2½h.p. A.J.S., 2-speed; £42/10.

LOR'S.—1912 6h.p. A.C. de Luxe, latest model machine, just delivered; £99.

LOR'S.—1912 3½h.p. clutch Bradbury, soiled only; £46/10.

LOR'S.—1912 3½h.p. T.T. Rudge, perfect; £35.

LOR'S.—1911 3½h.p. P. and M. s.c., gears, fine condition; £45.

LOR'S.—1911 3½h.p. Bradbury, Albion clutch, and hand; £27.

LOR'S.—1911 3½h.p. Zenith and sidecar; £35.

LOR'S.—1911 2½h.p. Enfield, chain drive, just varnished; £26/10.

LOR'S.—Herald sidecar, soiled only; £5/5.

Store St., W.C. [5868]

12 Kerry-Abingdon, late 1910, free engine, mag., Rich. Lysol; £22.—Hooker, Cuckfield, Sussex. [6693]

12 Kerry-Abingdon, late 1910, free engine, mag., for 2-speed twin or sell £22.—Hooker, Cuckfield, Sussex. [6694]



## Take care!

You should use the same care in deciding WHERE to buy, as you do when choosing WHAT to buy. It is imperative that the Agent who sells you a Motor Cycle should have a specialised knowledge of its construction—otherwise you cannot be assured of that efficient "Service" which is so necessary :

## You get service—

if you buy your machine from us—immediately you become a purchaser of our staff and works are at your service. :

Any dealer can sell you a machine, but has he the works, equipment and staff to always effect any replacements or adjustments you require? :

For years we have specialised in Motor Cycles, and it is our interest that every client's machine should be 100 per cent. efficient. We always carry a complete stock of spare parts for machines for which we are Sole Agents, and our clients are thereby saved any irritating delays.

We have now in stock the following 1912 models: "Triumph" (Free Engine, T.T. Roadster, and THREE SPEED); Rex-J.A.P. (6h.p. de Luxe, "The ideal Sidecar machine"); Scott two-stroke; 6 h.p. Zenith Gradua; Premier (3½ h.p. 3-speed); Hazlewood-J.A.P. (2½ h.p. 3-speed); Rex (6 h.p. 2-speed); N.S.U. (3½ h.p. 2-speed).

\*\*\*\*\*

## Real Bargains—

We have a number of new slightly soiled 1912 models to offer at special prices—also a good stock of Second-Hands—Write for list.

CASH, EXCHANGES, or EASY PAYMENTS. :

The Premier Motor Co., Ltd., ASTON ROAD, BIRMINGHAM.

Telegrams: "Primus, Birmingham." Phone: Central 4310.

## MOTOR BICYCLES FOR SALE.

FREE Engine Rudge, 1912, never been ridden; will take £49 cash.—Rice Bros., Lewes. [6656]

6h.p. Zenith, 1912, excellent condition; £56, or offer.—Kark, 40, Adelaide Rd., N.W. [6792]

1912 Centaur, 2½h.p., new; best offer accepted to clear.—Phillips, Hill Rise, Richmond. [6670]

TWIN Rex, new, Hellesen coil, h.b.c., good running order; £14.—13, Maple Rd., Surbiton. [X8049]

1912 2½h.p. Singer, nearly new; £50, complete.—Lockwood, 19a, Brockshy St., Islington. [6766]

1912 Premier, 2½h.p., only run 200, good as new; bargain.—Phillips, Hill Rise, Richmond. [6669]

3½h.p. N.S.U., 1911 mag., new last July; will accept £29.—Clandebore, Acacia Rd., Acton. [6675]

HUMBER, 2½h.p., late 1911, in good condition; sacrifice, £24.—Owen, Lancing, Sussex. [6779]

3½h.p. Fleet, perfect order, good tyres, low built; £12.—3, Heathview Rd., Thornton Heath. [6833]

TRIUMPH, 1909, fine condition, tyres good, accessories; £24.—39, Fairview Rd., Stanford Hill N. [6840]

6h.p. Rex de Luxe, 2-speed and free engine, in splendid condition; £23.—19, Cheriton Sq., Balham. [6863]

INDIAN, 4h.p., June, 1912, 2-speed, clutch; £45 net; after 7.—Cartwright, 1a, Berners St., W. [6804]

3h.p. Singer, mag., new Dunlop belt, 1911 B.B., perfect condition; £10, offers.—Warner, Irchester. [6791]

DOUGLAS, model G, purchased August, condition as new; price £36.—5, Quadrant, Weybridge, Surrey. [6805]

1908 3½h.p. Rex, Bosch mag., Amac; trial; £10, offers.—Townsend, Manor Rd., Bishop's Stortford. [6714]

1912 Indian, free engine, good condition, Peter-Unions, new; £47.—Kirkella, Harpenden, Herts. [6681]

V.S., 5-6h.p., 2 speeds, free engine, late 1910, all like new; £35.—Martin, Charles St., Euston, London. [X8048]

RUDGE, 1912; free engine, lamp, horn, generator, run 500 miles; £42.—239, Broadway, Cuckfield. [6866]

4h.p. Bat. B. and B., h.b.c., perfect running order; sacrifice £7/10.—Speechley, 45, Church Rd., Acton. [6875]

HUMBER Lightweight, 2½h.p., nearly new, all accessories; £25, bargain.—42, Church Rd., Hendon. [X8019]

BRADBURY, 1910, Jones speedometer, only used Sundays; £30.—Chemist, 172, Westbourne Grove, W. [6676]

5½h.p. Humber, very light and low, good mechanical condition; £17.—Rolt, West Wickham, Kent. [6762]

EAGLES.—Bradbury, 1910½, N.S.U., 2-speed gear, free engine, exceptional condition; £34; all accessories.

EAGLES.—N.S.U., 3½h.p., 1908, mag., spring forks, h.b.c., adjustable pulley, little used; £17.

EAGLES.—Motosacoché, 1910, Bosch, free engine, Druid forks, Whittle belt; £15.

EAGLES.—N.S.U., 3½h.p., Model de Luxe, late 1911 model, latest improvements, spring frame, N.S.U. 2-speeds, free engine; £34/10.

EAGLES.—Lincoln Elk, 3h.p., 1911, Bosch mag., Druids, B. and B. carburettor, all accessories; £18.

EAGLES.—N.S.U., 3h.p., single-cyl., new last June, mag., 1911 spring forks, new condition; £21.

EAGLES.—N.S.U., 4h.p. twin, 1910, Bosch, m.o. valves 1911 spring forks, N.S.U. 2 speeds, free engine; £28/10.

EAGLES.—N.S.U., 3½h.p., popular model, new last June, as new, mag., 1911 spring forks, adjustable pulley, new Dunlop belt, Palmer cord tyre; £24/10.

EAGLES.—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engines, from £5/15, for Triumph £6/15, for Bradbury £7; trade supplied.

EAGLES.—We have a few brand new 3½h.p. 1911 N.S.U. 55x88 Model de Luxe, just delivered, fine machines for sidecar work, Bosch mag., 1912 spring forks and other improvements, finished in latest style, complete with stand, carrier, tool case, full set of tools.

£37, N.S.U. 2-speed gear £5/15 extra; Milford Herald sidecar with No. 1 torpedo body, £7/15 extra; deferred payments, exchanges entertained.

EAGLES and Co., High St., Acton.—N.S.U. West London District Agency. Liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X8249]

TRIUMPH, 1912, free engine, lamp, horn, tools, first-class condition; £45/10.—127, Harbord St., Fulham. [6847]

1912 Scott, X'fall saddle; cost £70, accept £55.—Frankenstein, Antrim, Teagmouth Rd., Broomfield. [6688]

3h.p. F.N., engine rebored, new piston, adjustable pulley, belt; £9.—Stone's, 337, High Rd., Weybridge. [6775]

3h.p. N.S.U., 1908, mag., adjustable spring forks, spare tyre; £12/10.—Sayers, Shamley Green, Guildford. [6844]



## MOTOR BICYCLES FOR SALE.

WANDSWORTH.—Clyno, latest 1911, 6h.p. twin, m.o.v., mag., 2 speeds, nice order; £32/10.—Below.

WANDSWORTH.—F.N., latest 1912, 6h.p., 4-cyl., mag., done 700 miles, as new; £45/10.—Below.

WANDSWORTH.—V.S., latest 1910, 7-9h.p. twin, mag., 2 speeds, cream finish, new; £38/10.—Below.

WANDSWORTH.—Rex, latest 1911, T.T., 6-7h.p. twin, m.o.v., mag., Druids, like new; £32/10.—Below.

WANDSWORTH.—Rex, late 5-6h.p. twin de luxe, mag., 2 speeds, fine order; sacrifice £28/10.—Below.

WANDSWORTH.—Moto-Revo, latest 1911 model, 2½ h.p. twin, mag., Druids, as new; £18/18.—Below.

WANDSWORTH.—N.S.U., 1909 model, 4½-h.p. twin, mag., B. and B., extra fast, fine order; £18/10.—Below.

WANDSWORTH.—Roc, 1909, 4h.p., m.o.v., mag., Druids, clutch, handle starting, extra condition; £19/10.—Below.

WANDSWORTH.—Fairly lightweight, latest, 2½-h.p. twin, Bosch mag., Druids, just like new; £13/10.—Below.

WANDSWORTH.—Rex, 3½h.p., vertical, Palmers, cheap, £6/15.—exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth Station. [X8083]

RUDGE, 1912, brand new, in crate, taken for debt; accept £40.—Wright, Silverdale, Sunnyside Rd., Hford, E. [X8163]

10 Bat-Jap, 4h.p., automatic lubricator, Whittle, mag. in tank, guaranteed perfect; £25.—Millard, Belvedere. [X8209]

RUDGE, June, 1912, mirror, lamp, Cowey, watch, Garner, as new; offers.—Smith, 7, Camden Rd., Wanstead. [6828]

ZENITHS, 1913 models, early delivery guaranteed.—South Wimbledon Motor Co., 1, York Rd., Wimbledon. [6713]

3½h.p. Motor Cycle, Bosch, B. and B., h.b.c., Whittle, 2 belt, good tyres; £14.—114, Markhouse Rd., Walthamstow. [6822]

DOUGLAS, 2½h.p., excellent condition, mag., lamp, horn, etc.; £20, or near offer.—T., 303, Friern Rd., Dulwich. [6757]

INDIAN, June, 1910, 5h.p., climb any hill, good condition; £30.—Ancell, 27, Albemarle Gardens, New Malden, Surrey. [6826]

V.S., 5h.p. twin, 1909, 2-speed and free, Bosch, Sens-a-ray, good order; £22.—Woodward, Crosbie, Bromley, Kent. [6732]

1912 Humber, 2½h.p. twin, new July, ridden only 300 miles; any trial; £35.—E. Spicer, 136, High St., Deal. [6733]

1911 Enfield, 2-speed, free engine, guaranteed perfect; £30.—Write, Peers, Oxford House School, South Croydon. [6872]

1912 Douglas, Model G, lamp and horn, only used for 3 months, in perfect running order; £38.—Mills, Hawkhill, Esher. [6697]

WHITE and Poppe, 3½h.p., 1912 B. and B., new piston rings, perfect; £12, or near offer.—Bennett, Ninfeld, Sussex. [6855]

3½h.p. Motor Cycle, splendid condition; sacrifice £25/15.—Apply, letter only, c/o Mr. J. Ede, Jupiter Place, Shalford. [6842]

1912 Rudge Multi, received in Aug., not done 300, complete lamp and all tools; £55.—Marriott, Portland Rd., Worthing. [X8075]

B.S.A., free engine, March, 1912, splendid condition; £38 for quick sale; appointment.—55, Earlham Grove, Forest Gate. [6801]

3½h.p. Bradbury, 1911½ model, everything new condition, private misfortune; £35/10.—Cullen, Burton Villa, Cranleigh. [6724]

TRIUMPH, 1911, free engine, horn, lamp and generator; £32, no offers.—Moss, St. George's Mews, Primrose Hill. [6785]

3½h.p. Rex, Bosch, B.B., nearly new tyres, 2 belts, P.H. lamp; trial in sidcar; £17.—Hole, 129, Park Lane, Carshalton. [X8086]

TRIUMPH, 1911, lamp, speedometer, good tyres, little used, in excellent condition; £38.—Central Garage, Bromley, Kent. [6663]

2½h.p. Minerva, very low, new tyres, B.B., footboards, fast and reliable; £12/10.—H.S., 33, St. Stephen's Rd., Bow, E. [6767]

1912 T.T. Triumph, open to best offer, machine guaranteed.—Phone: 1525 P.O., Kingston, 37, Richmond Rd., Kingston. [6883]

2½h.p. De Dion, Amac h.b. carburetter, spring fork and seat pillar; seen any time; £10.—36, Stroud Green Rd., Finsbury Park. [6784]

RUDGE, 1912, 3½h.p., free engine; cost £55 three weeks ago; must sell; best offer secures.—Donald, 39, Cromwell Rd., Colchester. [6673]

2½h.p. New Hudson, 1912, horn, lamp; £40, or £4 nearest cash offer; used week-ends.—E.R.H., 61, Haverstock Hill, Hampstead. [5734]

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Before the T.T. Race we had the highest opinions of the future of the Scott motor cycle, and we advertised in these columns before the race that we placed very high the chances of the Scott. Moreover, we backed our fancy by placing before the T.T. Race an abnormally large contract for 1913 Scotts. Our anticipation was justified, now and all next season Scotts will be in enormous demand, and we shall be one of the few firms who can supply. Big as our contract is, we expect it to be much below the possibilities of our sales, so we recommend our customers to order early.

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Remember the wonderful record of the Scott in T.T. Races, showing power and speed, and in the Six Days' Trials, showing reliability.

Exchanges, or any other special terms, can be arranged either by interview or correspondence.

# COLMORE,

35, Colmore Row, Birmingham.

18, Renshaw St., Liverpool.

261, Deansgate, Manchester.

62, High St., Leicester.

45, John Bright St., Birmingham.

## MOTOR BICYCLES FOR SALE

HUMBER, 1911, 3½h.p., 2-speed, handle etc. excellent condition, lamp, horn, spares; £32 Barcombe Av., Streatham Hill.

TRIUMPH, 1912, F.E., quite new, with accessories for debt; what offers for cash.—Green, side, Golder's Green Rd., N.W. [6]

RUDGE, 1912, as new, with accessories; £38.—1 Wayside, Golder's Green Rd., N.W. [6]

TRIUMPH, 1911, 2-speed free engine, almost perfect, complete with sidcar and accessories, special bargain. £39.—Below.

N.L.G., 1911, 4h.p. J.A.P., perfect, Jones and lamp, generator, horn, and spares; £32/10.—1

TRIUMPH, 1911, free engine model, lamp, horn, horn, and spares; £38.—North London age, Corsica St., Highbury, N. [6]

1½h.p. Motoecoche, accumulator, Whittle belt, good; £6 cash, or gradual.—Seen at Harvey, son, and Co's, South Woodford. [6]

2½h.p. Brown, Chatter frame, Amac carburetter, footrests, very low, good condition; £7 cash, gradual.—Seen at Harvey, Hudson, and Co's, Woodford. [6]

TRIUMPH, 1911, 3½h.p., free engine, absolute perfect condition; £36.—Apply Harrington, dealer, Wood St., High Barnet. [6]

3½h.p. 1912 Auto Motor Cycle, Amac carburetter, 2 justable pulley, splendid running order; £216.—106, Trafalgar Rd., Old Kent Rd. [6]

TRIUMPH, 1910, splendid condition, P. and H. horn, new back Michelin; £32.—Box 1152 Motor Cycle Offices, 20, Tudor St., E.C. [6]

DOUGLAS, standard, June, 1912, Brooks, Dunlop back, good lamp, horn, spares, tools, quick sale.—1, The Green, Eltham, Kent. [6]

£8/10.—De Dion, Chatter frame, brass torpedo to and B. h.b.c., Helios ignition, tyres perfect fast.—Ashburnham, Litchfield Rd., Sutton. [6]

TRIUMPH, 3½h.p., 1909, excellent condition, ometer, Brooks pan saddle, lamp and gear £25.—Rogers, 42, Church Rd., Hendon. [6]

T.T. Rudge, new September, very fast, horn, and 1913 Sensap carburetter, new tyres; £25.—son, 3, Church Rd., Bengoe, Hertford. [6]

1912 Centaur, 2½h.p. twin, like new, £31/10; featherweight, £25, excellent condition, roughly overhauled.—21, Holborn Viaduct. [6]

DOUGLAS, 1911, new condition, lamp, gen horn, and spares, new 2½ Dunlop and tube on £25.—2, Upper Roman Rd., Chelmsford. [6]

DOUGLAS Lady's Model, excellent condition, used, 2 speeds, free engine, all accessories; Apply, John Turner, engineer, East Hothly. [6]

1912 T.T. Rudge, all accessories and tools, in condition, very fast; £38; must sell; buying car.—Preece, Cock Hotel, High St., East Ham. [6]

2½h.p. Mag. Lightweight, Bosch, B. and B., full adjustable pulley, spring forks, tyres and a nice good; £15.—49, Griffin Rd., Plumstead. [6]

MUST Sell.—1911 free engine Premier, with a out sidcar; first offer; splendid condition No. 1530, The Motor Cycle Offices, Coventry. [6]

TRIUMPH, 1912, 3½h.p., free engine model; delivery; £55, cash, or deferred payments. Barker and Co., Kensington High St., W. [6]

PHELON and Moore, Ltd., 4, Percy St., W. several 2nd-hand P. and M.'s for sale; part on application, or can be seen at above address. [6]

1912 T.T. Rudge, very fast, B. and B. carb knee grips, h.b.c. mag., competition winner or good offer.—Homestead, New Thundersley, Essex. [6]

SINGER, 2½h.p., 1912, 2-speed; owner gives doctor's orders; £35 nett.—To be seen, Black Motor Works, 165, Shooter's Hill Rd., S.E. [6]

2-STROKE 3½h.p., late refinements, mag., V. Mahon; ride 20 miles enquirer; £20; ex lower power.—Pink, Wrotham Rd., Gravesend. [6]

F.N., 4-cyl., central intake, B. and B., foot Stewart speedometer, in splendid condition nearly new; £20.—104, Camberwell Grove, S.E. [6]

1912 Chatter-Jap, 3½h.p., Bosch enclosed, B. do 60, insured to April, disposing of illness; £25.—Grimes, 14, King St., Chertsey. [6]

£7/10.—6h.p. twin Sardinia, good condition, requires overhauling, and must sell.—Walcot Coleraine Cottages, Fortis Green, E. Finchley. [6]

SCOTT, Oct., 1910, just overhauled, £35/10 ford torpedo sidcar, 1912, £5/10; mag. part.—111, Walton Rd., East Molesey, Surrey. [6]

TRIUMPH, 1912, free engine, condition perfect miles only; forced sale; seen Dover; £4 L158, The Motor Cycle Offices, 20, Tudor St., E.C. [6]

£8, bargain.—2½h.p., spring forks, good tyre seat, footboards, battery, strong frame, 1 engine.—319, Upper Richmond Rd., East Shee [6]

1910 Triumph, Palmer and heavy Kempe new, new belt, exhaust whistle, extra mud first cheque for £24 has it.—33, Killyon Rd., C [6]



# THE MOTOR CYCLE

ESTABLISHED IN 1903

AND FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

FIVE HUNDREDTH CONSECUTIVE ISSUE.

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## Cyclecar Definition.

OUR contemporary, *The Autocar*, in its current issue, asks the pertinent question, What is a Cyclecar? Those who have read the R.A.C. and A.C.U. definition of the miniature motorcar might be inclined to reply that the resolution passed by the joint committees of the two bodies referred to answered the question. This definition is that a cyclecar is a motor vehicle, the chassis of which does not exceed 6 cwts. unladen, and the engine of which has a cylinder capacity not exceeding 1,100 c.c. The question is, does this definition cover all vehicles of the motor cycle class?

Apparently not, for we have had vehicles competing in sporting events and trials, which, although they have not exceeded the chassis weight mentioned above, have been much more than cyclecars when the total weight is taken into account. This is where the incompleteness of the definition comes in, because it is inconsistent to fix a chassis weight of 6 cwt. and allow unlimited body weight and seating capacity. Granted the A.C.U. committee added a rider to the original resolution which prevented a vehicle exceeding 7 cwts. total weight from competing in their events, but it is only effective in the case of vehicles of which the bodies are inseparable. We should like to ask to what vehicle this clause applies, for we have yet to find a motor car from which the body cannot be removed. This rider, by the way, has never, so far as we are able to trace, been confirmed by the committees of both the R.A.C. and A.C.U., therefore the correct and only definition existing which may be called, so to speak, "legal," is the 6 cwt. chassis ruling and 1,100 c.c. capacity. This brings us to the question, "What is a chassis?" Everyone conversant with motor matters knows that the definition of the French word "chassis" is a motor car minus the "carrosserie"—*anglice* body and upholstery. No British organisation has laid down any definite ruling as to what does or does not constitute a chassis. It is, however, interpreted by *The Autocar* as a motor car with tyres and all tanks, but minus body and wings. Some makers to this day quote prices for a chassis and state that the figure is without tyres, others include tyres but not wings, and still others do not include the dash if the latter be of wood.

Until some definite ruling be instituted the word chassis may be interpreted according to the maker's desire. The Manufacturers' Union has accepted the

R.A.C. and A.C.U. ruling of a 6 cwt. chassis, and no vehicle exceeding this weight can be exhibited at the cycle and motor cycle show next month. It will be interesting to see if a maker whose voiturette chassis exceeds 6 cwts. will be allowed to remove such articles as the dash, wing supports, and running board irons, etc., to reduce the weight to the limit, or whether these parts must be calculated in the total. It should not be left to the discretion of the show management to give decisions on such an important point, and we suggest that the R.A.C. and A.C.U. should forthwith define a chassis once and for all.

This brings us to the question of what is a cyclecar from the point of view of a purchaser. If the prospective buyer see at the car show a little car the weight of which (chassis) is 6½ cwts., he will not give up all intention of buying it because it exceeds the R.A.C. definition. He will buy it if he can afford it. The weight definition will not concern him. Taxation is far more likely to be a deterrent unless he find that he can use a single-cylinder 7 cwt. four-wheeler for a less tax than he can own and use a motor bicycle and sidecar with a twin-cylinder engine, which is the absurd position of the taxation question at the moment.

One thing is certain: there will be no sharp line of demarcation between the present owners of motor cycles and cars and those who now own, or intend to own, cyclecars. No new species of motorist will be created because the chassis weight of the vehicle used does not exceed 6 cwts. The motor cyclist who sells his motor cycle and sidecar and buys a little runabout will not call himself a "cyclecarist." The policy of this journal has been to cater for motor cyclists, and knowing as keen riders the interest taken in small runabouts by motor cyclists, we shall continue to place before our readers descriptions and illustrations of any light vehicles of new design.

*The Motor Cycle* will be the complete paper dealing alike with the motor bicycle and the motor cycle passenger machine. Occasionally we shall, perhaps, overstep the hard and fast line set down by the governing bodies, but that will make the paper no less interesting.

Makers of "cyclecars" will also take care that no strict definition is adhered to for long, and will not be any more bound by arbitrary regulations than we intend to be. Everything which interests motor cyclists will be the policy of the journal which has been the motor cyclists' paper for nine years without intermission.



# The Low Forced Induction Engine.

**T**HE ingenious experimental forced induction engine invented by Dr. A. M. Low, D.Sc., was fully described and illustrated in *The Motor Cycle* of February 29th, 1912. This was attached to an early type of runabout. The engine we now describe has been much improved and has been made by F. E. Baker, Ltd., Birmingham.

Fig. 3 is a section of the engine, which has a cylinder of 70 x 130 mm. Petrol is delivered by the pump K (fig. 2), driven by the eccentric L, and an intervening rocker into the petrol jacket O (fig. 3), which almost encircles the cylinder. The heat of the cylinder converts the petrol into vapour under very high pressure, and it issues from the jacket into the transfer pipe V (fig. 3), and by the passage U (fig. 3), through the rotary valve, and thence by the part X into the combustion chamber. The rotary valve W (fig. 3) is timed, and does not admit vapour until the piston is at the top of the compression stroke. As the piston descends on the induction stroke the mechanically operated overhead valve Y opens and pure air is drawn in. This, then, is compressed, and the valve W is then timed to open at the moment of highest compression, at which moment the spark takes place and continues during the early portion of the stroke.

The exhaust valve Z (clearly shown in fig. 3) is operated in the usual manner. This represents the cycle of operations. The petrol pump (fig. 2) is provided with a pressure controlling arrangement. There is a pipe Q leading from the petrol jacket to a valve above the petrol pump, the tension of which is controlled by the screw compressing the spring P<sup>1</sup>. In the event of the pressure in the jacket being too high, any excess of petrol passes through the ball valve in the by-pass R back again to the tank.

Fig 1 shows the lubrication arrangement. There is a sump C, at the bottom of the crank case, from which oil is raised by the pump A, driven by the eccentric B, which is in turn driven by the chain E from a sprocket on the main shaft. The oil passes from the pump up the pipe F, and is distributed to the rotary valve I, and thence from the other side of the valve to the bottom of the cylinder by means of the pipe J. On its way to the valve the oil branches off, and is forced in two directions at once, not only to the valve, but also to the main bearings.

The dynamic compression whilst running shown on an indicator is 500 lbs. to the square inch, while the static compression—that is calculated from the compression ratio—is 260 lbs. to the square inch.

It will be noticed on referring to the drawings that the petrol jacket is carried round the lower portion of the cylinder, as it has been found that when the jacket is over the cylinder head, as was the case in the earlier model, the pressure rose too quickly. An interesting point is that the piston comes up to a point within  $\frac{3}{8}$  in. of the top of the cylinder, thus scavenging the cylinder almost completely.

While the petrol gas passes down the slot leading to the combustion chamber, at the moment determined by the hand controlled rotary valve, it thereby cools itself, but its temperature on entering is immediately raised by the gas passing the flame of the plug, which sparks continuously during the early part of the stroke. The gas burns slowly at first because the air is compressed to only about 80 lbs. to the square inch, and no ignition takes place until the explosive mixture is formed. If the pressure of air be about 150 lbs. to the square inch (depending upon what fuel is

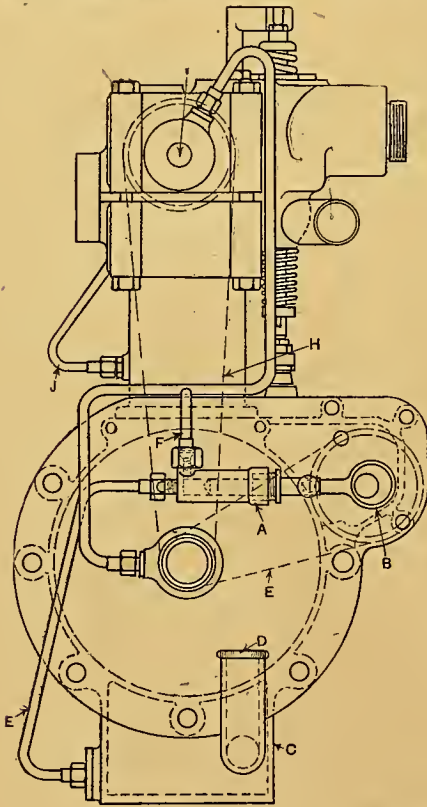


Fig. 1.

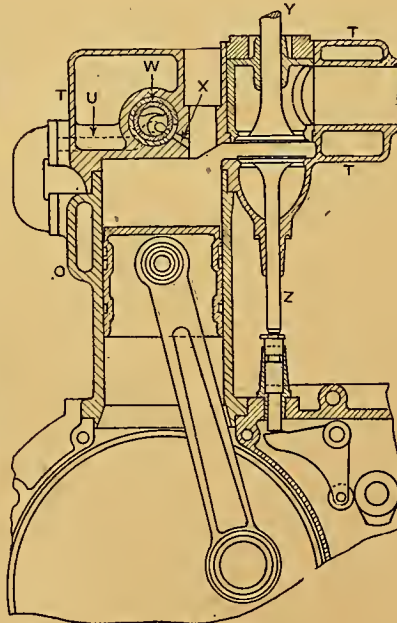


Fig. 2.

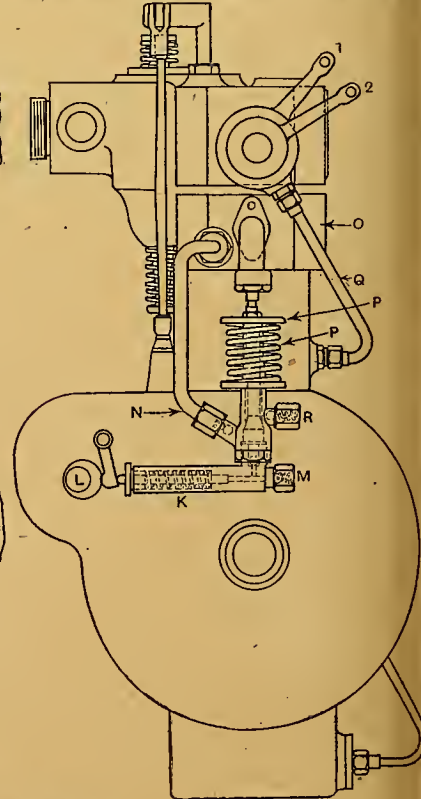


Fig. 3.

The Low forced induction engine. The lettered inscription refers to all the figures.

- A Oil pump
- B Oil pump eccentric
- C Oil sump
- D Oil filler
- E Oil pump driving chain
- F Oil delivery pipe
- H Rotary distributing valve driving chain
- I Rotary distributing valve
- J Oil return pipe

- K Petrol pump
- L Pump eccentric
- M Union for petrol pipe from tank
- N Petrol pipe
- O Petrol jacket
- P Spring controlling petrol vapour valve
- Q Vapour pipe
- R By-pass

- T Water jacket
- U Transfer passage
- V Transfer pipe
- W Rotary admission valve
- X Transfer port
- Y M.O. air admission valve
- Z M.O. exhaust valve
- 1 & 2 Levers controlling Rotating sleeve, operated by Bowden wire



**Low Forced Induction Engine.**—  
ed), the theory of stratification becomes more correct, and  
e gas at entry is so cooled by expansion that no actually  
plosive mixture is formed at once, but explosion takes  
ee between more or less local particles, on their tempera-  
re being raised to ignition point by the spark.  
The rotary valve is provided with two sleeves, which can  
operated by means of Bowden wires. One sleeve works on  
quick thread, and slides longitudinally if rotated, and is  
vided with a helical slot covering the actual gap in the  
lve. Another sleeve when rotated opens or closes this gap  
means of an annular slot, so that not only can the timing  
the valve be varied, but the petrol gap can be cut off  
together or opened to the fullest extent.  
The control is entirely by means of this rotary valve, and  
is interesting to note that the slot in the valve itself is  
ceedingly small. The valve is driven by means of a chain  
f the mainshaft at half the engine speed. The annular  
lve sleeve, possessing a longitudinal helical slot which  
ves a variation in timing, may be used in the same manner  
a spark lever. The second annular sleeve has a triangular  
e cut round it, so that by bringing different portions of  
e slot opposite the valve, the amount of opening can be  
ried at will. Driving fast on the level one would naturally  
mit just a suspicion of gas very early, expansively, just  
a locomotive driver links up his engine as the tractive  
ort eases off after leaving a station. To climb hills, one  
mits the gas late, and allows it to enter for some period  
the stroke, thus maintaining pressure on the piston  
roughout the length of the stroke.  
As a more or less continuous spark is necessary a high  
eed trembler coil is employed. Experiments, however, are  
ing made with an alternator, so as to do away with the

necessity of carrying accumulators. The fact that the engine  
is water-cooled, especially round the valve, and the fact that  
the valve is lubricated by oil under pressure, render the  
working of the latter possible, while further to ensure the  
absence of leakage, rings are cut round the sleeves and valves  
to ensure an ample supply of oil and thus prevent leaking of  
pressure. Most details of the engine are quite ordinary, the  
crank case is of steel and very deep, while all moving parts  
are made especially strong. No ball bearings are employed,  
the main bearings being of ample size.  
In the case of the old model a carburetter was used for the  
initial starting efforts, but with the aid of a quarter com-  
pression device starting is rendered quite easy, if a little  
petrol be injected into the rotary valve and is allowed to be  
sucked in with the air. This will permit the engine to run  
on the four-cycle system as long as the petrol lasts. In the  
meantime the engine becomes warmed up, and when the  
quarter compression lever is released the engine runs on the  
Low cycle.  
The petrol gas is at a pressure of about 1,000 lbs. to the  
square inch, but the spirit evaporates so quickly that the  
pressure is never constant, and if the safety valve be used as  
soon as this is opened pressure drops immediately. If, how-  
ever, the valve is screwed up the pressure regulates itself to  
a certain extent, causing re-condensation. The exhaust valve  
will probably be a piston in future, but at present it is of the  
ordinary type, but probably our old friend the concentric  
double exhaust valve will be employed. This, our readers  
may remember, consists of an ordinary exhaust valve with a  
small valve in the centre, which is timed to open slightly  
before the main valve, thus allowing part of the exhaust to  
escape and presenting a small area of resistance against the  
exit of the gases, after which the main valve opens in the  
ordinary way.

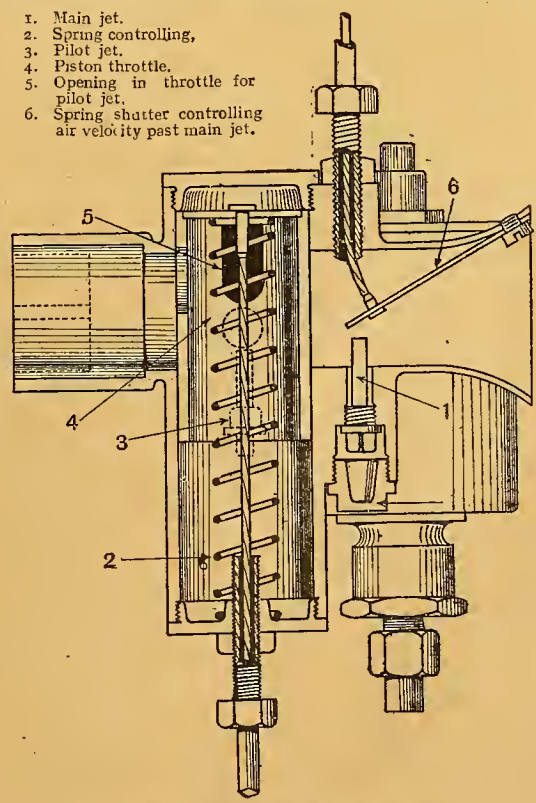
# A 1913 Pattern Binks Carburetter.

**M**R. CHARLES BINKS is about to introduce a  
new carburetter which he terms the optionally  
automatic carburetter. That is to say,  
though the carburetter can be used entirely auto-  
matically, yet an adjustment is provided by a second  
ver by means of which the mixture may be either  
rengthened or weakened to suit the varying condi-  
ons such as occur in hill-climbing or very high speed  
ork.

## A Spring Steel Shutter.

In most respects the new carburetter resembles the  
12 automatic type, for it has two jets and choke  
bes which are in turn uncovered at the correct instant  
y a single piston throttle. This piston is now  
versed, and opens downwards instead of upwards.  
he main alteration, however, lies in the shutter 6,  
hich is made of spring steel and lies above the main  
t 1. Normally this shutter should be about half-  
ay open, and such a combination of jets used that  
e engine will accelerate quickly when the main jet  
omes into play. It may then be used as an automatic  
rburetter in the usual way. Should a corner be  
ountered or a steep hill, the shutter may be lowered,  
us increasing the velocity past the main jet, or, on  
e other hand, if very high speed be required the  
utter may be raised, thus lowering the velocity.  
he shutter is controlled by a lever on the handle-  
ar, which should be marked in its mid-position, so  
at the rider can always return the shutter to its most  
efficient automatic position.  
Mr Binks points out that the carburetter has been  
duced solely for hill-climbs and for those who do  
ot yet believe in the automatic carburetter. He points  
ut that after much experience he finds that the second  
ever can only be of advantage in a competition hill-  
limb or for racing work. He will, therefore, continue

to market his present type of single lever carburetter.  
Both these types are made also in a lightweight size,  
and either as shown or inverted.

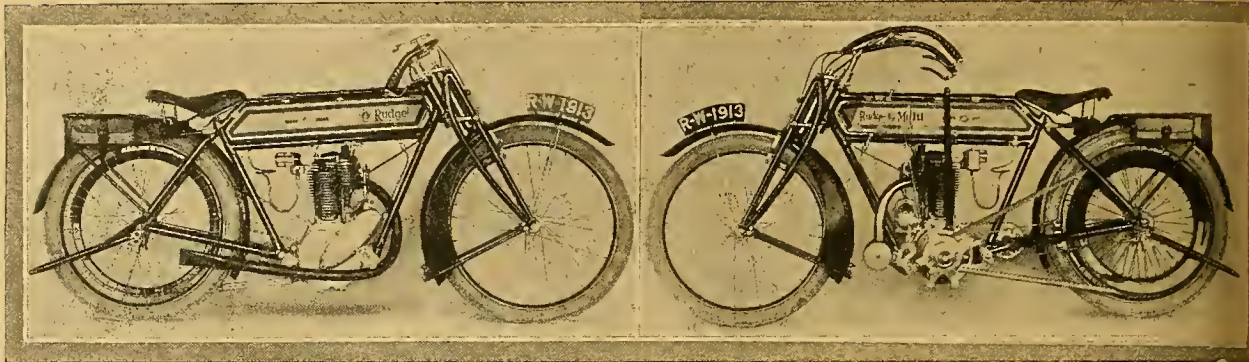


The Binks optionally automatic carburetter.



# RUDGE 1913 MODELS.

A 750 c.c. ENGINE FOR SIDECARS AND CYCLECARS.



1913 model T.T. Rudge.

Belt side of the new Rudge Multi.

**T**HE new model Rudge motor bicycles have undergone very little change for 1913, which will cause no surprise, seeing that the machines have been eminently successful during the present year. A sidecar model is a new departure for the company, and another new vehicle to be shown at Olympia is the Rudge cyclecar, though the complete machine is not yet ready. We are, how-

ever, durable than any kind of phosphor bronze bearing. The construction of the bearing makes it especially easy for oil to get in. A new design of piston has been adopted for 1913. There is a ring at the top and bottom with a recess in the piston wall, which not only reduces weight to a minimum, but also ensures a film of oil in the path of the rings. The riveting up of the engine flywheels is nearly twice as strong as last year, we are assured, and the timing wheels are almost doubly as strong as they have been hitherto. Special attention has been paid to air release, there being four points at which compressed air may escape. The new pattern Senspray carburetter is a standard fitment. This carburetter, it will be remembered, is of the "straight through" type. Ruthardt magnetos will be used in addition to the Eisemann, which has been standard during 1912. It goes without saying that the Ruthardt has been selected after exhaustive tests.

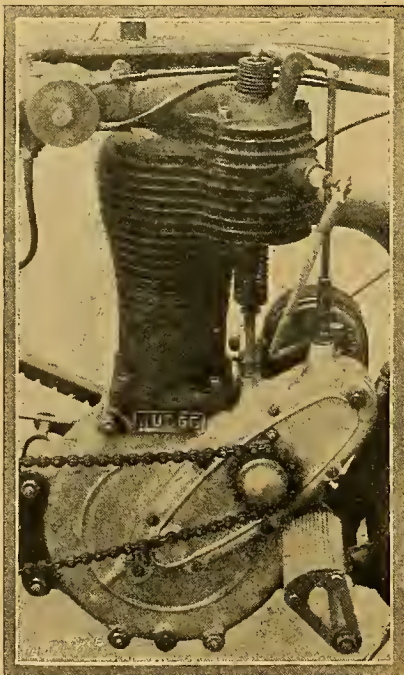
## Waterproof Hubs.

One of the main defects of motor bicycles which the wet summer has disclosed is the bad effect of wet on the front

cones. To overcome this a new type hub flange has been adopted, which drains all the water that runs down the spokes away from the entrance to the cups, and, further, these cups are protected by dust caps. The front brake and front mudguard stays are now placed entirely outside the mudguard. In the iron brake the shoes are pivoted midway along the links, which are pulled up the fork; this gives increased leverage. The 1913 Multi has been improved in detail throughout, and the twenty-speed gear has been rendered thoroughly weatherproof. The rear side the mudguard. In the front brake steel, ensuring concentricity, balance, a uniformity of material. A new design flange enables spokes to be used with or without a small bend in them, and it is claimed that the possibility of broken spokes, either wheel has been entirely eliminated. On the front fork large grease cham-



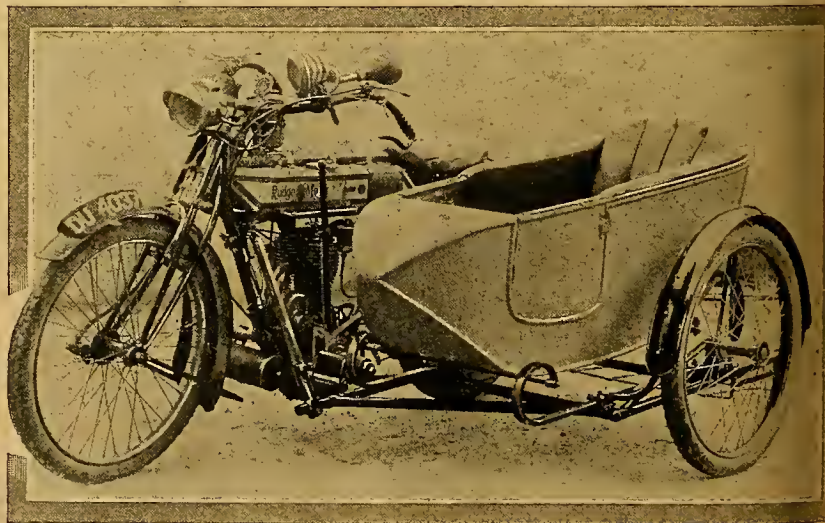
Method of fixing timing wheel on serrated shaft.



The 750 c.c. Rudge engine, which in 1913 will be used on Rudge cyclecars and sidecar machines.

ever, able to illustrate the power unit, and to state that it will be of very light construction, incorporating belt drive and a variable pulley gear.

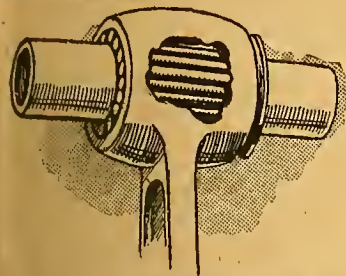
In connection with the two types of engines for 1913, these will be fitted with specially designed roller bearings to the crank pin and gudgeon pin as it has been found that at high speeds this type of bearing causes far less friction and is more



The Rudge sidecar combination, to be supplied complete next year.

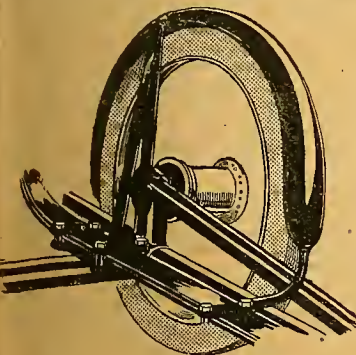


Rudge 1918 Models.—



Rudge small end roller bearing with one thrust plate removed.  
provided to each pair of shackles, though they are not, of course, visible to the eye.

**The 750 c.c. Engine.**  
A big single-cylinder engine has been specially introduced for passenger work, the Rudge is a popular sidecar machine. The engine is illustrated on page 1194, and it will be gathered that it is on exactly similar lines as the 85 x 88 mm.



part of the trussed sidecar frame and mudguard fixing.

engine. The 750 c.c. engine has a stroke of 132 mm., the bore remaining 85 mm. Of course, heavier flywheels are used. By careful designing it has been possible to mount this engine into a standard frame as far as the height of the top rail is concerned, but to give sufficient clearance the

tank tube has been slightly deflected and the tank recessed for the overhead inlet valve mechanism. This big engine will be fitted to the sidecar model and also on the new cyclecar. It may be obtained with either clutch or the Rudge multi-gear. It is worthy of mention that the sidecar model has a larger tank capacity, which is appropriate to the larger cylinder capacity. We are told that the 750 c.c. engine is exceptionally powerful on hills and has succeeded in taking three up Sudeley Hill, near Winchcombe.

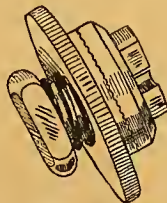
**The Sidecar Chassis.**

This chassis, like all Rudge productions, has been carefully thought out from A to Z. It has been tested all the year and improvements which suggested themselves at once carried out. Four-point suspension is adopted, the fourth point attachment being at the footrest. It will be remembered that we recommended all sidecar users to have a similar attachment fitted to their machines for their own safety.



Latest Rudge Piston.

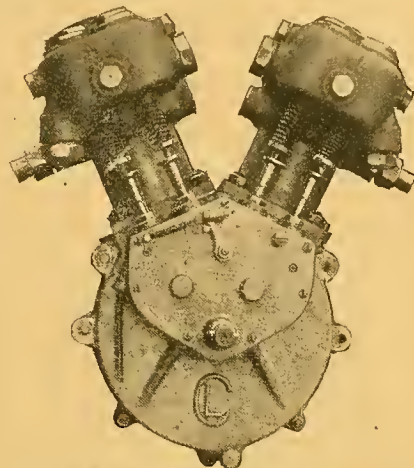
on the same lines as the Rudge-Whitworth motor car wheels; that is to say, the outer row of spokes are inclined at a considerable angle, thus giving lateral stability. The hub flanges are also flared to prevent the water running into the bearings. The attachment of the mudguard is an instance of the care in design. A round stay is used fore and aft coupled direct to the side tube, and in the centre the guard is steadied by a duplex steel member embracing the crown of the mudguard both inside and out. The chassis, it will be observed from the photograph, is of the underslung type, the main tube being about four inches below the centre of the wheel. The diagonal tube connecting the left side member with the right side member is worthy of notice. Two long leaf springs are used curved at each end, and shackles are also provided. The coach-built body is of up-to-date design and affords a most comfortable seating position. In general design it resembles a swingboat



Device for adjusting the magneto timing invented by A. H. Hunt, of A. H. Hunt, Ltd. By means of the ratchet device the timing can be gradually advanced or retarded without interfering with the locking arrangement on the armature spindle. The operation can be performed without the use of tools.

**CHATER-LEA CYCLECAR.**

The new Chater-Lea cyclecar, which will be seen for the first time at Olympia, will rank among the first-grade vehicles of this type. Two models will be shown, one fitted with an air-cooled engine and the other with the new Chater-Lea water-cooled engine, which, except that the cylinders are water-cooled, is similar to the air-cooled type. The bore and

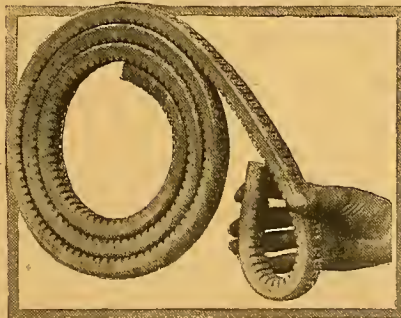


A new design of 8 h.p. twin water-cooled engine by Chater Lea, Ltd., and intended for use on cyclecars.

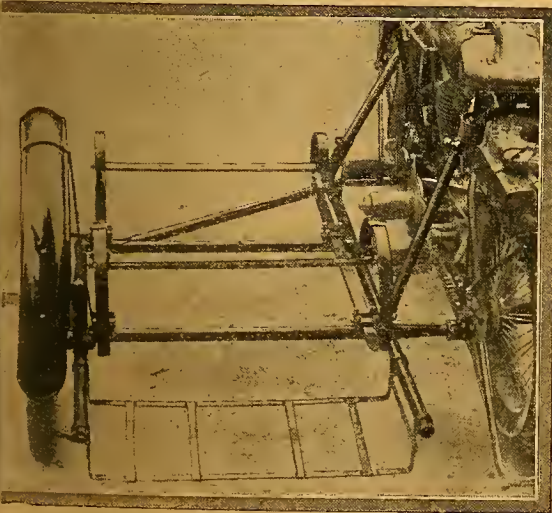
stroke are 85 mm. The exterior finish is remarkably good, and the engine appears to be a very neat job. The new cyclecar will be provided with a channel steel frame, while the transmission through the Chater-Lea three-speed gear box and worm driven back axle, which have proved their worth during the present year, will be retained.

**A FLEXIBLE BELT.**

A new rubber and canvas belt of wonderful flexibility is the Clincher introduced by the North British Rubber Co., Ltd. The belt has grooves both top and bottom, the design of the top rendering the belt very flexible. The small round indentations are



intended as an indication where to bore the belt for a fastener screw, so as to ensure that the hole is punched through the thickest part of the belt. The size, 1 1/2 in., too, is a point of note, the makers contending that this size will better suit a 3 in. pulley than the ordinary 3 in. belt does, for it is well known that a belt wears and stretches after continued use and drops lower in the groove.



Chassis of the Rudge sidecar, showing long leaf springs.



# Questions & Replies

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

## How to Improve Acceleration.

**Q.** (1.) I should be greatly obliged if you can tell me what (if anything) I can do to improve the picking up of my machine, which is a four-cylinder F.N., automatic carburettor. When running at 15 m.p.h. it is all I could wish, but after closing throttle and slowing to 6 m.p.h. it is very slow in picking up when again opened. (2.) What is the correct petrol level in jet? (3.) How can I ascertain that level?—NOVICE.

(1.) You must be careful not to open the throttle too suddenly. Opening the throttle in this way tends to choke the engine. You might also try fitting new inlet valve springs. (2.) The correct level is about  $\frac{1}{16}$  in. from the top of the jet. This can be ascertained by removing the jet and fitting a dummy jet, in the shape of a tube consisting of a piece of copper pipe of the same size as the ordinary jet, in which the level can be clearly seen.

## Speed and Gears.

**Q.** (1.) I am rather puzzled by your gear ratio speed, page 148, "Motor Cycles and How to Manage Them." Take one line—Ratio . . . Speed with of gear. . . 26 in. wheel.

3 to 1 . . . 51.5  
What is 51.5? Are they miles per hour? If so, the largest gear, say, 12 to 1, seems to go slower than the smaller one. (2.) Running up hill 1 in 10 you say— $\left(3 + \frac{0.05}{\text{B.H.P.}}\right)$  to 1. Does this mean  $0. \times 05$  divided by horse-power, and, if so, say horse-power is  $2\frac{1}{4}$ , would it be  $3 \frac{1.45}{1}$ ? (3.) I have a  $2\frac{1}{4}$  h.p. Minerva, second-hand, just overhauled, which, on the level, will take gas and air all right, but up hill the trouble begins. The gear ratio (measured by me, according to your book) is 1 in 5. Is this too high; if so, what do you recommend?—E.M.

(1.) The speed is, of course, in miles per hour. Naturally, a gear of 12 to 1 will give less speed with the engine turning at the same number of revolutions per minute. A gear of 3 to 1 means that the engine turns three times while the wheel turns once. (2.) The second formula should read— $\left(3 + \frac{.05 \text{ W}}{\text{B.H.P.}}\right)$  to 1. If we take the weight of yourself and machine to be 300 lbs. we get the following result:

$$3 + \frac{.05 \times 300}{2.25} = 9\frac{2}{3} \text{ (} 9\frac{2}{3} \text{ to 1 gear.)}$$

You cannot get so low a gear as this with a direct belt drive. (3.) About 6 to 1

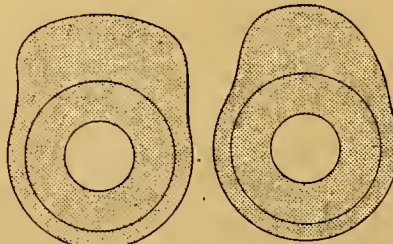


will be a useful ratio. You might reduce the size of your pulley and have a larger belt rim fitted.

## An English Machine for Austria.

**Q.** I am about to buy an English motor cycle. From catalogues received I should prefer a Scott cycle, but unfortunately it is impossible for me to see one before buying. As an old motorist I have been fascinated by the excellent qualities of this original construction, and I think it has no doubt important advantages. Yet, being an eager reader of your periodical, it did not escape my observation that there seem to exist ticklish points on which one can judge by experience only, e.g., the automatic lubrication, the gas-tight joint where the mainshaft leaves the crank case, the crank case compression depending thereon, and others. I intend to make use of the cycle both for solo and sidecar purposes, and for use on very steep roads in the Alps.—Dr. N. SCHWARZ (Austria).

The automatic lubrication on this machine is quite satisfactory, but you might have a little trouble from loss of crank case compression, and the gauze of the transfer ports requires to be cleaned from time to time. We have used these machines for a considerable time at intervals since they were first introduced, and last year found the 1911 model excellent—very smooth running, silent, and altogether delightful. It was used by us over the stiffest hills in Yorkshire, in which the gradients are quite as



The above line sketches are those of the exhaust and inlet cam contours taken from a record breaking motor cycle engine. We publish them as being of interest to motor cyclists who are in a position either to make new or alter old cams to obtain improved speed results.

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

bad as those in the Alps, though not course, quite so long. The water-cool should give no trouble whatever.

## Misfiring at Speed.

**Q.** Can you tell me what is wrong with my machine? My trouble is that at high speed (43 m.p.h.) my engine begins to misfire, and will not go faster except for a few moments so. I have tried to regulate carburettor, but it seems to be the same with each jet. I have tried different plugs and altering space between the points of the neto, each without any better result. I think the valves are all right, the timing is correct. I may say up to 40 m.p.h. my engine runs smoothly, and will also run quite slowly.—F.C.W.

From your description we should think the trouble lies in the points of magneto. Trim these up till they bright and meet evenly, and set them to break so that the feeler on the neto spanner is rather a tight fit, would also suggest cleaning the stems, as these may have become gummed and stick in the guides.

## Starting a Cyclecar.

**Q.** I wonder if you can help with regard to the starting of my A.C. It is a 1912 model new from the works in . . . and sometimes it is impossible to start the engine from the handle even after a dozen or more turns unless the engine is hot, when it may possibly go the first turn without a backfire. When once started the engine runs beautifully, and no trouble at all. I have been advised to start the engine by using my hand, so as to obviate the danger of backfires, but it is impossible on A.C., as the pressure is so enormous. I have just lately "cranked" a A.C. with my left hand with the greatest of ease. Can I make like that by having the magneto seen to? Do you advise me to take it to a local garage or to send it to the makers?—(Miss) M.I.L.W.

The trouble is almost undoubtedly due to a loose connection in the union between the carburettor and engine. Leaks of this kind are almost certain to prevent easy starting. We should for a moment suppose that it is necessary to send the machine back to the makers. If you will get into communication with them, they will probably give some little hints that will quite overcome the difficulty.



### Trouble with Accumulator Ignition.

\* Multi-gear on Counter-shaft.

Orders, which must be accompanied with remittance, should be addressed to the Photographic Department—Iliffe and Sons Limited, 20, Tudor Street, London, E.C.



## OCCASIONAL COMMENTS.

By "IXION."

**The Cyclecar Price Limit.**

I have received news which shows that the A.C.U. will shortly be forced to legislate more accurately with regard to four-wheeled cyclecars. A well-known make of four-cylinder car will be marketed for 1913 at a lower price than is now asked for several well-known quadricycles, falsely so-called. The situation will then be Gilbertian to a degree, and the present overlap between the car and cycle markets will be grossly extended.

**Humours of the Runabout.**

The cyclecar type of runabout has introduced at least one new joke into our pet hobby. With most belt-driven machines it is possible for a belt to drop off without the drivers being aware of the fact! What ingenious engineer can invent a safeguard for this annoying and expensive *contretemps*? We shall have to get belt-makers to stamp our name and address on the top run!

**Leaning In and Out on Cyclecars.**

I withdraw *in toto* my apologies to those makers of cyclecars who denied my allegation that their passengers "weatherilted" on bad corners in the trials. I had much difficulty in believing that my senses and my memory had alike deceived me, but their protests forced me to doubt myself. I have looked over my file of *The Motor Cycle* and find a picture published on August 8th in connection with the Scottish Trials, which revealed a passenger leaning in on a corner taken to the right. The manufacturers may assert that this balancing was a piece of gratuitous "swank," intended to convey an impression of sensational speed and dash to the untutored spectator; but of the fact there is no longer a tinge of doubt. I also possess several other photographs depicting the same attitudes at corners.

**Air-cooling and Water-cooling on Voiturettes.**

A new interest is added to the thorny question of runabout design by the problem of cooling. There is not the faintest shadow of doubt that air-cooling will suffice for all ordinary purposes. A light chassis, designed on hybrid motor cycle lines, and used for general work in the southern half of England, need not be burdened with the weight, cost, and complication of water-cooling.

It is, however, questionable whether some of the air-cooled motor cycle engines now fitted to cyclecars could face the arduous work of a Scottish Trial, or whether an inexperienced driver could cross London on one of them non-stop.

I notice among the projected designs for 1913 several types which are distinctly heavy, and which incorporate a deal of friction in their efforts to obtain a no-trouble transmission. These factors imply a reduction of hill-climbing speed, and real hard work in the northern half of Great Britain might prove that these designs are inefficient under special strains. At any rate, the presence of a fleet of cyclecars promises to add a spice of genuine interest to the 1913 Trials, which might have degenerated into a mere exercise canter if they had been confined to motor bicycles. Water-cooling should certainly be eschewed wherever air-cooling can suffice.

**The All-black Motor Bicycle.**

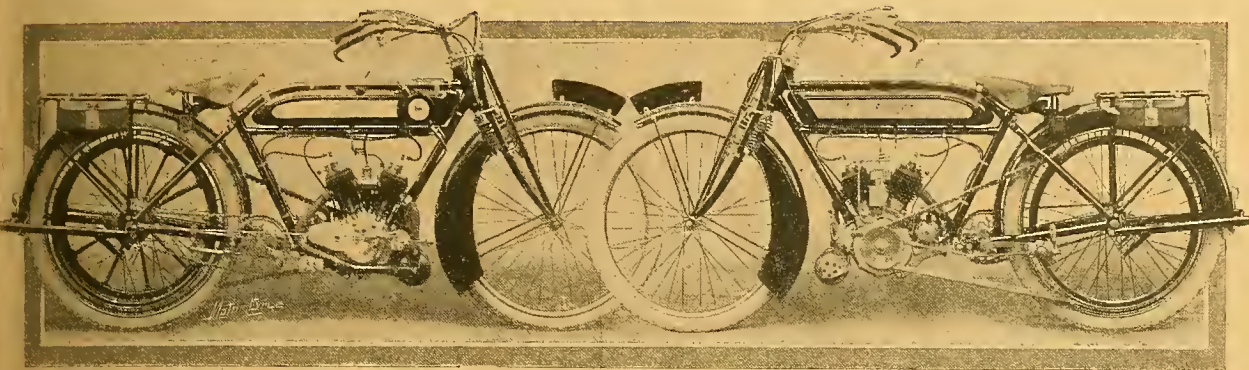
Publish it not in Gath, but I remain a devotee of the push bicycle as a local runabout. For the twelve months I have ridden an all-black machine without a spot of plating anywhere in its anatomy. Delights of the change from a superbly nickelled machine to a machine of this description. I can take the machine on all weathers, or leave it out in the rain all night, it never asks for more attention than a swill from a hose, followed by a rub from an absorbent cloth. It need never grease it down to avoid rust; I need not tire my elderly muscles by massaging it with motor polish and dusters. Why cannot I procure any make of motor bicycle I fancy in the same finish? A motor bicycle is not like a silk hat, designed to impress poorer classes of society on infrequent occasions of ceremonial. It is becoming the everyday means of locomotion for a hard riding and busy section of the community; and cleaning one down is a weariness to the flesh. There are one or two makers who black a good deal of the machine, but they are inconsistent; they give you a black handle-bar with plated corners and levers! A black hooter, with plated rings round it! A black lamp and generator, with plated knobs and clamps. But there is not a single machine (I believe) with no plating at all on itself and its accessories, and such a machine would be very popular with many of us. It is true that certain nuts and bolts cannot be enamelled or covered with a skin of black celluloid, but they might be finished in dull black; plating is very little good on nuts, as it is so liable to peel off from the corners.



Miss Mona Clease, of Shrewsbury, mounted on her 2½ h.p. Farwell motor bicycle. Miss Clease is but seventeen years old, and had had no experience of motor bicycles a month ago, but she now manages her machine skillfully in the notoriously difficult streets of Shrewsbury, and has climbed Wentlock Edge. Her costume was designed for ski-ing in Switzerland.



## HUMBER NEW MODELS.

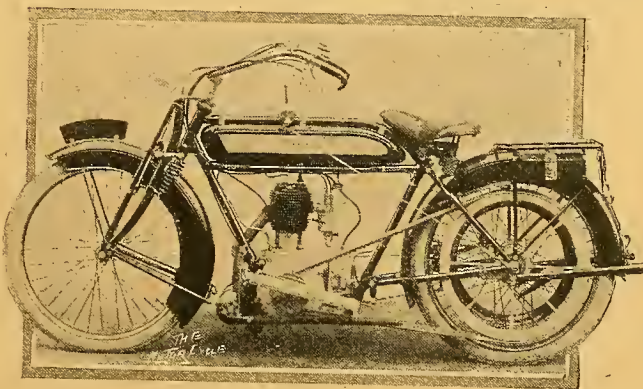
Cone Valves on the  $3\frac{1}{2}$  h.p. Engine. Belt Guards Standard.The  $2\frac{1}{4}$  h.p. twin Humber with three-speed gear.The single-speed  $2\frac{1}{4}$  h.p. twin. Observe the rear belt guard.

**H**UMBER motor cycles for 1913 have undergone but little change—in fact, the ladies' model, the  $2\frac{1}{4}$  h.p. mount, and the  $2\frac{3}{4}$  h.p. twin remain unaltered to outward appearances except for a belt guard on the latter. The  $3\frac{1}{2}$  h.p. model is the one most altered from the present year's design, but as the forerunner of this new pattern was illustrated in *The Motor Cycle* last August, when P. J. Evans performed so conspicuously on it in the Six Days' Trials, the latest photograph will present no real departures. We may review the new features. First of all the three-speed Sturmey-Archer gear has been adopted, and also a kick starter, which, by the way, is of substantial construction. It is mounted on the right-hand chain stay, and consists of a pedal and crank operating a chain mounted on the free-wheel. An eccentric adjustment is provided to take up any slackness which may develop in the chain after use.

The rear brake appears to be exceptionally powerful, which should commend the  $3\frac{1}{2}$  h.p. Humber to sidecar users. It operates inside the groove of theummy belt rim, the long pad having a compensating device. The engine (bore and stroke  $84 \times 90$  mm.) is now fitted with cone-seated valves.

A rim belt is now a standard fitting. The question of silence has received attention. An outlet pipe extends from the silencer proper under the left foot-board, but the cut-out at present used may be dispensed with.

A neat belt guard is formed by a continuation of the rear mudguard. Though it will not keep all wet off the

1913 pattern  $3\frac{1}{2}$  h.p. three-speed Humber. Observe extension pipe from silencer.

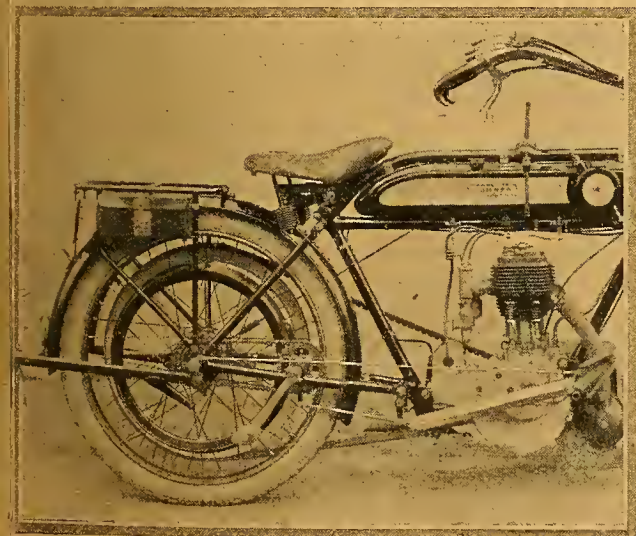
belt it will prevent mud, etc., being flung on to the rider's back. Two stands are used, and the magneto is handle-bar controlled.

**The  $2\frac{1}{4}$  h.p. Twin.**

The belt guard is the only departure on this model, the Armstrong gear being retained. The flat-faced valves are retained, as they answer all requirements. We ourselves have used one of these models all the year, and have never experienced a broken valve. The three-speeder is a most sporting little mount to ride, and its pace is equal to many  $3\frac{1}{2}$  h.p. machines. The consumption averages about ninety miles to the gallon. One trouble has been oil leaking from the crank case joints, but in the 1913 model we understand this has been got over by the adoption of felt washers to all bearings in preference to oil rings.

We saw a  $3\frac{1}{2}$  h.p. racing machine with sidecar at the Humber Works; this is only an experimental model made to see what a well-tuned  $3\frac{1}{2}$  h.p. Humber really can do. We are assured that 50 m.p.h. can be maintained on the open road.

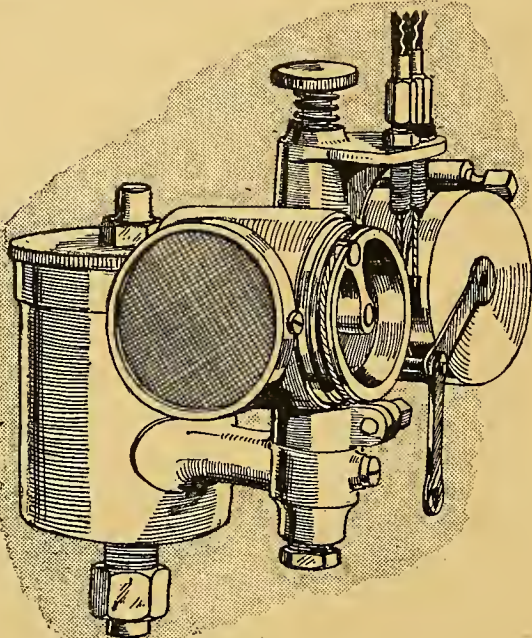
The Humberette we have already described.

Rear portion of  $3\frac{1}{2}$  h.p. mount, showing the neat kick-starter.



## THE B.S.A. CARBURETTER.

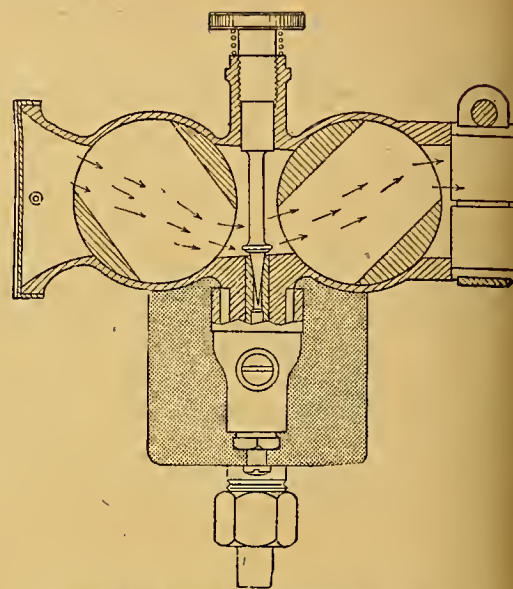
THE B.S.A. carburetter most of our readers will recognise as the C.A.P. under a new name, seeing that it has already been dealt with in these pages. The B.S.A. Co. have now taken over the manufacture, and are producing it in considerable quantities.



Method of operating the air and throttle barrels.

Petrol is fed to the jet by means of the usual float mechanism. The float level is set correctly at the works, and should not be altered, but if after long use it should require resetting, the operation is rendered simple by the use of a screwed float needle and a castellated nut, which may be fixed thereon in any position by means of a split pin.

The main jet is easily adjustable from the outside,



Section of the latest B.S.A. carburetter with variable jet.

and lies directly between two horizontal barrels, one of which acts as the throttle and the other as the air control. Both are normally held in the off position by powerful clock springs and opened by Bowden wire control. A slight alteration has taken place in the suspension of the barrels, which are now supported by a central bearing instead of revolving in their housings, which was apt to cause jamming. The barrels rotate in such a manner that the stream of air entering through the air port impinges directly on the jet, and so that there is always a straight through passage in the full open position there is no other obstruction to the flow of gases than the jet itself. The carburetter is made almost entirely from brass castings, and is finished in dull plating. It will be fitted to all 1913 B.S.A. machines as standard, and will also be sold as a separate unit.

## WATERPROOFING THE MACHINE FOR WINTER.

ONE of the chief drawbacks to winter riding is the amount of cleaning necessary if one wants to have a presentable bicycle for the dry season; other nuisances are hubs which persist in letting mud into the bearings, and control wires which are continually getting jammed.

This is just the right time of year to fit good non-skid tyres to the wheels.

## To Prevent Rust.

While you have got the wheels out, examine the ball bearings, and fill the races with hub lubricant. (Don't overdo this, or the overflow will render your brakes useless.) The cones should then be adjusted so that there is just sufficient slackness for the wheel to swing back after revolving slowly. After replacing tyre, cover hub, spokes, and rim with vaseline or any similar grease. (Vaseline is best applied with a paint brush.) If this be done thoroughly there should be no need to touch them again till the spring. Brake pad holders, clips, and speedometer wheels all enjoy the same

treatment. If a bicycle has been thoroughly vaselined one can safely turn a hose on it, avoiding the hub and magneto. A gentle flow of water is all that is necessary if the mud is not given time to harden. When the tyre is off you will probably find the inside of the rim very rusty. Emery cloth and a coat of enamel should prevent this happening again.

For Bowden wires there is nothing like powdered graphite mixed with vaseline for lubricating the inner wire. This is also excellent for valve guides, and the threads of valve caps, plugs, etc. A common cause of trouble with wires is that the outer casing gets nipped between the frame and the spring forks, when the wheel is turned right round.

The coil springs of fork and saddle are always difficult to clean, and therefore require a plentiful application of vaseline.

After hosing down a bicycle, the enamelled portion should be rubbed with a wash leather, and a visit next morning will show where you have forgotten to vaseline.

OILSKIN.



# The Avon India Rubber Co., Ltd.

are offering a limited number of

## Avon-Lyso

# Motor-Cycle Belts

at the following prices—  
per foot.



$\frac{5}{8}$ " **1/5**

The last word in Belts.

$\frac{3}{4}$ " **1/9**

Unsurpassed for flexibility and durability.

$\frac{7}{8}$ " **2/1**

1" **2/4**

These belts can be obtained direct from our Depots and Works, or through any recognised Agents.

less 50%  
discount.

Postage 6d.  
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The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

### The Springing of Motor Cycles.

Sir,—If "Springus," or anyone looking for comfort in motor cycling, should be coming Southampton way, we could give them a ride on a machine with the fittings we think they are looking for, viz., our new ball spring suspenders, patent No. 30352, on which we have done some 4,000 miles. We are not in a position to turn out complete machines fitted with this device, but we should be pleased to fit a set to a few machines, pending the arrangement with some firms for manufacturing or increasing our plant for this purpose.

RELIANCE WORKS CO., LTD.,

F. SOUTHARD, Manager.

### Amateur Police Traps.

Sir,—I have followed with some interest the correspondence re action proposed to be taken by sundry cyclists in Manchester, with regard to timing motorists and laying information against those found driving in excess of the speed limit. While very rightly pointing out the impertinence of a Mr. Burrows, who is apparently the ring-leader in the matter, you seem inclined to suggest that the Cyclists' Touring Club are not officially concerned in the matter. Now, I have before me a current issue of the *C.T.C. Gazette*, and on pages 387, 388, and 389 is given a very full report of this same matter, and it is stated that Mr. Burrows is hon. secretary to the C.T.C. District Association, and that his proposals were submitted to a "conference of members of the local association of the National Cyclists' Union and Cyclists' Touring Club," approved by the hon. consulting solicitor to the Manchester District Association of the C.T.C., and it was resolved by the meeting "to submit the scheme, fully recommended by the Conference, to the members of the organisations represented for approval and further action."

In face of the above, I consider that it is the duty of the motoring press to keep this matter very closely under observation, and if any official approval is given to such proposals, to give it the greatest publicity amongst motoring members of the C.T.C., so that their resignations may go in *en bloc*, as it is manifestly wrong for motorists to support any concern which directly or indirectly lends itself to the furtherance of the already severe persecution to which motorists are subjected.

J. STUART WHITE, Member of C.T.C.

### Novel Interpretation of Competition Rule.

Sir,—I think the following instance of the manner in which rules are sometimes stretched to an extraordinary degree will be of interest to some of your readers.

On September 15th, the Hunslet Motor Cycle Club held a 200 mile reliability trial in which I competed with my 5 h.p. A.J.S. and sidecar and won. I was surprised to hear a few days afterwards that I had been objected to on the grounds of having received assistance from my passenger in the repair of a puncture in my sidecar tyre.

The question came up for decision at a meeting of the club on October 3rd, and I was duly disqualified under a rule—the only rule they had, by the by, for the control of the competition—which consisted of a resolution passed at a meeting of the club a few days before the trial, to the effect that the sidecar passenger should not be allowed to drive in the competition. How such a rule can be held to cover assistance in repairing a puncture passes my comprehension. Such an interpretation is truly Gilbertian in conception, to call it childish would be an insult to the intelligence of a child.

As indicating the highly judicial manner in which the subject was treated, I should like to quote one remark which was made during the discussion—it was that "the fact of turning the wheel round to locate the puncture is in itself driving." After that I am sure you will not be surprised at the decision arrived at. I may add that I have no knowledge as to whether such assistance is usually barred in such competitions or not, as it is my first experience of motor cycle club competitions, and, if this be a fair sample of what takes place after them, I think it will be my last; but I am told that such assistance is always allowed unless specifically prohibited in the rules.

H. G. BOWES.

### A Suggestion to Olympia Exhibitors.

Sir,—Re the coming motor cycle show. I should be much obliged if you could suggest to the authorities that the attendants at the various stands should be distinguished in some way, either simply as "attendant" or with the firm's name, say on a button. I have sometimes wasted much time in trying to pick out a representative of a firm on a large stand when a number of people were on it. I have also greatly offended some visitors by asking them if they were on the staff of a firm.

ERNEST E. ALLEN.

[This suggestion has already been made by *The Motor Cycle* to the secretary of the Motor Cycle Manufacturers' Union.

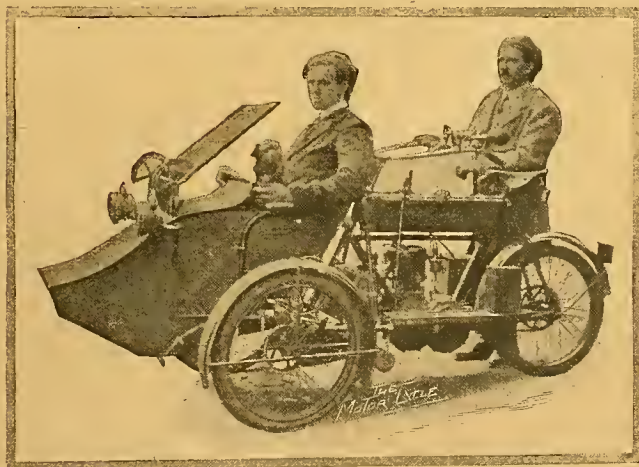
Several well-known firms already use a distinguishing badge.

—Ed.]

### A Rejuvenated Tricar.

Sir,—Enclosed you will find a photograph of my 6 h.p. water-cooled Centaur with alterations made by myself. I think I have greatly improved its appearance and that it is now quite a smart looking turnout.

I have turned the forecar, which was open, into a closed coach-built front, with wind screen and door, only adding



George E. Oake's modernised Centaur tricar described in accompanying letter.

about seven pounds to the machine's weight by taking other parts off. I am a keen reader of *The Motor Cycle*, and send this photograph for your approval to be reproduced in a future issue of your magazine for the benefit of any reader who may wish to make improvements on similar lines.

GEORGE E. OAKE.



### The Weights of Cyclecars.

Sir,—We notice that "Ixion" makes the statement that a certain cyclecar was permitted to run in both the Scottish and English Six Days' Trials which weighed well over 11 cwts. minus its passengers. As we were the only manufacturers who apparently had sufficient faith in their machines to enter them for both these trials, it is obvious that his remarks refer to us, and we must take this opportunity of pointing out that his statement is not correct.

The only report where we have seen this weight given is in *The Motor Cycle* of August 22nd, under the heading of "Weights of competing machines fully loaded with fuel, etc.," and which should also have read "with passengers." This same list gives a bicycle and sidecar as weighing 7 cwts. 2 qrs. 7 lbs., and an A.C. as weighing 8 cwts. 3 qrs. 19 lbs., and a Morgan as weighing 7 cwts. 3 qrs. 17 lbs. We should imagine that no one reading this list could have formed the conclusion that this was the unladen weight of these machines without passengers. Consequently at the time we took no steps to correct this list.

Since "Ixion" seems to doubt the possibility of our car being a cyclecar, for his information we may say that the body of this particular car was removed before the Taunton Reliability Trials, and the chassis weighed separately, when, of course, it complied with the regulations.

G.W.K., LTD.

[The chassis of the G.W.K. in the Taunton Trials weighed 5 cwts. 3 qrs. 27 lbs. It is quite true that the weights previously published included passengers, though this was not made clear to us at the time.—Ed.]

### Belt and Chain Transmission.

Sir,—I note that several of your readers are criticising my letter *re* belt drive, which you published a week or two back. One of them, Mr. Huntley, gently hints that some of my troubles were caused through bad driving. In reply to this, I would say that I have been driving a motor bicycle for the past six years, so that I hardly think I can be classed as a novice.

I do not say that all belts are bad, but what I do say is that it is all a matter of chance whether you get a good one or a bad one. For example: Early in the year I ran a certain belt 2,000 miles, half of it with a sidecar. During this time my belt only broke once. A friend of mine, using an identical belt for solo work only, used it for 880 miles, when it fell to pieces absolutely worn out.

Again, a week or two ago one of your correspondents stated that a certain belt lasted him 2,500 miles. I purchased one of these belts this summer. At the end of 900 miles the rubber began to peel off the canvas, and, after 1,300 miles, the belt pulled through with monotonous regularity. It was not worn out, it simply collapsed. A leather belt is certainly stronger and grips well in wet weather, but in muddy or dusty weather it collects the grit and grinds the pulley into a beautiful hollow shape and then the slipping begins. A leather belt is also very dirty to handle.

If you have the good fortune to get a really good rubber belt, I agree with your correspondents that it is hard to beat it, but however careful you are in your selection it is really a lottery and you "never know your luck."

E. K. WYATT.

### The Motor Cycle in Ceylon.

Sir,—I enclose photograph of my wife and self. My wife has just taken to motor cycling after having owned and driven cars for over six years, and still owns one. She declares she was less tired on her first run of twenty miles on her Douglas than had she been driving a car. Personally, this is also my experience—especially when one has to deal with bad roads one feels it less on a motor cycle as one can pick one's track.

Ambalangoda. CHAS. NORTHWAY.

### Motor Cycle Taxation.

Sir,—Enclosed please find six signatures to the protest against alteration of taxation of motor cycles. I consider you are doing all motor cyclists a great service by your valuable paper, and especially in taking up a matter of this sort. Wishing you and ourselves every success.

R. S. DARLINGTON.

Sir,—As an intending purchaser of a motor cycle and sidecar, I have pleasure in sending you herewith my signature for the petition against the proposed increased taxation of motor cycles. If the threatened tax be imposed I shall not purchase, as I do not see my way to pay such a preposterous tax. I wish you every success, as I am convinced that, should the tax be imposed, it will throw many men engaged in the trade out of employment.

R. F. BALL.

Sir,—I always doubted any benefits accruing from motor car and kindred associations, but since realising that they have provided a formula for the basis of taxation, which is like adding insult to injury, I am convinced they would be better non-existent.

I note, however, they have managed to suggest a relief scale for the taxation of old cars. May we not reasonably expect this extended to cycles, and ought not the R.A.C. and other bodies to agitate for the extension?

My own case is the owning of an old tricar, for which I gave £16, and on this, by R.A.C. formula above referred to, I am to be taxed £3 3s. per annum. Can you wonder at my dissatisfaction?

W. P. WRACK.

Sir,—It is with grave apprehension that I view any possibility of increased taxation on motor cycles.

I am a school attendance officer in a rural district and am compelled to keep a motor cycle at my own expense in order to cover the large area which comprises the district allotted to me.

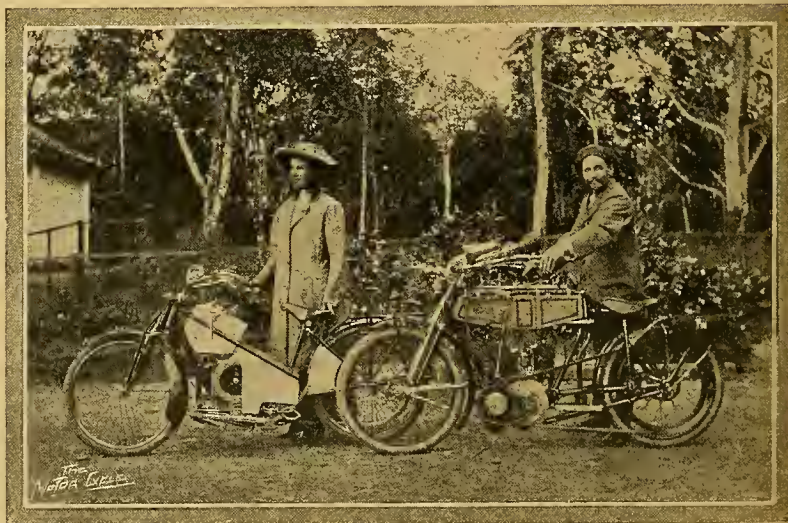
Any increase of taxation, therefore, will fall very hard on me, and, I am sure, on many others in a similar position.

CHAS. F. BAILEY.

Sir,—I am glad that this matter is now being taken up, and I sincerely hope that every motor cyclist will follow your instructions, and, as it were, stand shoulder to shoulder against the unfair tax which has been recommended to the Treasury.

In view of the valuable services rendered by motor cyclists during the recent manoeuvres, it has been proved beyond doubt that they could render useful service in actual warfare in case of invasion of this country. The Government's proposals at the present time, I consider, amount to nothing short of an intended tyrannical suppression of motor cyclists, more especially to those who, like myself, could not afford the proposed heavy tax and would perforce have to give up altogether.

STANLEY ADDISON.



Mr. and Mrs. Charles Northway, of Ambalangoda, with their Douglas and Bat motor cycles.





A LIGHT HOME-MADE RUNABOUT.

The runabout illustrated was home built by Mr. J. Mackley, a farmer of Redmill, Notts. It weighs 1½ cwt. The engine is 2½ h.p. and a two-speed gear and free engine are fitted, together with chain drive. The gear levers may be seen on the driver's right. Everything has been assembled in the village blacksmith's shop. Mr. Mackley says he can climb any hill around Redmill and can attain a speed of 20 m.p.h. on the level.

Sir,—We have much pleasure in enclosing you herewith four signatures to the petition against the iniquitous proposals *re* the new taxation of motor cyclists.

Much credit is due to you for the steps you are taking to protect motor cyclists' interests. You are apparently doing more than any of the organisations specially formed for their protection.

HOWARD AND CO.

Sir,—The other week I sent you ten signatures against the proposed increase of taxation on motor cycles. I also wrote to the M.P. for this constituency (Campbeltown), and have been promised his support any increase.

I am very pleased indeed that you are taking such a firm stand in this matter. I venture to think that had our large motor cycling organisations bestirred themselves earlier in the day, we would have heard nothing of this proposed absurd and unfair increase of tax.

Though I am not in the same position as your correspondent "J.T.J.," I am at one with him in his ideas. Personally I use a 7 h.p. Indian, weight just 2 cwt., for business purposes, my district being hilly.

Taxes of every kind are increasing every day, but if these were equitable, I think none of us (motor cyclists) would complain; it is when such as myself are called upon to pay without reason an increase of £2 3s. to our yearly revenue tax—the same tax as for a large car weighing 12 to 20 cwt. and carrying four, sometimes five, passengers—that our complaint is more than justified.

I trust you will not lay down the cudgels of war until we have gained a victory; a victory for which we ought not have been called upon to fight.

JAMES S. SMITH.

[The foregoing letters are typical of dozens we are receiving regularly on the same subject. —Ed.]

### The Date of the T.T. Race.

Sir,—On hearing, about the middle of July, that 1913 T.T. races would probably be held on 4th and 6th June, 1913, I wrote the A.C.U. and pointed out the difficulty North-country men would have in reaching the I.O.M. at that date, as the sailings from Heysham to I.O.M. do not begin until 21st June. I was informed "that the A.C.U. was entirely in the hands of the I.O.M. authorities." Then I wrote to the Chairman of the I.O.M. Highway Board, and he replied "that no application had been made to the Board for the closing of the roads on any dates next year and the dates arranged were

generally those selected by the Auto Cycle Union." That being the case, we should like to know if the races cannot be held after 21st June, as the earlier dates will prevent many North-country men making the trip to the Isle as usual, much to their disappointment. Fourteen motor cyclists in Skipton and district have expressed the same opinion, and no doubt many more in the North would agree. The journey by Liverpool would take up two more nights, which in many cases could not be spared.

R.L.

Sir,—I see in last week's *Motor Cycle* it is proposed to hold the T.T. in the middle of a week. This will be a great disappointment to many, as at that time of the year a week-end is the only holiday possible. I know many keen motor cyclists who were there this year, and look upon the few days over on the island as the jolliest-outing of the whole year, none of whom could attend in the middle of a week. I should like your readers' opinions on the matter, and, if necessary, to petition the A.C.U. before it is too late.

WEEK-ENDER.

### A Run on an 8 h.p. Cyclecar.

Sir,—I read with interest your article headed as above, and note that you refer to the "side lever which controls the free engine and the gears." In the Rollo cyclecar the free engine, or clutch mechanism is foot-operated, and only when changing the gear ratio is it necessary to take a hand off the steering wheel.

The control with one foot on the accelerator and the other on the clutch pedal and both hands free for steering, I find to be perfect, and anyone accustomed to the Zenith-Gradua gear with and without separate clutch handle will realise the advantage gained from being able to clutch and declutch independently of the gear-operating handle and without altering the gear ratio.

I do not write this in any spirit of criticism or antagonism to the Duocar, which I believe to be an excellent little vehicle of its kind.

CHAS. S. LAKE.

### To Settle a Wager.

Sir,—A few weeks ago, after an argument with a friend, a wager was made that I would not succeed in carrying six persons on a standard motor cycle for three miles; this I



An accident risked to settle a wager.

did, and afterwards I tried with seven, as the enclosed photograph depicts, and I succeeded in carrying this load (an aggregate weight of nearly half a ton) for a distance of two and a half miles without a fall on my 3½ h.p. Armstrong James, the last mile being to Stonebridge, where I delivered the load safely, demonstrating the fact that a modern motor cycle is capable of standing enormous strain.

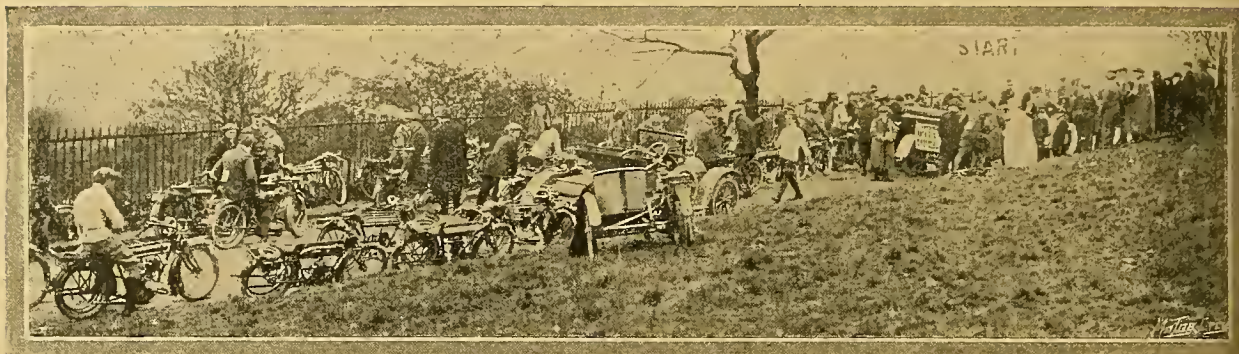
ALBERT MILNER.

Will the motor cyclist living in Sweden who wrote to G. V. Lobb, Trenault, Egloskerry, Cornwall, write again, as his address has been lost?



# HILL-CLIMB AT RIVINGTON PIKE.

Liverpool A.C.C. Event attracts Record Entry.



General view of the competitors lined up for the start, which took place on a gradient of 1 in 12.

NOT content with a matter of 208 entries, the official programme of the Liverpool Auto Cycle Club stated that further entries would be accepted. Naturally, with so many contestants, the environments of Rivington Pike, Horwich, presented an animated scene. The hill is in private grounds, and permission to hold the contest at Rivington was granted by Sir Wm. H. Lever, and the Liverpool Corporation Waterworks. When we arrived at the hill—after an ever-to-be-remembered ride through Manchester—weighing operations were in progress, and afterwards the machines were lined up in systematic order for inspection by the judge, Mr. T. W. Loughborough, whose onerous duties were rendered more simple by the peculiar absence of restrictions governing the machines.

Some of the entrants considered the surface of the hill very rough, others were shy of the two gradual bends, the last of which was the most difficult to negotiate, but really we could see little to cavil at, seeing that straight hills with billiard table surfaces are non-existent. The course was about five-eighths of a mile. It was one o'clock when a start was made. Messrs F. Sellars and Percy Butler officiated at the start. The latter's duty was to hold the telephone receiver, and his "Get ready," "Go," were heard by the timekeeper at the summit, who started the watch. A standing start was made, helpers being allowed, and they were wanted too! for the gradient on the starting line was about 1 in 12, and the engines were not allowed to be started beforehand.

## The Single and Twin Lightweights Separated.

Single and twin-cylinder lightweights had separate classes allotted to them. F. G. Edmond led off the ball, his 2 h.p. Humber picking up splendidly. Dudley (Hobart) and Barnes (Zenith) followed in quick succession. Williams (A.J.S.) made a quick start on his low gear, but it was left to J. Cocker (2½ Singer) to accomplish the fastest climb. Barnes, who was only ½s. slower, easily scored on account of his heavy weight. The result was:

### CLASS I.—SINGLE-CYLINDER MACHINES UP TO 350 C.C. ON FORMULA.

	Time.
1. F. W. Barnes (2½ Zenith) ... ..	64s.
2. J. Cocker (2½ Singer) ... ..	63½s.
3. F. G. Edmond (2 Humber) ... ..	73½s.

The twin lightweights were very little faster, only F. S. Whitworth (Douglas) beating Cocker's time. Smytheman, on another Colmore-Douglas—a brand new machine out of stock, so we were told—was second fastest. The twin Humber was single-geared and appeared slow in picking up. Phillpott's was the fastest of the team.

### CLASS II.—TWIN-CYLINDER MACHINES UP TO 350 C.C. ON FORMULA.

1. F. S. Whitworth (2½ Colmore-Douglas) ...	61s.
2. H. Smytheman (2½ Colmore-Douglas) ...	63½s.
3. J. Haslam (Douglas) ... ..	64s.

The class for single-cylinder machines over 351 c.c. drew most entries. Of the outstanding performances, W. E. Cook on a touring model A.S.L. struck one as travelling splendidly. D. Bradbury (Norton) was also fine. H. C. Newman (Ivy-Precision) made a splendid start and finished well, and his remained the fastest ascent until P. Weatherilt came along. He accelerated in splendid style, thanks to his Gradua gear. The hill and conditions just suited such a device. Weatherilt was easily fastest in this class. His Zenith had a J.A.P. 90 × 77.5 mm. engine with overhead valves. L. Newey (Ariel) appeared very fast, likewise E. V. Stevens (Dot), R. G. Mundy (Rudge), Axford (Martin), and McMinnies (Triumph). The last-mentioned was using the experimental Triumph with overhead inlet valve. Tolfree (Bat-Jap) trailed his silencer for several hundred yards. P. Pumphrey (Arno) ran very close at the top end. Bottoms, an amateur on a T.T. Triumph, took 57s. only, and would have done better had not his cap dropped over his eyes, causing him to wobble badly. H. Gibson (Bradbury) appeared to be bumped about more than anyone by the surface; we ascribed it to the tyres being inflated too hard. The results on formula are given below, also the times of the leaders.

### CLASS III.—SINGLE-CYLINDER MACHINES OVER 351 C.C. ON FORMULA.

	Time.
1. P. Weatherilt (3½ Zenith) ... ..	53½s.
2. W. G. McMinnies (3½ Triumph) ... ..	55½s.
3. S. R. Axford (3½ Martin-Jap) ... ..	59s.



S. W. Phillpott (2½ h.p. Humber), the hon. secretary of the club, on the starting line. On the left the starters, Messrs. Sellars and Butler, are seen at the telephone.



## Hill-climb at Rivington Pike.—

## A Lucky Escape.

The twins over 501 c.c. made light work of the hill. The first up, F. Shakespeare (7 Rex-Jap), gave everybody a fright. Travelling at about 50 m.p.h. he ran wide at the top bend, and headed straight for a spectator on the left-hand footpath. The latter became nervous and jumped into the roadway, seeing Shakespeare's frantic wobbles, but the rider recovered and charged him, both falling heavily, though providentially there were no bones broken. The machine, strangely enough, continued its mad career, and the sight of it running across the road riderless was most uncanny. It finally charged the bank and buckled the front wheel. J. J. Cookson (Matchless) followed, and as the crowd had not quite cleared off the road he was signalled to stop, but did not heed the warning, and actually made second fastest time of the day. H. Reed (8 Dot-Jap) had a narrow escape at the top bend, riding in the gutter with the valve lifter raised for nearly fifty yards. Nevertheless he clocked 48s., which is surely a record for this hill. Reed was entered in other classes, but wisely requested his time to count throughout after that thrilling incident.

## CLASS V.—TWIN-CYLINDER MACHINES OVER 501 C.C. ON FORMULA.

	Time.
1. J. J. Cookson (8 Matchless-Jap) ...	48½s.
2. J. L. Timperley (5 Dot) ...	52½s.
3. H. Reed (8 Dot-Jap) ...	48s.

Best amateur performance: J. H. Fox (7 Matchless).

Best performance of local rider: E. F. Baxter (6 Rex).

## The T.T. Machines.

The Junior and Senior T.T. machines were again divided. In the former section Whitworth again scored a notable success, his little Douglas, with valve springs of the Colmore tension, simply roared up the incline. He was backed up by Smytheman and Haslam, Cocker tying with Haslam in order of speed, Weatherilt coming next.

In the Senior T.T. class Weatherilt improved his previous time by ½s., whilst Newman went 3s. better. Tolfree made a fine ascent in 58s., as also Mundy on a Rudge. Bottoms fell at the corner whilst travelling at over 40 m.p.h., but escaped luckily. Sheldon's Regal-Precision shone conspicuously, and Horsman's 3½ h.p. Singer was another fleet hill-climber.

## CLASS VII.—SENIOR T.T. MACHINES ON TIME.

	Time.
1. P. Weatherilt (3½ Zenith) ...	52½s.
2. H. C. Newman (3½ Ivy) ...	54s.
3. W. N. Sheldon (3½ Regal-Precision) ...	57s.
4. V. E. Horsman (3½ Singer) ...	57½s.
5. { R. G. Mundy (3½ Rudge) ...	58s.
{ P. E. Tolfree (3½ Bat-Jap) ...	

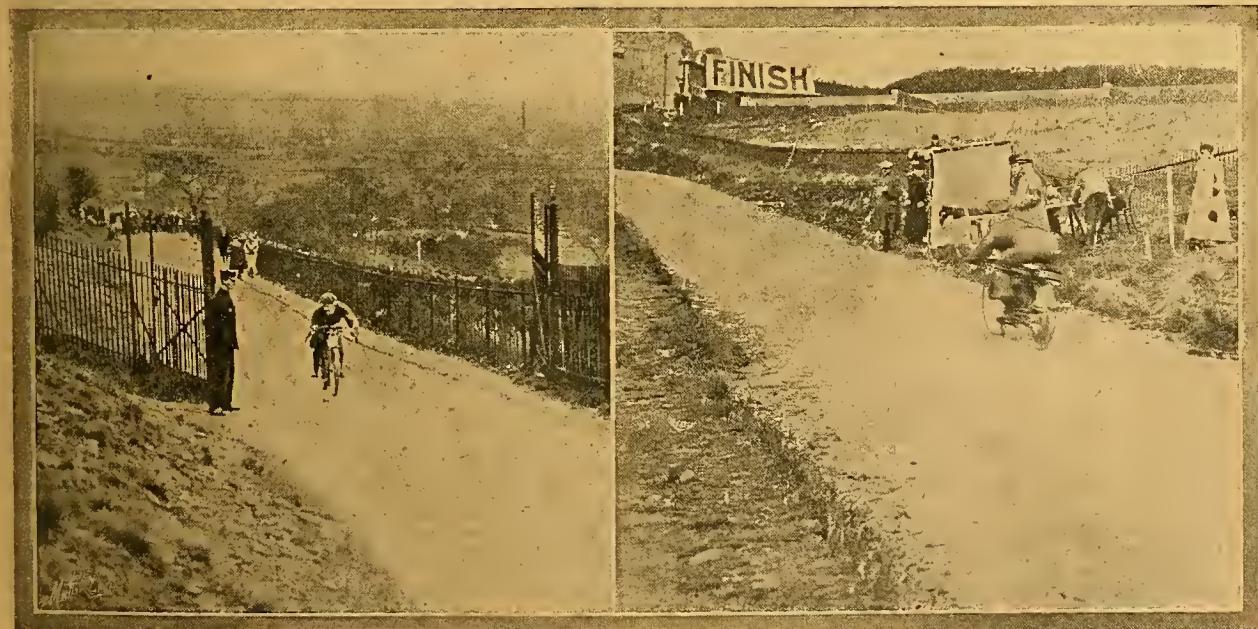
Class VIII., for any machine, on time, consisted of a mixture of the previous runners. Several were slower than formerly, including Cookson, Bradbury, Newman, McMinnies, and Mogridge, proving that a second or third attempt does not always mean a faster climb. No one even approached Reed's wonderful speed. Result:

## CLASS VIII.—ANY MACHINE, ON TIME.

	Time.
1. H. Reed (8 Dot-Jap) ...	48s.
2. P. Weatherilt (3½ Zenith-Gradua) ...	52s.
3. J. J. Cookson (7 Matchless) ...	53s.
4. J. F. Sirett (7 Indian) ...	54s.
5. H. C. Newman (3½ Ivy-Precision) ...	55½s.
6. N. H. Brown (7 Indian) ...	56½s.

## Fixed Gears in the Restarting Test.

The stopping and re-starting test was run in two classes, first on time and then on formula. Consequently some of the competitors' faces were becoming rather too familiar and the proceedings too long drawn out. In this class there was no stipulation as to variable gears, consequently the crowd of spectators were treated to the interesting sight of motor cyclists struggling to start big twins and high compression singles on a gradient. Some succeeded, notably Cookson, who, after an almost superhuman effort, got his 8 h.p. fixed-gear Matchless off the mark and picked up in wonderful fashion. He was easily fastest. One or two others tried to restart single-gear machines, but almost collapsed with exhaustion and gave up. Surely a restarting test was never intended for any but variably geared machines. Barnes and Weatherilt on their Zenith-Graduas stopped promptly and got away without leaving the saddles—really impressive performances which were, however, overshadowed by muscular men who knew how to handle their machines. Whitworth (Douglas) pushed off on the low gear, and in stepping on the footrest half of it broke away, letting him down and tearing a rent in his pants. Marston (8 h.p. two-speed Dot-Jap) restarted without dismounting, and he succeeded in making



V. E. Horsman (3½ h.p. Singer) 100 yards from the start.

H. V. Smytheman (2½ h.p. Douglas) nearing the timekeeper's tent.





H. C. Marston (3 h.p. two-speed Dot-Jap) stopping between the lines, in the stopping and restarting test. All the variable-g geared machines were actually beaten for speed by a rider of an 3 h.p. fixed geared mount.

the fastest ascent in the formula class. E. Longden drove a sidecar, a sporting terrier on board heralding his approach.

#### CLASS IX.—STOPPING AND RESTARTING TEST ON TIME.

	Time.
1. J. J. Cookson (7 Matchless) ...	62s.
2. F. W. Barnes (8 Zenith) ...	62½s.
3. P. Weatherill (3½ Zenith) ...	63½s.

#### CLASS X.—STOPPING AND RESTARTING TEST ON FORMULA.

	Time.
1. F. W. Barnes (2½ Zenith) ...	76½s.
2. G. Griffiths (3½ Zenith) ...	73½s.
3. J. Haslam (2½ Douglas) ...	77s.

Best amateur performance: H. D. Ashworth (3½ Triumph). Time, 76½s.

Best performance by local rider: A. J. Jenkins (2½ Douglas). Time, 86½s.

#### The Sidecar Classes.

Sidecars were again split up into singles and twins, but there was a sad lack of idea as to the definition of a touring sidecar. Most were baby carriages in the single-cylinder class, several were devoid of springs, and a mudguard was practically unknown. Moreover, one competitor actually carried a baby as passenger.

#### CLASS XI.—SINGLE-CYLINDER SIDECARS ON FORMULA.

	Time.
1. K. H. Clark (3½ Corah-Jap) ...	76½s.
2. H. Bottoms (3½ Triumph) ...	78½s.
3. H. C. Newman (3½ Ivy-Precision) ...	78s.

Best amateur performance: H. Taylor (3½ Bradbury). Time, 74½s.

Best local performance: F. Rees (3½ Rudge). Time, 117½s.

In the twin class matters were somewhat improved, but it was thought that the limit had been reached when a Douglas rider brought a box—more like a coffin than anything else—without springs or upholstery and with a cardboard cover.

#### CLASS XII.—TWIN-CYLINDER SIDECARS ON FORMULA.

	Time.
1. F. W. Barnes (8 Zenith) ...	58½s.
2. A. J. Stevens (5 A.J.S.) ...	71½s.
3. E. Longden (8 Dot-Jap) ...	88½s.

Best amateur performance: A. J. Brewin (8 Zenith). Time, 95½s.

Best local performance: A. J. Jenkins (8 Williamson). Time, 104s.

The contest was smartly run off, and but for the absence of rules governing equipment in the touring classes, can be regarded as a very successful event. The many officials worked with a will, Mr. Phillpott in particular; also Messrs. C. Hobbs and E. F. Baxter, who worked out the formula results.

The formula recommended by *The Motor Cycle*  $\frac{C \times T^2}{W}$

was used.

#### PROPOSED AMATEUR MOTOR CYCLISTS' ASSOCIATION.

A meeting was held at 89, Pall Mall, London, S.W., on Wednesday, the 16th inst., further to consider the formation of a Motor Cyclists' Association, restricted to ladies and gentlemen fulfilling the amateur definition as recently fully explained in *The Motor Cycle*.

Mr. H. P. Harding (in the chair) was supported by Mr. C. C. Cooke. Mr. A. G. Reynolds, one of the promoters of the scheme, was unavoidably absent, but there were also present several well-known motor cyclists.

The Chairman read several letters from interested motor cyclists promising support to the scheme, and he also announced that he had received promises of support from a number of amateur riders.

The meeting discussed at length the proposed definition of an amateur, and two or three slight alterations were made.

The promoters of the proposed body wish it to be clearly understood that it is in no way intended to compete with any other club or body, it being their sole intention to bring together a body of motor cyclists whose ideas are in agreement with the scheme, and who will support a national motor cyclists' movement on the lines of the definition for the furtherance of the sport.

It was eventually decided to hold another meeting at an early date, the date and place of which will be announced later, when all interested motor cyclists will be invited to attend.



# 67 Miles 782 Yards in 60 minutes on a 3½ h.p.

A CHAT WITH G. E. STANLEY, THE HOUR RECORD HOLDER.

PROBABLY the most important record of the long list and the one most coveted is the 500 c.c. single-cylinder hour record. The list of previous holders only gives some idea of its importance, seeing that many have tried but failed, and even the present holder did not annex the record at the first time of asking. G. E. Stanley has undoubtedly placed himself in the very front rank of track riders by this latest achievement of 67 miles 782 yards on a 3½ h.p. 85 × 88 mm. Singer, and last week we sought him in order to obtain a few experiences, though Stanley is very reticent. He experienced lubrication trouble and a puncture in the hour race for *The Motor Cycle Cup* on the 12th inst., and returning to Coventry he spent Monday making finishing touches, setting off for Brooklands on Tuesday. After a lap he waited until the late afternoon before making his attempt. Timed by Mr. A. V. Ebbelwhite, his first lap from a standing start was at 64 m.p.h., which he has improved upon, but the next lap averaged over 70 m.p.h., and Stanley managed to maintain this speed for lap after lap. He was using a 3¼ to 1 gear, so that his engine was "revving" at approximately 3,400 r.p.m. The record ride was practically devoid of incident; he experienced no trouble till the last lap of all. The Singer engine continued to pull magnificently without the slightest variation. Stanley had no fear as regards his petrol consumption, for he is no believer in huge jets. He uses a 1¾ gallon tank, and usually averages about sixty miles to the gallon, his B. and B. carburetter being unfaked in any way. Fifty miles were reeled off at an average speed of 69.439 m.p.h. The jolting at this speed will be best understood by Brooklands habitués. To those who do not know the effort required to keep in the saddle on a 3½ h.p. single at nearly 70 m.p.h., we would say that a twin at 80 n.p.h. is to be preferred. The back wheel of a

3½ h.p. machine is constantly bumped clear of the ground, and the effect upon the rider can be very easily imagined.

It was nearly dusk when Stanley finished, but the exhaust pipe was not glowing as some do, which speaks well for the condition of his engine. There was every likelihood of the record being placed in a safe position for a long time to come when Stanley com-

menced his last lap, but on this final stage, at the end of the railway straight, the inlet valve—which was not new—broke at the cotter hole. The engine continued to fire intermittently, the valve working automatically, but Stanley had to assist his machine along to the finishing line by paddling with his feet. This one and only *contretemps* reduced the record to 67 miles 782 yards, but in Stanley's opinion it may not remain there long. By next spring he considers that over 70 m.p.h. in the hour will be possible with a 500 c.c. single-cylinder.

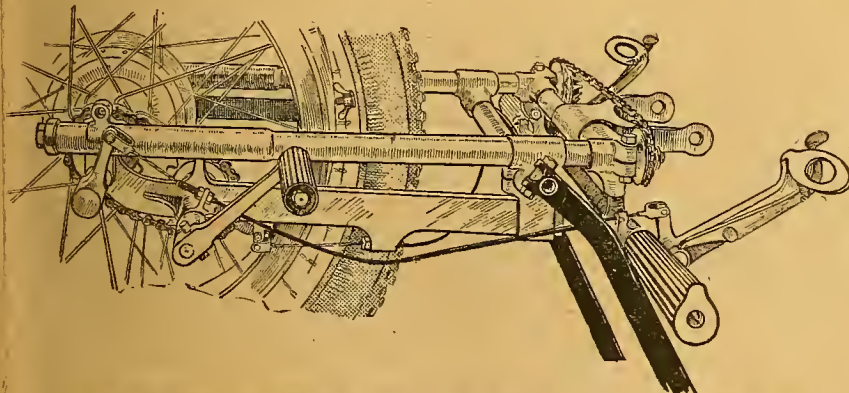
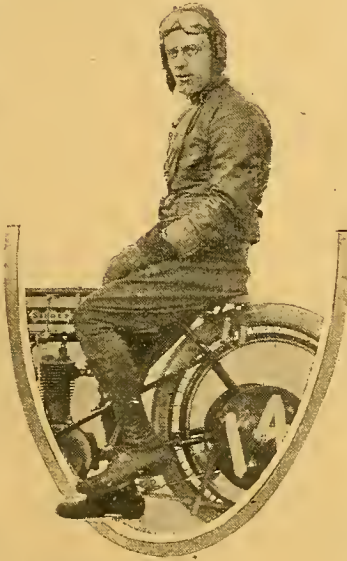
Of course, luck must be with the rider as Stanley explained. He mentioned, also, how quite simple details, often ignored by the ordinary rider, such as the tension of the belt, made several seconds difference in the lap speed.

By the way, a dinner was arranged by the Singer Motor Co., Ltd., at the Queen's Hotel, Coventry, last evening to celebrate Stanley's success.

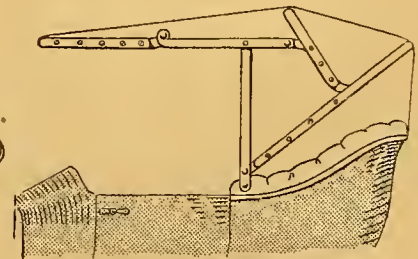
## Hour Record Holders.

A review of past records in the 500 c.c. class is interesting as showing the progress in engine design and machine construction during the last few years:

	mls.	yds.	
O. C. Godfrey (Rex) ...	59	1,350	Nov. 24, 1909
W. F. Newsome (Triumph) ...	59	1,478	Apr. 29, 1911
V. J. Surridge (Rudge) ...	60	783	May 25, 1911
J. R. Haswell (Triumph) ...	63	194	Aug. 26, 1911
W. Stanhope Spencer (Rudge) ...	65	803	Oct. 3, 1911
G. E. Stanley (Singer) ...	67	782	Oct. 15, 1912



Details of the kick-starter and hub plate clutch operated by a pedal and Bowden wire on the 1913 Zenith. See page 1213



## A HOOD FOR SIDECARS.

This latest example of sidecar hoods is of smart appearance, rigid and easily manipulated. The upright main stay allows a clear entrance to the sidecar seat. The Dulwich Hood and Screen Co. are the makers.



# OPPOSING THE NEW TAXES.

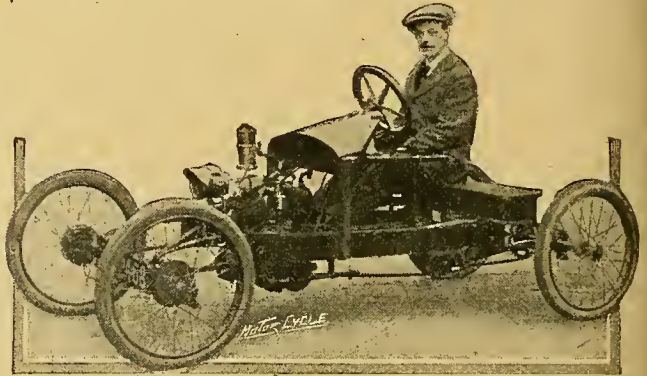
More Signatures Wanted. Further Petition Forms with this Issue.

**A**LTHOUGH we have received many thousands of signatures to the petition which we circulated on the 3rd inst., many more are required if motor cyclists do not want to be saddled with a burden in the shape of greatly increased taxes next year. As the Auto Cycle Union meeting to consider the question of taxation of motor cycles is not until the 30th inst., we have decided to reprint the petition form, and one of these forms will be found in every newsagents' copy of *The Motor Cycle* this week. Nothing whatever has been done so far by the Treasury to calm the minds of motor cyclists with regard to the iniquitous proposal of the Taxation Committee to tax motor cycles on the motor car basis, *i.e.*, on the bore only, but the Treasury has issued a draft of new regulations which are to come into force on January 1st next. These follow the recommendations of the Committee on the Horse-power Rating of Motor Cars, but not a word has been said about the injustice of the proposal to tax such a motor cycle as the one described in the current issue, and which has a cylindrical capacity of 750 c.c., £1, and the smooth-running four-cylinder F.N. by the same rule £3 3s. The total cubical capacity of the F.N. is 494 c.c. We have given other examples of the gross injustices of the recommendation week by week, and we want to show the Lords of the Treasury the opinions of motor cyclists generally on the subject.

A number of readers have addressed a copy of the letter we attached to the petition form to their respective Parliamentary representatives, and in many instances replies have been received from the members in question, stating that they have noted the arguments and will endeavour to prevent motor cyclists being unduly

taxed. We trust they will keep their promises, and that the Treasury will carefully consider our petition when it is presented.

Club secretaries, employers of men engaged directly or indirectly in the motor cycle trade, should do their best to obtain further signatures. Thousands of workmen will suffer if the proposed new taxes become law, for it will mean a direct blow to the motor cycle industry. All who may be affected should make a point of signing the petition. Those readers who are considering the purchase of a motor cycle and cannot afford a £3 3s. tax should also sign the forms. United action must be taken without delay if the petition is to succeed.



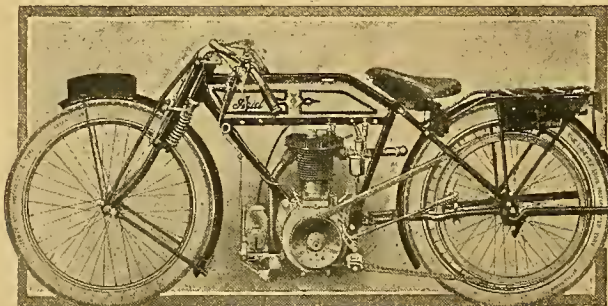
The latest Gillyard cyclecar on which W. Gillyard won the P. and M. Cup and Gold Medal at the Bradford M.C.C. Hill Climb. This model has wood side members with springs in one piece from both axles, 8 h.p. engine, three-speed gear box, chain drive to one rear wheel, the other wheel being loose on the axle. The weight of the chassis is 4½ cwt., and the complete vehicle 6 cwt. The makers tell us that the machine is not so fast as a motor bicycle and sidecar; the four wheeler, however, has an advantage in the increased comfort of the springing.

## 1913 ARIELS.

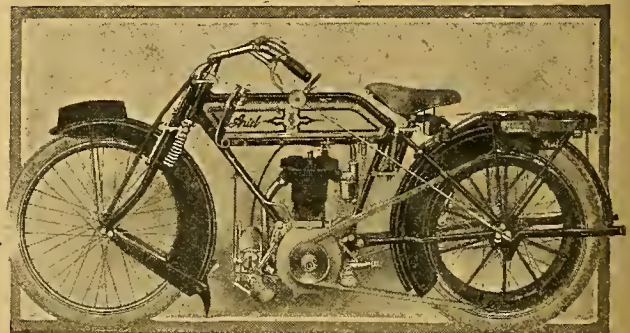
A 6 h.p. Twin. Kick-starter on the 3½ h.p.'s.

Three types of Ariel motor cycles will be marketed in 1913. The 3½ h.p. roadster type will be obtainable in three models, the T.T. racer in two models, and an addition to the ranks is a 6 h.p. twin cylinder with two-speed gear, free engine and chain drive, which should appeal to sidecarists. The bicycles will be supplied with free engines and three-speed gears. In addition to the well-tried Ariel decompressor, the

three-speeders will have a new kick-starter, enabling the engine to be started with the wheels on the ground. The frame has been redesigned and the wheelbase lengthened. A new front fork is also fitted, as well as oil-retaining and wet-proof hubs. The magneto is now controlled by a handle-bar lever. The front foot-rests are adjustable, and will be made in two lengths.



T.T. model Ariel for next year.



1913 model 3½ h.p. Ariel with kick-starter, three-speed gear and sprung saddle-pillar. The wheelbase has been lengthened.





The winning team to the A.C.U. East Midlands contest last Saturday, described on page 1213. The riders are G. W. Spencer, J. D. Mitchell, and J. Farnworth all on Rovers.

## ENTRIES FOR THE AUTUMN ONE DAY TRIAL.

Below we give the entries for the A.C.U. Autumn Trial, which starts from Kendal on Saturday next, the 26th inst.:

### MOTOR BICYCLE CLASS.

Rider and machine.	Rider and machine
G. T. Newsome (3½ Rover)	S. T. Tesser (5 Bat)
D. H. Noble (3½ Rover)	V. Busby (3½ Alldays)
V. E. Horsman (3½ Singer)	A. J. Moffat (3½ Zenith)
A. H. Alexander (7 Indian)	L. Newry (3½ Ariel)
J. R. Alexander (7 Indian)	F. C. North (3½ Ariel)
H. J. Beal (3 N.S.U.)	F. H. Thornton (4 Swan)
J. D. Nixon (3½ Rudge)	H. Ball (3½ Triumph)
G. B. Bennison (3½ V.D.)	J. H. Kerr (6 N.S.U.)
G. N. Norris (3 New Imperial)	Mrs. M. Hardee (3½ P. and M.)
J. Andrew (4½ New Imperial)	G. D. Hardee (3½ Triumph)
T. C. Delahey (2½ Sunbeam)	T. J. Ross (3½ Triumph)
J. E. Gieswood (2½ Sunbeam)	V. D. Walker (3½ Rudge)
A. H. Ratcliff (3½ B.S.A.)	C. Lester (3½ P. and M.)
P. N. Gilbanks (3½ Douglas)	W. Pratt (3½ P. and M.)
O. W. Braithwaite (3½ Rudge)	V. Shaw (3½ P. and M.)
E. Walker (4½ Monarch)	J. Oliphant (3½ Premier)
V. Underhill (3½ Monarch)	S. A. Rowlandson (3½ Rudge)
E. A. Wilson (3½ New Hudson)	G. T. Gray (3½ Rudge)
H. C. Wilkins (3½ P. and M.)	H. Harrison (3½ Rudge)
E. C. Clow (6 Zenith)	S. Crawley (3½ Triumph)
H. Reed (8 Dor)	R. R. Rothwell (2½ Douglas)
R. Rhodes (3½ Wulfruno)	J. Pass (6 Clyde)
L. Pennington (2½ A.J.S.)	

### PASSENGER CLASS.

G. G. Mundy (8 G.W.K.)	J. Chater-Lea, jun. (8 Chater-Lea and sc.)
H. F. S. Morgan (8 Morgan runabout)	F. Smith (5-6 Clyno and sc.)
Sam Wright (8 Humberette)	C. M. Keiller (8 G.W.K.)
A. G. Eames (5-6 A.C. Sociable)	J. T. Wood (8 G.W.K.)
H. C. Mandy (5-6 A.C. Sociable)	F. J. Fisher (8 Chater-Lea and sc.)
H. G. Dixon (3½ New Hudson and sc.)	W. D. South (5 Rudge and sc.)

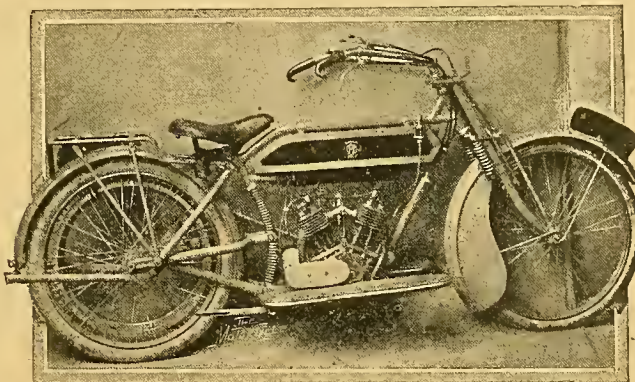


## RUDGE CYCLECAR EXPERIMENTS.

In his speech to the shareholders of Rudge-Whitworth, Ltd., on Monday last, the chairman and managing director, Mr. C. Vernon Pugh, referring to the Rudge cyclecar, said they were engaged on experiments on what might prove, and he hoped would prove, to be an exceedingly important departure—a Rudge cyclecar. In this they were strictly confining themselves to motor cycle methods and making it a real cyclecar, and not in any sense a motor car. They had every reason to believe that they would be able to exhibit a standardised model at the Olympia Show in November, and it was his own belief, from what he had seen of the experiments so far, that they would have an exceedingly good cyclecar to offer in the name of Rudge-Whitworth, and one that would do the firm the very greatest credit.

## THE LATEST P.V. SPRING FRAME.

The illustration shows the latest model 3½ h.p. twin-cylinder P.V. It will be noticed that the mud-guard is provided with an ample extension, and that the new 3½ h.p. twin-cylinder J.A.P. engine, 60 ×



3½ h.p. spring frame P.V.

76 mm., is fitted. As our readers are aware, the chief speciality of this machine is the ingenious form of springing which has been referred to on previous occasions in our pages. Messrs. Seale and de Becker, 162, Great Portland Square, specialise in twin-cylinder machines, the other models being the 4-5 h.p. 70 × 71 mm. and the 5-6 h.p. 76 × 85 mm.

## THE DOUGLAS CYCLECAR.

Last week we referred to the fact that Messrs. Douglas Bros. were experimenting with cyclecars. We are now able to illustrate the first model, which, of course, is propelled by a twin-cylinder horizontal engine.



## CURRENT CHAT.



## TIME TO LIGHT LAMPS.

Oct. 24th	...	5.48 p.m.
" 26th	...	5.44 "
" 28th	...	5.40 "
" 30th	...	5.36 "

## Four up Sunrising on a Cyclecar.

A Humberette carried four passengers up Sunrising Hill last Saturday. Sam Wright was at the wheel.

## The New Four-cylinder F.N.

The information we published concerning the 1913 model four-cylinder F.N. was too premature, and there is a slight inaccuracy in the preliminary announcement. Complete details will be published shortly.

## A New Appointment.

Mr. H. Belcher has resigned his position as sales manager to Messrs. Humber, Ltd., to join the firm of A. R. Atkey, Ltd., Nottingham. This firm does an enormous business in South Africa, importing motor cycles and accessories. We wish Mr. Belcher every success.

## Cyclecar Examiner.

The Show Management Committee of the Motor Cycle Manufacturers' Union have appointed Professor Sharp Wh.Sc., A.M.I.C.E., M.I.A.E., etc., examiner of cyclecars to be exhibited at the forthcoming Olympia Motor Cycle Show, to ascertain that such cyclecars conform to the definition as per regulations.

## Touring France and Switzerland on a Lightweight.

Greame Fenton, who competed successfully in the Gaillon hill-climb, is now making a tour with the same Clément-Enfield machine through Switzerland and France. Among the places he will touch are Besançon, Geneva, Grenoble, Marseilles, Lyons, Dijon, etc., returning to Paris next month. Incidentally, Mr. Fenton tells us that he climbed Gaillon Hill with sidecar and passenger, the total weight being 4 cwt. 2 qrs. 24 lbs., which is distinctly good for a 2½ h.p. twin lightweight.

## Racing at Brooklands.

The extra monthly meeting, which will be held on November 9th, will include the following races:

1. The Fourth 1912 Time Trials.
2. The Cyclecar Olympic Hour Race.
3. The Sidecar Olympic Hour Race. (2 and 3 will be run together.)
4. Three Lap 500 c.c. Race.
5. The Junior Olympic Hour Race. (For machines under 350 c.c.)
6. Three Lap 1,000 c.c. Race.
7. The Senior Olympic Hour Race. (For machines under 500 c.c.)

The entries close on Saturday, November 2nd.

## The Hour Record.

F. H. Arnott is now the head of the Rudge-Whitworth racing stable, and we hear that a squad of Rudge testers is now at Brooklands preparing to recapture the single-cylinder hour record.

## Awards Confirmed.

Hugh Gibson (3½ Bradbury and sc.) has now been officially declared winner of the P. J. Evans rose bowl, offered in the passenger class of the Birmingham M.C.C. twenty-four hours' trial. R. G. Mundy (Rudge) won the cup in the solo class.

## Hill Climbing.

F. J. Watson writes that he successfully climbed Arms Hill, Henley-on-Thames, at the beginning of the week on his 3½ h.p. Swift with sidecar and passenger. The machine was in full touring trim, and the total weight of machine and passengers was 568 lbs. The gear used was a Sturmey-Archer, the lowest ratio being 13 to 1.

## More Taxation Crudities.

It is worthy of notice that the new Rudge sidecar machine, which has an engine of 750 c.c., owing to its long stroke, will come within the £1 limit, though with sidecar it may turn the scale at 4½ cwt. The Martin-Jap racer, however, a machine which weighs 150 lbs. and has a capacity of 493 c.c., will necessitate a payment of three guineas. Thus we see the absolute unfairness of the proposals without having to make comparisons between motor cycles and cars or carts. We should very much like to know what qualifications the committee which made these proposals had to legislate for motor cyclists. A simple explanation of the recommendations is in itself a condemnation.

We urge every reader to sign the petition form in this issue.

## SPECIAL FEATURES:

LATEST LOW FORCED INDUCTION ENGINE.

1913 MODEL S (Illustrated.)

HILL-CLIMB AT RIVINGTON PIKE.

## Definition of a Cyclecar Chassis.

The Show Committee of the Motor Cycle Manufacturers' Union have decided that a chassis shall comprise complete transmission, tyres, bonnet, radiator (if any) and tank. Mudguards and footboards (if any) need not be included when the chassis is being weighed. The maximum chassis weight must not exceed 6 cwt.

## Stolen Motor Cycles.

A 1911 Triumph, of which the following is a description, was hired from King and Harper, Bridge Street, Cambridge, on the 16th inst. and has not been returned. The hirer gave the name of Cecil Thompson, Christ's College, which name and address prove to be false. The registration number is CE 1633, engine number 16305, and frame 169827.

A T.T. B.S.A., BO 756, has been stolen from a Cardiff member of the A.A.

A 1912 Motosacoche, engine No. MV 23581, frame No. A 4735, was recently stolen from the Penzance Garage, Ltd., 69a, Market Jew Street, Penzance.

A T.T. Triumph roadster was stolen on the 19th inst. from outside a shop in Northampton. The engine number is 13704 and the registration NH 631. There was not enough petrol in the tank to travel a mile, and when the machine was taken it was too late to purchase any, being after 11 p.m. Possibly some Northampton motor cyclist supplied the necessary fuel, in which case he may be able to give the owner, Mr. J. Lees, 44, Bridge Street, Northampton, some information.

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### The Amateur Question.

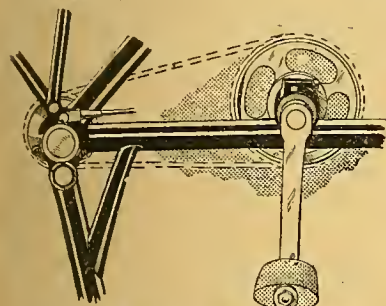
The Auto Cycle Union conference on the amateur question will be held on Friday, October 25th, at the headquarters of the Mersey Motor Club, St. George's Restaurant, Redcross Street, Liverpool.

### Olympia Motor Cycle Show.

*Bona fide* members of clubs may obtain an admission ticket to the Olympia Motor Cycle Show at half-price if applied for through their secretaries in quantities of not less than six.

£69,949 17s. 3d. Profit.

The above sum represents the profits of the Triumph Cycle Co., Ltd., during the year ended August 31st last. 20% dividend and a bonus of 2s. per share is being paid on the ordinary shares, and 6½% on the preference shares. A magnificent result!



Kick starter fitted to 1913 Humber 31 h.p. three-speed models (see page 1199.)

### The Stanley-Bailey Match.

Matters have not progressed in the matter of arrangements for the Stanley-Bailey match. Bailey is said to be the stumbling-block. It appears that he has been told that Stanley has a four valve 350 c.c. engine ready for the match, and he objects to this new type of engine. Stanley, however, assures us that he has no such engine, although he admits having prepared a new 350 c.c. engine with overhead valves, which is according to the agreement.

### An Air-cooled Exhaust Valve.

An exhaust valve of novel construction was shown to us a few days ago by Mr. de Lissa. This valve, which was fitted to a Motosacoche engine 64 x 90 mm., had the following advantages: (1.) It was air-cooled, having quite a large surface exposed to the air instead of being situated in the midst of the hot gases, with the result that it did not become pitted and require grinding. (2.) Owing to its construction it did not require to be forced open by the cam against the pressure in the engine, but only against its spring, thus allowing the engine to turn over extremely fast. Mr. de Lissa informed us that a speed of 5,450 revs. per minute had been attained, which gives an average piston speed of 3,225 feet per minute. We saw the engine running on the stand at a very high rate; so fast, indeed, that it sounded like the buzz of a twin-cylinder. The valve has two faces, and one might suppose that it would be a difficult matter to keep it gas-tight in consequence, but this is not the case, as it automatically fits itself to its seating, and we never met with better compression on any engine, large or small. This valve can be easily fitted to any engine which has a cap over the exhaust valve.

## FUTURE EVENTS

Oct.	25.—A.C.U. Conference on the "Amateur" Question at Liverpool.
"	26.—A.C.U. Autumn Open One Day Trial.
Nov.	8-16.—MOTOR CAR SHOW AT OLYMPIA.
"	25-30.—MOTOR CYCLE SHOW AT OLYMPIA.
Dec.	.. —Auto Cycle Union Open Silencer Trial.
"	27-28.—Motor Cycling Club Annual Winter Run.

### The Dutch-English Trial.

The above successful competition, which will be held next year in England, probably on August Bank Holiday, will be organised by the Auto Cycle Union. The actual organisation has been referred to the Competitions Sub-committee. Dutch motor cyclists are very keen and excellent sportsmen.

### The Low Engine.

The forced induction engine invented by Dr. Low, and described and illustrated in this issue, is said to give 10-15 h.p., although only 70 x 130 mm. The design is not at all displeasing to the eye; in fact, with one or two exceptions the casual observer would take it for an ordinary water-cooled petrol engine.

### What is a Cyclecar?

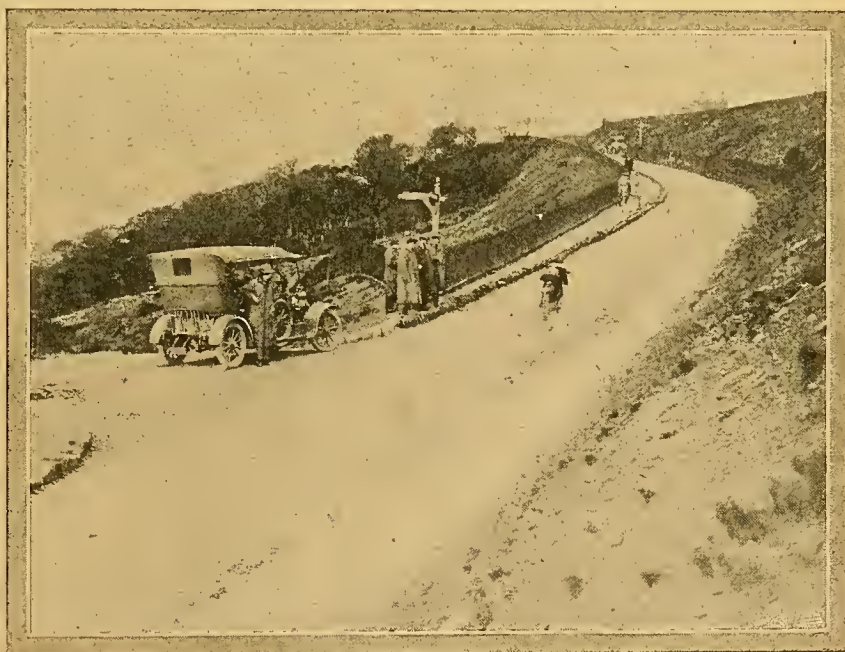
An attempt has been made to keep the Singer cyclecar out of the Olympia Motor Cycle Show because it is designed on car lines, but the photograph reproduced in our last issue showing its small dimensions has, we believe, put an end to the movement.

### Next Saturday in the Lake District.

Mr. T. W. Loughborough, the A.C.U. secretary, rode round the One Day Trial course last Monday astride a two-speed Douglas. He also made the necessary hotel arrangements, including the usual cup of tea provided by *The Motor Cycle*. Kendal is the starting and finishing point, and one may expect Red Bank, Grasmere, and Kirkstone Pass to be included in the course. There are other noted acclivities in the neighbourhood, Tow Top for instance, the Lake District providing a really excellent testing ground just before the shows.

### Lighting Byelaws.

A few weeks ago we were advised by a reader that he had been summoned under a byelaw existing in one of the Welsh counties for not carrying two lights showing the full width of a sidecar combination. We have endeavoured to obtain particulars of these byelaws both from the Local Government Board and the Home Office, but without success. The last communication we have received is from the Under Secretary of State, who advises us that he was directed by the Secretary of State to say that he has no knowledge of any byelaw such as we mention. If no such byelaw exists anywhere in the United Kingdom, how is it that the motor cyclist in question was summoned under it, convicted, and fined? Perhaps readers who live in the county or counties in which these byelaws exist will acquaint us with the wording and the date upon which they were sanctioned, as we wish to publish information respecting them for the benefit of those readers who may happen to be passing through the counties in question with their motor cycles and sidecars, and who apparently cannot become acquainted with the facts of any such byelaws being in existence except from those who are locally acquainted with them.



RIVINGTON PIKE, HORWICH.

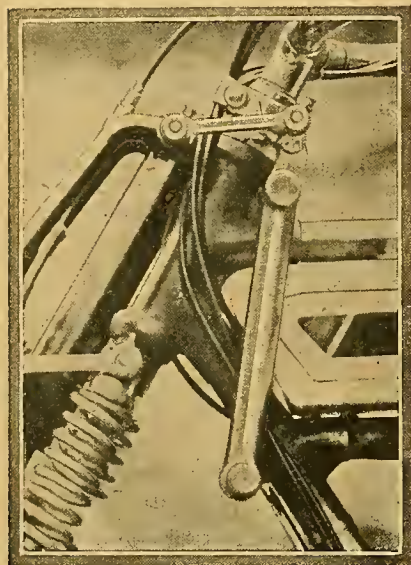
Three parts of the way up the ascent, which was the scene of the Liverpool A.C.C. open hill-climb last Saturday.



# ZENITH IMPROVEMENTS FOR 1913.

Free engine and kick starter. New cut-out and sidecar fixing.

**Z**ENITH motor bicycles have been so successful and so universally victorious in competitions during the past season that the general design in the standard machines has undergone little alteration. A special sidecar clip bracket is now fitted. Lugs are brazed to the top tube and down tube, which are connected by a short vertical tube, thus making a solid fixing between the two frame tubes. This is the fitting suitable for Mills and Fulford sidecars,



Extra strong sidecar lug embracing the top and down tubes on the latest Zenith.

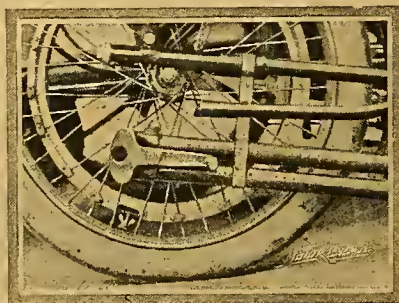
but slightly different modifications of these are designed for different makes of passenger attachments. A further small but important improvement is the introduction of a new magneto shield, which is fastened to special lugs on the footrest bracket. Curved over the magneto, further secured beneath the latter, and thus brought well under the crank case, this shield is of ample width, and further performs the important function of protecting the belt. Messrs. Zenith Motors, Ltd., have found that the belt suffers mostly

from mud thrown up by the back wheel. The tank is now made of heavier gauge material, and is secured by clips on its underside, thus leaving the top free, greatly enhancing the appearance and rendering the top of the tank easy to clean. The petrol gauge has been done away with, and in its stead a glass top filler cap is fitted.

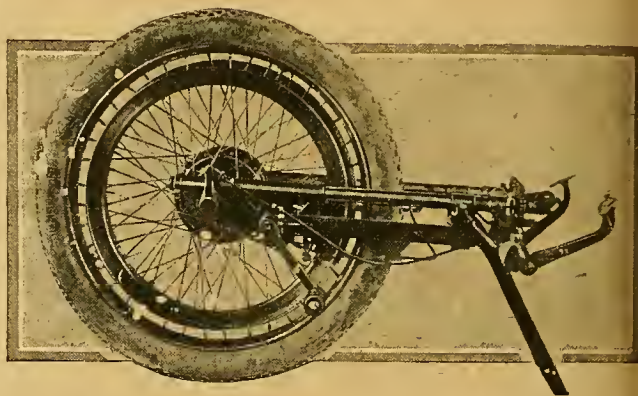
As regards the rider's comfort, a pan top Middlemore saddle is now supplied. On the twin model two separate exhaust pipes are fitted with numerous small holes drilled at the end, and, despite the possibility of the proposed new Local Government Board regulation coming into force, a cut-out is supplied, Messrs. Zenith Motors, Ltd., assuming that the length of pipe affords the necessary room for the expansion of the gases. The exhaust cut-out, which is clearly shown in the accompanying illustration, is a particularly neat job.

## New Control Arrangements.

A slight alteration in the control is the adoption of a double Bowden control lever fitted to the near side of the handle-bar.



Cut-out fitted to the 1913 Zenith twin-cylinder model.



Kick starter and hub clutch operated by a pedal on the new Zenith.

will be fitted to order only. In the back hub there is an Albion plate clutch controlled by a quick pitch thread, and worked by a pedal and Bowden wire from the offside footrest. This pedal is fitted with a toe release, so that the clutch may be held permanently out of engagement or instantly engaged. The brake is in this case worked from the near side footrest. The kick-starter pedal is attached to a spindle running through an eccentric bearing on a carrier slotted at the end to take the rear wheel spindle and sliding in a bearing at its forward end, so that the whole control mechanism can slide with the wheel. As regards the kick-starting device, the free wheel, which is connected by chain to a sprocket on the rear wheel spindle, is attached to the kick starter spindle so that it may be easily dismounted if required. The eccentric bush is, of course, for facilitating the adjustment of the chain. The whole design is well carried out and reflects great credit on the company's works manager, Mr. F. W. Barnes, who has had it under test on his own machine for some time.

## AUTO CYCLE UNION NOTES.

**THE TAXATION COMMITTEE.**—The Hon. Arthur Stanley, M.P., has kindly consented to act as chairman, Mr. Otto Thomas taking the post of vice-chairman. The A.A. and M.U. will be represented by Messrs. Charles Jarrott, R. H. Head, and the Rev. Hassard Short; The Motor Cycle Manufacturers' Union by Messrs. J. V. Pugh, W. H. Wells, and T. H. Tessier; the Scottish A.C.U. by Messrs. Norman Macmillan, John Gow, and James Fulton (secretary). The Motor Cycle Union of Ireland representatives have not yet been nominated.

**A NEW MEMBER OF COMMITTEE.**—Rear Admiral Sir R. K. Arbuthnot, M.V.O., R.N., has been nominated by the Royal

Automobile Club to serve on the A.C.U. Committee. His election to this post was heartily acclaimed at the first meeting he attended.

**MEMBERSHIP.**—The increase of membership of the A.C.U. during the last month is 232, which number is made up as follows: 119 touring members, 21 full members, 60 through the affiliation of newly formed clubs, and 32 by the increase of membership of clubs already affiliated. The total membership of the Union now amounts to 10,000.

**AFFILIATION.**—The Hertfordshire Motor Cycling Club, Ltd., has become affiliated to the governing body; the membership was given as 60.

**THE LOCAL GOVERNMENT BOARD SILENCER REGULATION.**—The draft of the above regulation was referred to the A.C.U. Silencer Sub-committee for consideration.

**THE ONE DAY TRIAL.**—Mr. A. H. Priestley has been appointed chief travelling marshal on the occasion of the One Day Trial in the Lake District.

**MILITARY MOTOR CYCLISTS.**—A letter has been received from the Army Council thanking the Auto Cycle Union for the services of those members who had placed themselves and their machines at the disposal of the War Office during the recent manoeuvres and those responsible for the arrangements.



## NEW SINGLE-CYLINDER RECORDS.

G. E. Stanley Captures the Coveted Hour Record.

**A**S reported in our last issue, G. E. Stanley was busy at Brooklands last week. In his attack on the hour record on Tuesday he was successful in covering 67 miles 792 yards, and at the rate at which he was travelling would probably have done 69 miles 800 yards, but in the last lap the inlet valve spring broke. Fifty miles were covered in 43m. 12s., or an average speed of 69.459 miles an hour, beating his own record made October 3rd by 27s. His fastest lap was the second, which was covered at the remarkable speed of 70.48 m.p.h. The slowest was the seventeenth, when he was unfortunately partly obstructed by a cyclecar which was being driven on the track; the speed in this lap was 68.70 m.p.h. The average speed for

five laps was over 70 m.p.h. Stanley's performance beats Stanhope Spencer's Class C 500 c.c. record, in which the latter covered 65 miles 803 yards on a  $3\frac{1}{2}$  h.p. Rudge at a speed of 65.45 m.p.h.

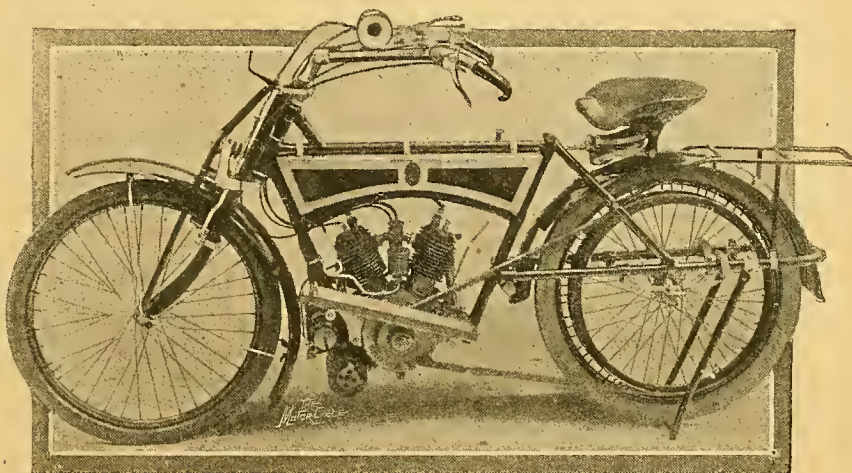
On Wednesday Stanley made an attack on the mile and kilometre, but his best speed was  $\frac{1}{5}$ s. under record, owing to a nasty cross wind.

Harry Martin, however, on an  $85\frac{1}{2} \times 60$  mm. Martin-Jap, captured the five-mile standing start Class B record, covering that distance in 5m. 14s., beating his own record at Canning Town, time 5m. 26s. On a smaller machine,  $76 \times 60$  mm., he established the five-mile standing start record, time 5m. 42s.

## The Springing of Motor Cycles.

**C**OMMENTING on the letter published in a recent issue and signed "Springus," Messrs. Randall and Co., of High Street, Wanstead, have sent us an illustration and particulars of a newly designed spring frame motor bicycle, the design of which has been registered. The chain stays pass right round the back of the wheel in the form of an arch and are brazed to the seat stays at the centre. The wheel is carried on a pair of elliptical springs like carriage springs, and is free to rise and fall within certain limits. This method of springing the rear wheel of a motor bicycle is not absolutely new, but the illustration is of interest as there is little doubt that eventually all motor bicycles will be sprung fore and aft. The proper place to insulate the machine and rider from vibration is at the road wheel. It is strange that few large firms have seriously tackled the question of springing the rear wheel as well as the front. It has been pointed out to us from time to time by manufacturers that springing the rear wheel causes the rider to feel more of the engine vibration. This may be true to some extent. The machine illustrated has been ridden a good deal by the Captain of the Essex M.C., who reports that it is most comfortable and the springing is

a most practical device. The engine is a 3 h.p. twin-cylinder J.A.P. Saxon forks are fitted to the front wheel. Special attention has been paid to the mudguarding of the Randall machine, the guards on the machine illustrated are no less than 5in. across the chord.



A J.A.P. engine motor bicycle, sprung front and rear, made by Randall and Co.

## Inter-club Trial in the Midlands.

**O**N Saturday, the 19th inst., the East Midland Centre A.C.U. held an inter-club team trial. Each club comprising the centre was eligible to enter four teams of three riders, teams consisting of cycles, sidecars, or cyclecars. The Nottingham, Derby, and Lincoln clubs entered the full complement of competitors, Chesterfield contributing two teams. Leicester and Mansfield were not represented. A start was made promptly at 3 p.m., the men being despatched at minute intervals.

The first checking station was at Clarke's Garage, Derby, where heavy rain commenced to fall. However, before reaching Leicester, the next check, the rain had been left behind, and dry roads were again experienced. At the Quorn Garage competitors were checked in, and here Mr. Spence, the proprietor, had very kindly provided tea for all the riders.

Most competitors lighted their lamps before setting off for the next stage to Grantham, and ten miles from that place the secret check, controlled by Messrs. King and Dance, was in operation. Practically all riders lost time here and at the check in Grantham.

The finish was at Mitchell's Garage, to reach which competitors had to ride through Nottingham Market Place, which at about 9 p.m. on Saturday may be considered a bold achievement.

Five complete teams finished—three Nottingham, one Derby, and one Lincoln. The check sheets were worked out during the progress of a smoking concert at the Welbeck Hotel. Results:

The Nottingham Club win the Centre Challenge Trophy, with silver cups to the members of the winning team. The second team (also Nottingham) receive gold medals. Teams: 1, J. Farnsworth ( $3\frac{1}{2}$  Rover), J. D. Mitchell ( $3\frac{1}{2}$  Rover), and G. W. Spencer ( $3\frac{1}{2}$  Rover); 2, H. Dawson ( $3\frac{1}{2}$  Bradbury), J. R. Sylvester ( $3\frac{1}{2}$  New Hudson), and J. Richards ( $3\frac{1}{2}$  Sun).

The organisation throughout was very good. Assistance rendered by the police in passing through the towns *en route* was greatly appreciated.

### MOTOR CYCLE SHOW NUMBERS.

Thursday, Nov. 14th .. Passenger Machines.

" " 21st .. Show Forecast & Buyers' Guide.

" " 28th .. Complete Report.





A section of the members of the Denton M.C. (Lanes.) who competed in a reliability trial on the 6th inst. The membership of this club is now 58.

### North Middlesex M.C.C.

All competitions have been cancelled for the remainder of this year.

### Chichester and District M.C.C.

A club has recently been formed with the above title. The hon. secretary is Mr. J. Holloway, Avoca, St. Paul's Road, Chichester.

### Bishop Auckland, Darlington and District M.C.C.

The result of the hundred mile reliability trial has just been confirmed, and is as follows: 1, W. Swan (5-6 Zenith sc.); 2, N. Hill (3½ Zenith). These two riders alone completed the severe course out of twelve starters.

### Grosvenor M.C.

The second annual dinner was held on October 16th at the headquarters of the club, the Unicorn Hotel, Altrincham, Cheshire. The Chairman presented to Mr. E. G. Crisp the gold medal won by him in the reliability trial.

### Sheffield and Hallamshire M.C.C.

The reliability competition for the Bisby Cup was run off on the 12th inst. A circular course of about fifteen miles had to be covered no less than six times, and the secret checks—which, by the way, numbered about thirty-six or forty—were changed on each circuit of the course, so no competitor was prepared for the next point, thus doing away with the practice of making up for lost points on the first round. Results: 1, S. Sawyer (3½ h.p. Premier), lost 42 marks; 2, Roper (7 h.p. Indian), lost 97 marks; 3, D. Bradbury (3½ h.p. Norton), lost 100 marks. Twenty competitors finished the ride.

### Doncaster and District M.C.C.

A special competition in which the riders were expected to adhere as closely as possible to set speeds was held at Pigburn Hill on the 17th inst. The winner, B. Crouch (2½ h.p. Rumber) holds the Littlewood Perpetual Trophy for one year. C. Barnsdale (3½ h.p. Rex) wins the Rudge cattle-gear for the best single-cylinder performance. There will be a slow half-mile competition this (Thursday) afternoon.

### Oxford M.C.C.

There was a musical social in the club room at the Hotel Buol on the 12th inst., Mr. W. R. Morris being in the chair.

### Harrogate and District M.C.C.

On the 13th inst. a paper chase was held. The hares, T. C. Atkinson (3½ Triumph) and H. W. Fortune (3½ Brown), made for the Hambleton Hills, tackling a bad hill in the vicinity of Wass Bank. The hares were not caught, but W. Fawcett (2½ A.J.S.) arrived five minutes later.

### Hunslet M.C.C.

A reliability competition was held from Hunslet to Stamford and back, distance two hundred miles. Controls were at Tuxford, Stamford, and Bawtry; there were also four secret checks. Result: 1, W. Wood (3½ Premier); 2, F. Simpson (6 Bloomfield); 3, E. Thawley (6 Rex); 4, J. A. Eyre (6 J.A.P.).

### Newport (Mon.) M.C.C.

The reliability trial for the New Hudson Cup resulted in a tie between J. W. Foreman (Rover) and O. Harris. The tie was decided by a single round of the course, and the former won. H. Webb (Premier) made the best single-gear performance, and Pugh (6 Enfield) was first in the sidecar class.

### Oldham and District M.C.

The season was brought to a close with a very successful hill-climb on the Yorkshire Moors. The weather was favourable and the contest was a great success. The Motor Cycle formula was used. Results:

SIDECAR CLASS.—1, F. Wood (Triumph); 2, F. Whitehouse (Triumph); 3, H. Bottoms (Triumph).

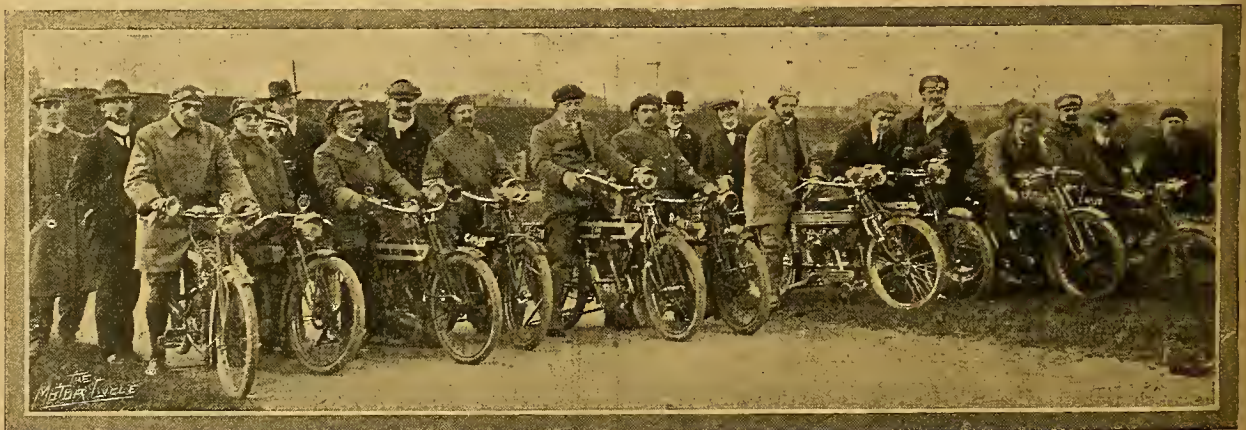
SOLO CLASS.—1, J. Smith (Triumph); 2, H. Bottoms (Triumph); 3, F. Wood (Triumph).

P. Platt made fastest time in both classes.

NOVICES' CLASS.—1, G. Wood (Bradbury); 2, C. Wild (Bradbury); 3, T. Wigglesworth (Enfield).

T. Kenworthy (Dot) made fastest time.

All members are particularly requested to attend the A.G.M. on Tuesday, October 29th.



Members of the Doncaster A.C. (motor cycle section) at the hill-climb at Pigburn. The handicapping was done by each competitor estimating the speed at which he would ascend the hill.



# HOUR RECORD BROKEN

at Brooklands, on October 15th, 1912, by Mr. G. E. Stanley  
on a  $3\frac{1}{2}$  h.p. single-cylindere "SINGER" fitted with

# DUNLOP TYRES

**DISTANCE COVERED: 67 MILES 782 YARDS.**

The above is practically two miles better than the  
previous record, and also beats the twin-cylinder class record.

Brooklands, October 12th, 1912.

**JUNIOR ONE HOUR A.G.U. RACE:** Mr. G. E. Stanley ( $2\frac{1}{2}$  h.p. Dunlop-tyred "SINGER") **FIRST.**

**SENIOR ONE HOUR A.G.U. RACE:** Mr. J. L. E. Emerson ( $3\frac{1}{2}$  h.p. "NORTON") **FIRST.**

**The DUNLOP RUBBER Co., Ltd., Aston Cross, BIRMINGHAM; Alma St., COVENTRY.**

Branches—London, Nottingham, Manchester, Newcastle, Bristol, Leeds, Liverpool, Glasgow, Dublin, Belfast.



Why not fix on a 1913 N.S.U. now?  
—that would ensure good delivery.

## MODELS for 1913

2 h.p. single-cyl., 58×72 mm. 3 h.p. single-cyl., 73×78 mm.  
3 h.p. " 85×88 mm. 3 h.p. twin " 58×75 mm.  
6 h.p. twin-cylinder, 75×94 mm.

All fitted with carburettor with dual control, magneto ignition (high tension),  
loop frame sprung at rear, and spring forks. Can be fitted with the  
famous N.S.U. Two-speed Gear and Free Engine at small extra cost.

The N.S.U. Company are unrepresented  
in a few districts, and are open to appoint  
Agents. Early applications should be made.

**THE N.S.U. MOTOR CO., LTD.**

Offices and Showrooms - 186, Great Portland Street, London, W.  
Goods and Repairs - - - 83-85, Bolsover Street, London, W.

## MORE SUCCESSES 3 CUPS WON

WALTHAMSTOW MOTOR CLUB SPEED  
TRIAL - - - 5th October.

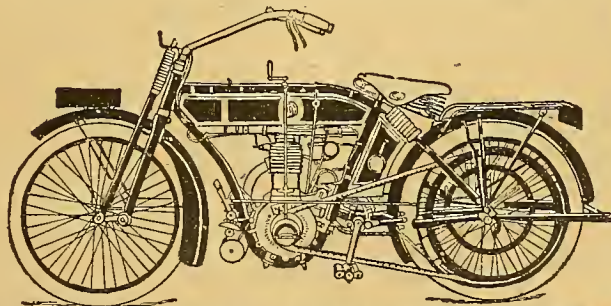
J. Henbury Cup - Mr. J. H. Kerr, on 6 h.p. N.S.U.

WESTERN DISTRICT MOTOR CLUB (London),  
SMART CUP, RELIABILITY TRIAL (202 miles).

Mr. W. F. Ritchie - - - 5 h.p. N.S.U.

WINTER CUP, RELIABILITY TRIAL (132 miles).

Mr. H. J. M. Hughes - 6 h.p. N.S.U. and S.C.





# Watch the

¶ Are you "watching"?

Have you noticed the consistency of its success?

Do you realise that such consistency means perfect service?

Note the records set out here and say—

Is it not worth while to know more of this all-conquering machine?

And then, if you would do so, write us—

**SINGER & CO. LTD.,  
Coventry & London.**



## 5,000 Miles on a 3½ h.p. Brown.

SINCE last Easter the writer (a Northern representative of this journal) has owned a 3½ h.p. Brown, and during the intervening period has given it a severe testing both with and without a sidecar attachment.

The machine, as delivered, was single geared, but a Bowden two-speed gear was quite easily and satisfactorily fitted under the bottom bracket without recourse to the makers or any dealer. Approximately 5,000 miles have now been completed with reliability and practically without any real trouble. Such troubles as have been encountered have only been minor ones, *e.g.*, a broken throttle wire, belt, two valves one at the head and the other at the cotter pin hole, both after running over 4,500 miles; also punctures, of course! The original Dunlop tyre is still on the front wheel; the back one, after doing about 3,500 miles, had to be discarded because it had begun to go at the bead.

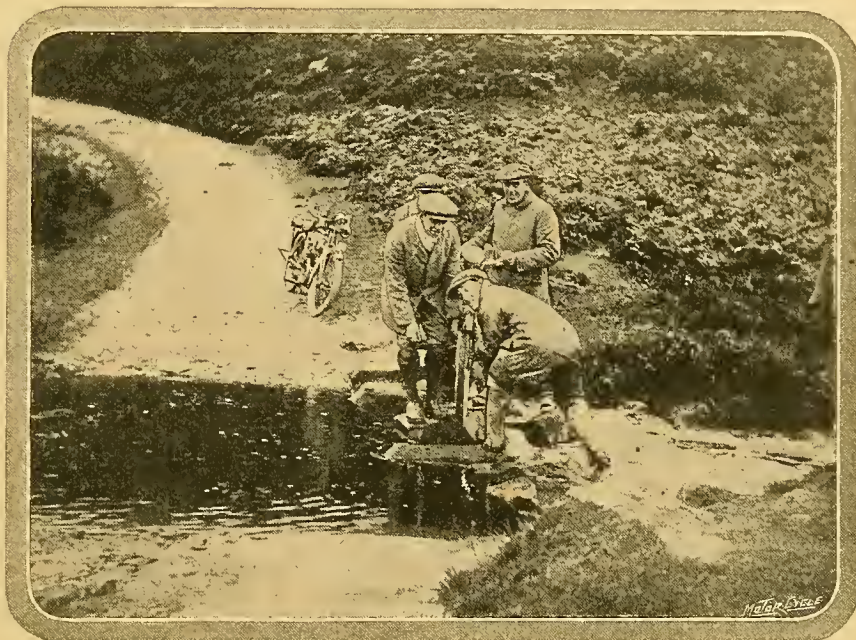
### A Selection of Hills.

When ridden solo the machine has climbed Kirkstone Pass (from Ambleside), Kidstones Pass, Greenhow Hill, Buttertubs Pass, Wass Bank, Kilburn Bank, Sutton Bank, Limber Bank, and other hills. With sidecar and passenger clean ascents have been made of such hills as Garrowby, Brownstay Ridge, and Guy's Cliff. Generally the machine is powerful, fast, and comfortable, although perhaps a little on the noisy side.

There is one objection to this model, namely, the disadvantage of having to remove the engine from the frame when it is necessary to take off the cylinder for cleaning purposes. I understand, however, that

on the new model this difficulty is non-existent, and also that certain other improvements have been incorporated.

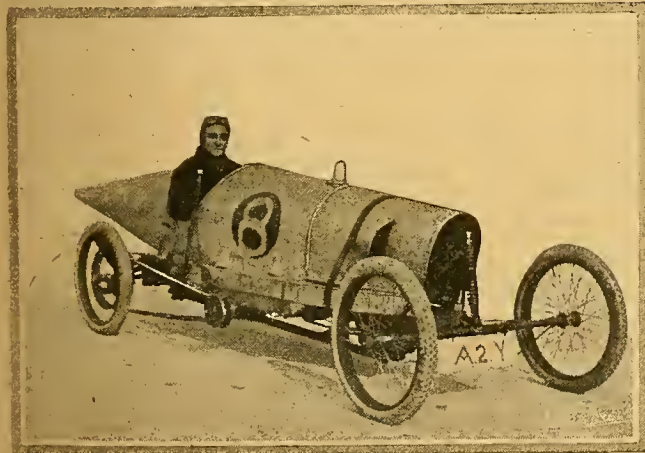
The Bowden gear has behaved splendidly, and has given no trouble at all. It has been oiled regularly (about every 200 miles), and the chain removed a few times for cleaning and boiling in grease. The



On Smilesworth Moor, above Hawaby (Yorks.) near Sutton Bank, showing a sample of some of the roads over which the 3½ h.p. Brown has been tested. The Brown machine is shown at the back waiting its turn to be carried across the stream which was too deep to allow the machine to be pushed through.

chain has been run without any protection in all weathers, and although it looks the worse for wear, it should still be good for a lot more work. A chain cover would be an improvement, and also an adjustable bracket so that the slack of the chain could easily be taken up. Altogether the machine has been a success.

H.W.F.



The Sabella cyclecar, a recent competitor at Brooklands.

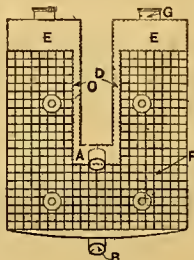
### CARELESSNESS OF PEDESTRIANS.

A case was recently heard in the King's Bench Division when a compositor sued the London General Omnibus Company for damages received through 'being knocked down by one of the defendants' omnibuses when crossing a road. The defendants denied negligence, and contended that the plaintiff did not keep a proper look-out and stepped in front of the motor omnibus. The jury returned a verdict for the defendants. While expressing our sympathy for the victim, we cannot help rejoicing at a verdict of this kind. The number of people who blindly step off the pavement in front of moving vehicles, be they donkey carts, taxicabs, or motor cycles, is quite surprising, and it is astounding that more accidents do not take place; in fact, it speaks marvels for the skill and care of the average motor vehicle driver. If everyone would keep as keen a look-out as all motor cyclists must do, there would be but few accidents.



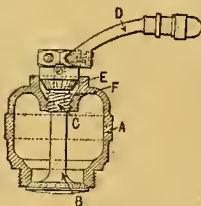
### A Motor Cycle Radiator.

A radiator for use on motor cycles, having water-cooled engines, is of U shape, the water inlet A and outlet B being below the top of the device. The water enters at A, and travels up passages C D in either side of the radiator to the top tanks E, whence it falls by gravity through the restricted cooling chambers F to the lower pipe B. Filling caps G are provided as are also suitable spaces for the passage of bolts for securing the radiator to the machine.—Pendleton Radiator Co., Ltd., and A. L. Dunn, No. 25,866, 1911.



### A Decompressor.

The space into which the gas is compressed may be increased by the provision of a chamber A, which can be screwed into a valve cap or elsewhere. The chamber A is provided with a conical valve B, the spindle of which is screwed at C and provided with a handle D, whereby it may be rotated to open or close the valve B. A second valve E is provided, which is adapted to engage a seating F, so that there can be no leakage of gas due to a slack thread at C.—J. J. Rowe, No. 19,778, 1911.



### Tightening Inaccessible Nuts.

F. R. Archer, 7, Hosier Lane, Snow Hill, E.C., has acquired the sole rights of the well-known Ukantes driving spanner, which is specially designed for tightening inaccessible nuts.

### Cleaning Outfits.

The Nottingham Factoring Co. are selling the rotaball chain brushes, which will be found very useful at this time of the year for cleaning the transmission of chain-driven machines.

### Saddle Seats.

Not the least popular of the many lines made by J. B. Brooks, Ltd., Birmingham, is their motor cycle saddle seat, which has been selected as a standard fitment by several important motor cycle manufacturers for the 1913 season.

### Catalogues Received.

We are in receipt of the Bosch booklet containing coloured charts of the latest ZE1 waterproof motor cycle magneto. This booklet enables the reader to understand the working of the magneto, and every metal and material used is shown in a different colour.

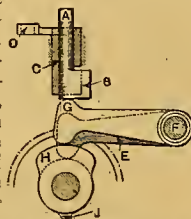
### Air Cushions for Sidecars.

The Hutchinson Tyre Co., 70, Basinghall Street, E.C., have recently introduced various sizes of air cushions for use on sidecars and cyclecars. They are suitable for the seat or the back of the seating; one is also made as a foot cushion. Ladies will appreciate these pneumatic anti-vibrators.



### Decompressor Mechanism.

The valve tappet A is provided at its lower end with a foot B working through a slot in the tappet guide C. This guide can be rotated through a suitable angle by means of the lever D for the purpose of moving the foot B over a rocking lever E pivoted at F upon the same spindle as the ordinary valve lever G. The cam H is provided with a supplementary swell J, the swell H being in the plane of the lever G and that of J in the plane of the decompressor lever F. With the parts in the position illustrated ordinary running is obtained, the movement of the lever E by the swell J not being transmitted to the tappet A. When, however, the foot B is brought over the lever E by rotation of the guide C, movement of the lever E by the swell J raises the valve, this occurring on the compression stroke and allowing a portion of the charge to escape, thus providing easy starting.—G. H. Illston and H. A. Smith, No. 18,828, 1911.

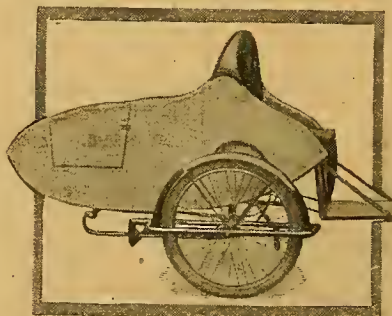


## SPARKLETS



### The Veloce London Agency.

The Wilton Cycle Co., Wilton Road, S.W., have secured the sole London agency for the Veloce motor bicycle, the excellent running of which was lately referred to in these pages.

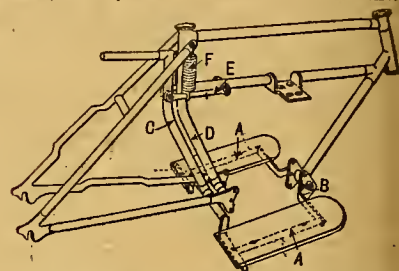


### A DOUBLE SEATED SIDECAR.

The passengers are seated back to back and it is arranged that the footrest may be folded up. This sidecar is made by E. Bowser of Leeds.

### A New Bat Frame.

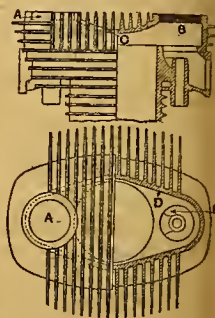
To provide a more comfortable position than has hitherto been attained, the footboards A are arranged further forward, and pivoted to the frame at their



forward ends, as shown at B. The seat carrying tube C is shaped to correspond with the frame tube D. The links E are carried by springs F.—T. H. Tessier, No. 24,184, 1911.

### Cylinder Cleaning.

This cylinder has been designed to facilitate internal cleaning. The valve pockets A B are arranged on opposite sides. The cylinder head C is made convex, as shown, and the combustion space D is made of rounded form and free from recesses, enabling the cylinder to be cleaned by removing the valve caps and using suitable tools.—J. Weller, No. 26,270, 1911.



### Williamsons in London.

One of the latest model 8 h.p. Williamson motor cycles can be seen in London at the premises of Wauchopes, 9, Shoe Lane, Fleet Street, E.C.

### The Senior Hour Race at Brooklands.

J. L. E. Emerson's Norton which won The Motor Cycle challenge cup at Brooklands on the 12th inst. in the Senior Hour Championship was fitted with a Lyso belt, which fact has, of course, very much pleased the makers, The Lyceff Rawido Belt Co., Ltd., Bromley Street, Birmingham.

### Tyres for F.N. Motor Cycles.

Owners of F.N. motor bicycles as well as agents for this make of machine will be interested to know that they can obtain information as to Englebert tyres, which have been largely fitted to F.N. motor cycles, from Englebert Tyres, Ltd., 200, Great Portland Street, W.

### Excursions to the Paris Show.

The London, Brighton and South Coast Railway Co. will issue fifteen day excursion tickets to Paris on Fridays, December 6th, 13th, and 20th, and Saturdays, December 7th, 14th, and 21st. These excursions are being run in connection with the Paris Salon, which will be specially interesting this year on account of the number of light voiturettes which will be on view. Further particulars can be obtained from the Continental Traffic Manager, Victoria Station.



**W. F. NEWSOME**

winner of the **Herts County Trials**, Oct. 5th, made  
**fastest & slowest times** on a **Triumph** fitted with

**PHILIPSON'S (PATENT) GOVERNOR PULLEY**

making best performance by trade rider, gaining  
full marks for fast and slow hill climbs, winning

**SILVER CUP AND GOLD MEDAL.**

A gear of approved merit, simple but sure.

Telephone • 147 EAGLEY.  
Telegrams: "SAFETY, BOLTON."

Works • **PHILIPSON & CO.**,  
Engineers & Machinists,  
Holland St., **BOLTON.**

# SPENCER MOULTON

## MOTOR CYCLE TYRES

**T**HE photographic reproductions below show the three styles of the Motor Cycle Tyre that is fast gaining first place in the esteem of men who know "What's what" in tyres. No picture, however, can show their sterling, sovereign qualities on the wearing, tearing, fretting road. This is a matter of *performance*, not claims! "Deliberate long—choose quickly."

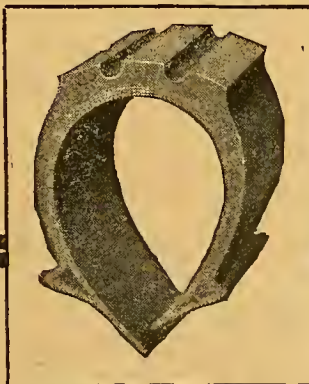
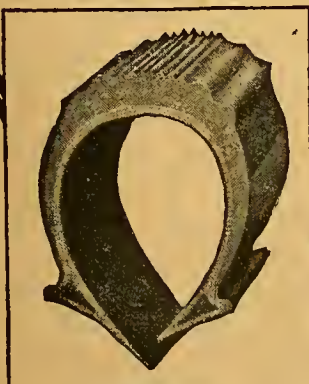
Satisfy yourself about the vital question of tyre superiority — then decide.  
Long and troubleless service for minimum outlay in every pair. Booklet free.

**GEORGE SPENCER, MOULTON & CO., LTD.**  
KINGSTON MILLS, BRADFORD-ON-AVON, WILTS.

LONDON:  
77-79 Cannon Street, E.C.

GLASGOW:  
65-67 Bothwell Street.

LEEDS:  
68 Albion Street.



*In answering these advertisements it is desirable to mention "The Motor Cycle."*





## THE BLUEMEL MASCOT :: PLUG ::

**WILL** get the last ounce out of your engine.

**WILL** stand up to the hardest work it can be possibly put to.

**WILL** do so consistently for a greater length of time than any other plug.

**WILL** regularly fire the weakest mixture, and

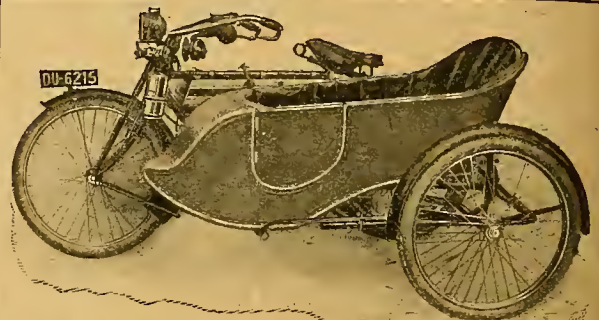
**WILL** give you the much desired immunity from ignition troubles.

Write for List, Motor Cycle Dept.,  
**C. W. BLUEMEL & BROS.**  
WOLSTON, near COVENTRY.

MODELS for Motor Cycles.

## FURTHER SIDE CAR RECORDS at Brooklands, August 30, 1912, made by Mr. W. Stanhope Spencer with **BRAMBLE SIDE CAR.**

Rezd. No. 607124.



**THE BRAMBLE MANUFACTURING CO. Ltd.**

Charterhouse Mills, London Road, Coventry.

London Representatives—

**ROBERTSONS**, 157, Gt. Portland Street, London, W.

Catalogue on application.

THE  
FAMOUS

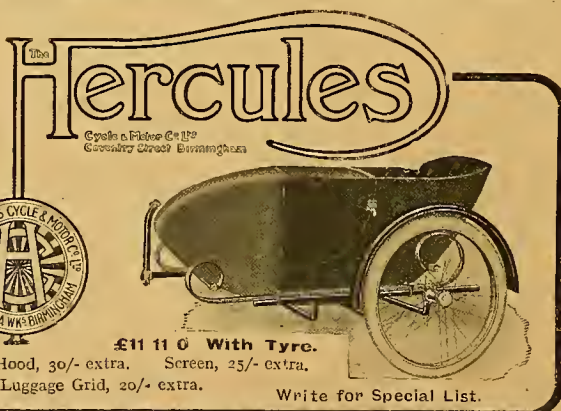
# BRAY "RONI"

ACETYLENE BURNER FOR HEADLIGHTS.

Gives from a single gas-way only, an atmospheric flat flame which cannot become distorted and crack mirror or lens. The burner is of the air-injecting type—it will not carbonise. It is now fitted with a pressure check which obviates flaring.

Send for descriptive booklet of the "Roni" Burner to

**GEO. BRAY & Co., Ltd., Dept. .... M. LEEDS, ENGLAND.**



## 4½ REGAL PRECISION

FOR SIDE CAR WORK GIVES JUST THAT LITTLE EXTRA POWER THAT YOU WANT.

Single Cylinder, 89×96 m/m., 600 c.c.

Extra strong frame and forks, that you can always rely upon. Extra large tank capacity, with detachable sump and petrol filter.

Extra low saddle and comfortable riding position.

Stumey-Archer 3-speed, or Bowden or Rod 2-speed.

Excellence of practical design and finish, heaps of good points. That little "extra" all round that makes "just the difference"

**Immediate Delivery.**

**ERNEST SMITH & WOODHOUSE, Ltd.,**  
83, John Bright Street, BIRMINGHAM.

LONDON AGENTS: H. C. MILLS & Co., 15, Woodhouse Parade, North Finchley



## NEWSOME & FLETCHER,

**Motor Cycle Specialists,**  
3, SANDRINGHAM PARADE, EALING.

We are the London and District Agents for the Philipson Self-Governing Pulley. Orders executed in rotation. Fits any belt-driven machine. All spares for Triumph, Premier, and Douglas machines in stock. Tuning up a speciality. Come and see our place.

We are now booking up orders for 1913, and any motor cyclist desiring that his new machine be in perfect order should place his order with us, W. F. Newsome (late of Triumph Cycle Co., Ltd., Coventry), personally inspecting each machine before it leaves our depot.

### 1912 MACHINES IN STOCK.

F.E. Triumphs.

3½ h.p. 3-speed Premier.

2½ h.p. Lightweight Premier

5 h.p. A.J.S.

T.T. and Touring Douglasses.

6 h.p. Zenith and 3½ Zenith.

Rudge Multi.

Canoelet and Mills-Fulford  
Sidecars.

### TWO SPLENDID BARGAINS.

1911 F.E. Triumph, looks  
like new, £41.

1912 Sturmev-Archer  
Triumph, complete with  
headlamp, horn, and  
spares, £56.

What offers for W. F. NEWSOME'S T.T. Hill-climbing  
Machine? Guaranteed perfect.

## OFFERS WANTED.

We have the following machines left that we wish to clear, to make room for 1913 stock:

### CYCLECARS—

A.C.'s; Morgans; G.W.K.'s.

### MOTOR CYCLES—

P. & M.'s, Colonial and ordinary  
models; Scott; 7 h.p. Indian; 8 h.p.  
Rex-Jap, 2-speed; Douglas, model  
K; Rudge, f.e.

Besides these we have new Clyno Sidecars,  
new Montgomery No. 8, 9-Guinea Sidecar. A  
few 1912 second-hand Sidecar Machines, also  
a small number of cheap Magneto Machines,  
and a quantity of new and second-hand  
Accessories. List free.

Note the address—

**HITCHEN'S LTD.,**  
**MORECAMBE.**

Telephone 112. Wires—Hitchen's Ltd., Morecambe.



BRING YOUR  
MAGNETO  
UP TO  
'CONCERT  
PITCH.'

## EISEMANN MAGNETO OIL

is the only oil you should use for your magneto.  
— Specially prepared for electrical apparatus. —

Price 2/8 per tin, post free.

THE EISEMANN MAGNETO CO.,  
43, Berners Street, Oxford Street, London, W.  
Telephone: 4601 City. Telegrams: "Rousillon, London." C.D.C.

## JUST THE TIME OF YEAR

when protection is required  
against wet and mud.

Extra mudguards may keep  
the rider clean, but they  
certainly do not prevent water  
carrying grit from working  
havoc in unprotected hubs  
and other bearings.

HUB LUBRICANT is recognised as an ideal  
lubricant for ball bearings. Its special  
value, however, is in the protection that it  
affords against the ingress of wet and mud.

Hub lubricant is now being  
generally adopted for bottom  
bracket two and three speed  
gear boxes such as Bowden,  
Clyno, Douglas, Chater Lea,  
F.N., Bradbury, and James.  
It is quite different to the  
usual gear grease.

Write for H. L. literature to—

**PRICE'S PATENT CANDLE CO. LTD.,**  
**BATTERLEE, LONDON, S.W.**

Hub Lubricant—post free—½lb. tins, 9d; 1lb. tins, 1/-



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular traders, advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

### SECTION II.

York and Lancashire.

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, and Warwick.

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

### SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembrokeshire.

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, and Channel Islands.

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

### SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

### SECTION X.

Scotland.

### SECTION XI.

Ireland and Isle of Man.

## THE II POINTS ON WHICH HATCHOPES SCORE

Are simply saving and satisfaction. You pay less and get more in value, efficiency, and sure satisfaction than elsewhere.

**ALWAYS OVER 300 MOTOR CYCLES IN STOCK, INCLUDING NEWEST 1912 MODELS, AND GENUINE SECOND-HAND MACHINES RENOVATED AND PUT IN PERFECT RUNNING ORDER, AT PRICES THAT CANNOT BE BEATEN.**

Ask for a copy of to-day's List which includes:

6083.	3 1/2 h.p.	1911	T.T. road.	TRIUMPH	£35	0
6085.	3 1/2 h.p.	1910	TRIUMPH	.....	£30	0
6086.	3 1/2 h.p.	1911	ZENITH GRADUA	.....	£36	0
6088.	3 1/2 h.p.	1912	SCOTT	.....	£50	0
6090.	3 1/2 h.p.	1912	SCOTT	.....	£45	0
6091.	3 h.p.	1908	N.S.U.	.....	£15	0
6094.	3 1/2 h.p.	1912	F.E. TRIUMPH	.....	£47	0
6095.	3 1/2 h.p.	1912	ZENITH	.....	£40	0
6098.	5 h.p.	1910	twins REX and sidecar	.....	£34	0
6099.	3 1/2 h.p.	1911	T.T. TRIUMPH	.....	£34	10
6104.	6 h.p.	1911	2-sp. N.S.U. & sidecar	.....	£42	0
6072.	2 1/2 h.p.	1909	DOUGLAS	.....	£18	10
6073.	3 1/2 h.p.	1910	free-engine TRIUMPH	.....	£33	10
6074.	8 h.p.	1911	2-speed MATCHLESS	.....	£50	0
6076.	2 1/2 h.p.	1910	DOUGLAS	.....	£22	10
6079.	2 1/2 h.p.	1912	2-speed DOUGLAS,	.....	£28	10
			Model J	.....	£28	10
6081.	3 1/2 h.p.	1907	2-speed TRIUMPH	.....	£25	0
6050.	3 1/2 h.p.	1908	2-speed N.S.U.	.....	£16	10
6051.	2 1/2 h.p.	1908	BRADBURY	.....	£6	10
6056.	3 1/2 h.p.	1912	free-engine TRIUMPH	.....	£46	0
6057.	3 1/2 h.p.	1912	standard TRIUMPH	.....	£39	0
6060.	3 1/2 h.p.	1911	F.E. TRIUMPH	.....	£38	0
6063.	3 1/2 h.p.	1909	BRADBURY	.....	£22	10
6019.	4 h.p.	1911	Free-engine INDIAN	.....	£32	10
6026.	3 1/2 h.p.	1912	2-speed HUMBER	.....	£44	0
6035.	8 h.p.	1911	T.T. MATCHLESS	.....	£50	0
6007.	2 1/2 h.p.	1911	DOUGLAS	.....	£26	10
6004.	3 1/2 h.p.	1912	3-speed BRADBURY	.....	£62	0
			and sidecar	.....	£62	0
5989.	3 1/2 h.p.	1912	ZENITH GRADUA	.....	£45	0
5983.	3 1/2 h.p.	1911	2-speed BRADBURY	.....	£35	0
5981.	5-6 h.p.	1912	A.C. SOCIABLE	.....	£79	0
5980.	5-6 h.p.	1911	4-cylinder F.N.	.....	£23	0
5968.	8 h.p.	1912	2-speed BAT, chain	.....	£60	0
			drive	.....	£60	0
5947.	3 1/2 h.p.	1909	DOUGLAS	.....	£20	0
5908.	3 h.p.	1910	CENTAUR	.....	£20	0
5901.	5 h.p.	1911	cone clutch REX	.....	£30	0
5882.	2 1/2 h.p.	1910	ROYAL ENFIELD	.....	£18	0
5870.	3 h.p.	1912	ZENITH GRADUA	.....	£42	10
5861.	6-7 h.p.	1911	BAT-J.A.P.	.....	£22	10
5834.	5 h.p.	1911	tourist REX	.....	£30	0
5809.	2 1/2 h.p.	1911	T.T. J.A.P.	.....	£28	10
5799.	3 1/2 h.p.	1911	T.T. BRADBURY	.....	£28	0
5788.	3 h.p.	1912	2-speed HUMBER	.....	£42	10
5786.	2 1/2 h.p.	1912	3 sp. NEW HUDSON	.....	£37	10
5742.	3 h.p.	1910	I.T. TRIUMPH	.....	£32	10
5732.	2 1/2 h.p.	1912	2-speed ENFIELD	.....	£42	10
5621.	2 1/2 h.p.	1912	2-speed HUMBER	.....	£42	10
5606.	5-6 h.p.	1908	2-speed F.N.	.....	£20	0
5600.	2 1/2 h.p.	1911	GRIFFON	.....	£15	0
5596.	3 1/2 h.p.	1910	KERRY ABINGDON	.....	£30	0
5559.	3 1/2 h.p.	1908	TRIUMPH	.....	£25	0
5541.	3 h.p.	1910	free-engine PREMIER	.....	£24	0
5447.	3 h.p.	1911	standard BRADBURY	.....	£30	0
5420.	2 1/2 h.p.	1911	2-speed ENFIELD	.....	£35	0
5346.	2 h.p.	2-stroke	lady's	.....	£7	10

**THE MOST LIBERAL EXCHANGE ALLOWANCE FOR USED MOTOR CYCLES IN PART PAYMENT OF NEW IS ANOTHER POINT ON WHICH**

## HATCHOPES SCORE

9, Shoe Lane, Fleet St., LONDON, E.C.

'Phone: 5777 Holborn. Wires: Opifcer, London.

## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. If for all transactions exceeding £10 in value a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Illife & Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

SCOTTS, 1912, the ideal motor cycle, ready for immediate delivery.—Parker's, engineers, Kendal. [6705]

NEW 3 1/2 h.p. F.E. Rudge, just received; no reasonable offer refused.—Smith, motor agent, Workington. [X8722]

TRIUMPH, 1911, late, F.E. speedometer, lamp, etc.; £38; done 1,700 miles.—G. Ormrod, Workington, Cumberland. [7040]

MINERVA, 2 1/2 h.p., B. and B., 1911 Bosch, adjustable pulley, footboards, new back tyre; £15.—Herbert, Windermere. [X9123]

1913 Douglas, Zenith, New Hudson, Rover, Smith, Precision motors—send orders now for early delivery.—C. W. Smith, Northgate, Darlington. [7237]

SCOTT, late 1910, new tyres, done 1,200 miles, £38; Roc, 5-6 h.p., 2 speeds, in good condition, tyres good, £25.—Illingworth, Beast Banks, Kendal. [X8429]

1912 Standard Triumph, mileage under 2,000, perfect order, all necessary spares and accessories; £40, a bargain.—Walton, 67, Grange Rd., W. Hartlepool. [X8918]

1912 7-9 h.p. Indian, clutch model, speedometer, Brooks carrier bag, and all accessories, not done 3,000 miles; bargain; never bought car; £52, or near offer.—Glaag, Darlington Rd., Ferryhill. [7004]

ZENITH, 4 h.p., late 1911, condition absolutely perfect, spare tyre, tube, belts, valves, etc., enamelling uns scratched; £41, or with Millard Herald sidecar £45; buying twin.—Forlind, Stanhope Av., West Hartlepool. [X9079]

3 1/2 h.p. N.S.U., stand, carrier, new belt, new accumulator and batteries, good running order, takes sidecar easily; also Motosacoche, 1 1/2 h.p., newly enamelled, and perfect condition; best cash offers, or exchange for higher power.—Taylor, Blackford, Carlisle. [7071]

5-6 h.p. Rex de Luxe, 1909-10, a.i.r., and sidecar, Roc 2-speed gear, handle starting, free engine, Whittle, Cowey, lamp, horn, watch, mirror, Senspray, spring footboards, luggage, Bates special tyres, 26x2 1/2, almost new, whistle, mag, and all controls on handle-bar, wicker sidecar, specially sprung, 2 1/2 tyre, combined luggage board and petrol box, road drag, luxurious riding, combination in excellent order, engineering care; inspection invited; selling reason—decease of owner; cheap at £45.—Hardy, Yewdale, Durham Rd., Stockton-on-Tees. [X9038]

### SECTION II.

York and Lancashire.

SINGER, lady's, 2 1/2 h.p., 2-speed and free engine, not run 30 miles; £42/10 to clear.

SINGER, 3 1/2 h.p., Tourist Trophy model, equal to new; £38.

SINGER, 2 1/2 h.p., free engine, been little used; £35.—Carnforth Cycle and Motor Co., Carnforth. [X7915]

HUMBER, 2 1/2 h.p., twin-cyl., 3-speed and free engine, shop-soled; 47 gns.—Carnforth Cycle and Motor Co., Carnforth. [X7916]



**HAVE YOU THOUGHT**  
of purchasing a 1912 Rex de  
Luxe? Our exchange allow-  
ances are greater than ever.

### NEW REX BARGAINS.

	Maker's Price.	Our Price.
1911-12 3 1/2 h.p. Tourist.....	£45 3	34 guineas
1911-12 3 1/2 h.p. 2-sp. de Luxe	£59 17	46 guineas.
1911-12 5 h.p. 2-sp. Twin de Luxe, special price	51 Gns	
1912 2 1/2 h.p. 2-speed Rex Junior de Luxe ..	£45 0	
1912 4 h.p. Tourist, 8 1/2 bore x 95 stroke ..	£46 0	
1912 4 h.p. 2-speed de Luxe, handle starting	£56 0	
1912 6 h.p. 2-speed Twin de Luxe ..	£62 10	
1912 6 h.p. 2-sp. Twin de Luxe, chain drive	£70 0	
1912 6 h.p. 2-speed Coach-built Sidette ..	£75 0	

Offers wanted.

**SOLD UNDER MAKER'S GUARANTEE.**

### SECOND-HAND REXES.

REX, 1912, 4 h.p., 2-sp. de Luxe, 200 miles	£46 10
REX, 1912, 2-speed, Junior, 100 miles	£29 10
REX, 1912, 6 h.p. Twin de Luxe, 2-speeds	£49 10
REX, 1912, Twin, 2-speed, de Luxe ..	£49 10
REX, 5 1/2 h.p., Twin, spring forks ..	£16 10
REX, 1912, 4 h.p., Tourist, done 200 miles	£38 10
REX, 3 1/2 h.p., magneto, free engine, 1909 ..	£26 10
REX, 3 1/2 h.p., magneto, spring forks ..	£19 10
REX, 3 1/2 h.p., magneto, lightweight, h.b. con.	£16 10
REX, 1909, 5 h.p., 2-speed, Rex de Luxe ..	£29 10
REX, 1910, 5-6 h.p., Twin, very fast ..	£29 10
REX, 1911, 3 1/2 h.p., 1912 mag., shop-soiled	£2 Gns.
REX, 3 1/2 h.p., light and low, h.b. control ..	£12 10

**EASY PAYMENTS QUOTED AT KEEN RATES.**

### MISCELLANEOUS MACHINES.

1912 2-speed BRADBURY .....	£44 10
1910 6 h.p. M.O.V. 2-speed N.G.U. ....	£34 10
TRIUMPH, 1910, clutch, splendid .....	£35 0
ROVER, 1911, clutch model; cost £55 ..	£39 10
HUMBER, 1911 3 1/2 h.p., tourist, little used	£29 10
PRECISION, 3 1/2 h.p., magneto, Druids ..	£32 10
ROYAL ENFIELD, twin, lightweight, mag.	£19 10
ANTOINE, 6 h.p., magneto, Saxon forks ..	£21 10
4 1/2 h.p. twin MINERVA, h.b.c., spring forks	£16 10
ROC, 4 h.p., 2 speeds, handle starting ..	£23 10
J.A.P., 2 1/2 h.p., low frame, spring forks ..	£9 10
N.S.U., 3 h.p., magneto, bargain ..	£15 0
ROC, 5 h.p. 2-speed free engine .....	£26 10

Easy Payments quoted on any machine.

### 1912 SIDECARS.

Illustrated List on application.

"Exchange," with Continental tyre .....	£5 5
"De Luxe," with best tyre, apron, footmat	£6 6
"De Luxe," with special side-entrance body	£7 17
"De Luxe," with best coach-built body ..	£7 12
Improved quick-detachable bodies, cranked extra strong back axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.	

Discount to trade. Exchanges entertained.

### SUNDRIES.

1912 Armstrong 3-speed Gear, new and complete .....	£5 19 6
Lycett's Large Size Motor Saddle, new ..	9 6
New 800ft. F.R.S. Lamp, grid generator ..	35/-
26x2 Avon Non-skid Covers, new ..	17/6
Phoenix Forecar, less tyres ..	17/6
Shop-soiled Cane Sidecar Body ..	16/6
Wicker Sidecar Body ..	10/-
1912 Bradbury 2-speed Gear, NEW ..	£7 0
24 x 2 1/2 Clipper Covers, 10/6; Tubes ..	5/9
£12 12s. Montgomery Sidecar, almost new	£6 6
X.L. All Spring Forks ..	8/6
Myers' Motor Cycle Stand ..	3/3
Faller's 20-amp. Accumulators, NEW ..	11/9

**The Halifax Motor Exchange**

### MOTOR BICYCLES FOR SALE.

TRIUMPH, 1909, Fit-all 2-speed gear, and flat headed piston, lamp, horn, spare palley, valve, etc., also sidecar, all in good condition; £30.—C. Greaves, Aysgarth, Broom Rd., Rotherham. [X8833]

3 1/2 h.p. 1911 Premier, T.T. with touring equipment, 3 1/2 just enamelled and plated, £30, or offer; 5 h.p. Rex, free engine, Bosch, B. and B. new Rom tyre, £25, or offer.—13, Derby St., Bolton. [X9125]

DOUGLAS, 1912, model K, excellent condition, new special Amac, touring and racing bars, do over 50, belt shield, Lycett pan seat, and accessories, £40; Jones speedometer, Lucas horn, spare tube, £42.—Worsnop, Union St., Halifax. [X8870]

1912 Rudge Multi, new, shop-soiled, £49; 1912 engine, new, shop-soiled, £45/10; only these three left, carefully packed, absolutely new, never been out of depot; room wanted.—Carrs, Knowsley St., Bury. [X8934]

3 1/2 h.p. Rex, complete, with lamp, horn, tools, etc., £25, or near offer; also sidecar, almost new, £5; together or separate.—Bankwood, Egerton Rd., Fallowfield, Manchester. [7107]

1911 3 1/2 h.p. J.A.P., Chater, only done 2,600 miles, footboards, Bat spring forks, Cowey, Whittle, F.R.S. lamp, Lucas generator, tyres 26x2 1/2, new heavy Kempshall and Hutchinson, spare valves, tube, tools, etc., as new.—H. Readhead, Silverdale, Scally, Yorks. [6701]

TRIUMPH, July, 1909, very good condition, new tyres, £26/10; Triumph, July, 1910, free engine, just overhauled by makers, £33/10; Triumph, almost new, T.T. roadster, 1912, cannot be told from new, £44.—Stanley Garage, Westbrook St., Bolton. Phone: 1348. [X8195]

2 1/2 h.p. F.N., contains new coil, new battery, 2 new 24 tubes (cost 10/- each), one new cover (cost £1), 1912 B. and B. carburettor, £12, or nearest offer, or exchange for new sidecar equal value; also new 1912 Binks carburettor for sale, what offers?—H. Bardsley, Lyndhurst, Shaw, Lanes. [X8867]

1912 6 h.p. T.T. Bat-Jap, side by side valves, special timing, 2 1/2 in. tyres, efficient mudguards, spring forks, etc., etc., not done 1,500 miles, tools, spares, etc., guaranteed perfect throughout, any speed from 10 to 70 m.p.h.; cost over £70, offers; ordered next year's model.—Box L212, The Motor Cycle Office, 20, Tudor St., E.C. [6975]

FREE Engine Triumph, June, 1911, engine, tyres, tubes, perfect and new condition absolutely, including all parts, Cowey, mirror, watch, Autoclipse lamp and generator, all tools, spare plug and valve, also Milford right side 14 in. model spring wheel sidecar; a genuine machine: £46 cycle, £8 sidecar.—Holden, 12, Thoresby St., Hull. [X8849]

NORTHERN Depot, Ltd., "Everything Motorish," Leece St., Liverpool, are prepared to accept reasonable offers for the remainder of the new 1912 machines, previous to the show. The following, among others, are in stock for immediate delivery: A.C. Sociable, 3-speed Rover, 3-speed Colonial New Hudson, 2-speed Bradbury, clutch 4 h.p. Rex-Jap, standard Kerry-Abingdon, clutch Kerry-Abingdon. [X9047]

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

3 1/2 h.p. Hummer, 1912, 2-speed, nearly new; £40, no offers.—Percy Malloy, Ilkerton. [X8431]

TRIUMPH, good tyres, mag., running order; offers or exchange.—Osborne, 19, Bore St., Lichfield. [X8961]

PHELON and Moore, brand new, standard touring model, just arrived—immediate delivery.—Moss, Wern. [X8956]

TRIUMPH, 1911, F.E., splendid condition; any trial; 37 gns.—70, Halesowen Rd., Old Hill, Staffs. [X9007]

MOTOSACOCHE, 1911, 2 1/2 h.p., very little used, in perfect order, with spares; £22.—R. Cadman, Trent College, Derbyshire. [5982]

DOUGLAS, 1911, 2-speed, free engine, perfect condition; any trial; £30.—Geo. Sale, Newcastle St., Cooperage, Burslem. [7096]

TRIUMPH, 1910, tyres almost new, 1912 handlebars, splendid machine; bargain, £27/10; trial.—Stabbs, Laurels, Winsford. [X9083]

1911 Rudge, F.E. (June), splendid order, spare inlet, exhaust, such Lyso: £30, or nearest quick sale.—Hughes, Isryn, Trawsfynydd. [7007]

F.N., 2 1/2 h.p., late 1910; £19; clutch operated from handlebar, B. and B. carburettor, overhauled, condition perfect, spares.—Dr. Nock, Penkridge, Staffs. [X8433]

TRIUMPH, 1909, and sidecar, splendid condition, recently overhauled, might separate, lamp, horn, accessories; £30.—Rev. Rider, Whitechurch, Salp. [X8432]

3 1/2 h.p. Rex, Mabon F.E., h.b.c., spares, covers, tubes, complete running order, with detachable Phoenix forecarriage; £12.—Batler, Grasmere, Leasowes Rd., Wallasey. [X8430]

5 h.p. Indian, 1911 model, free engine, guaranteed perfect condition, new Palmer cord tyre; cost £61 July, 1911, nearest offer £35.—View, Fishwick, Devonport Green, Wilmslow. [X9030]

# REY

(THE NAME WITH A REPUTATION. Established 1900.)

**5, HEATH HAMPSTEAD, N.W.**

Close to Hampstead Tube Station.

Tel.: "Rey, Hampstead." Tel.: 2678, P.O., Hampstead.

## FOR CASH ONLY

1912 SHOP-SOILED MACHINES, otherwise new.

SINGER, 4 h.p., 2-speed .....	£54
BRADBURY, F.E. Model .....	£43
RUDE T.T. Roadster .....	£39
ZENITH, 6 h.p. ....	£58
TRIUMPH, F.E. Model .....	
DOUGLAS, Model H .....	£42
CLYNO, 5-6 h.p., 2-speed .....	£59
A.C., Standard Model .....	£80
MATCHLESS, 8 h.p., 2-speed, No. 5 .....	£59
BAT, 5-6 h.p., 2-speed, chain drive ..	£62 10
MATCHLESS, 8 h.p., 2-speed, No. 7 ..	
double belt .....	£62
HUMBER, 3 1/2 h.p., 2-speed .....	£41
RUDE, 2-speed .....	£46
RUDE, free engine .....	£46
BAT, 5-6 h.p. ....	£49

Compare our prices with others.

## EXTENDED PAYMENTS. NO EXTRA CHARGE on LIST AS UNDER—

BRADBURY'S, BATS, RUDGES, MATCHLESS, CLYNOS, ZENITHS, SINGERS, DOUGLAS, HUMBERS, ENFIELD, NEW HUDSON, PREMIER, TRIUMPH.

ALL NEW 1912 MODELS, until further notice.

**1 DOWN. BALANCE TWELVE EQUAL  
MONTHLY PAYMENTS.**

## SECOND-HAND

228. F.N., 4-cylinder, 5-6 h.p. ....	1911
225. F.N., 4-cylinder, 5-6 h.p. ....	1910
226. F.N., 4-cylinder, 5-6 h.p., with clutch .....	1910
237. RUDGE, T.T. Roadster .....	1912
230. REX, 4 h.p., clutch, speedometer and sidecar	1910
230. REX, 4 h.p., good order ..	1910
237. BRADBURY, 3 1/2 h.p., as new ..	1912
239. SCOTT, splendid order ..	1911
249. CLYNO and sidecar, as new ..	1912
249. RUDGE, Multi, with side-entrance sidecar	1912
212. MINERVA, 3 1/2 h.p., low ..	1909
229. PREMIER, 3 1/2 h.p. T.T., as new ..	1912
228. JAP-CHATER, 4 h.p. ....	1912
23. REX, Twin, 4 h.p., T.T. ....	1910
28. MILLFORD Radial castor cane sidecar ..	1911
22 10s. 1912 MABON CLUTCH ..	
220. F.N. Car, 10-14 h.p., as new ..	1913

All Accessories included on S.H. at the price advertised.

## IMMEDIATE DELIVERY

OF 1912 MACHINES, OVER 50 IN STOCK OF LEADING MAKES, INCLUDING P. & M.'S. SCOTT, MORGAN RUNABOUTS, A.C.'s, G. & N.'s, AND G.W.K.'s.

TRADE SUPPLIED WITH VARIOUS MAKES, INCLUDING SIDECARS AND CYCLECARS.

## LIBERAL DISCOUNT.

## THE FAMOUS "REY" SIDECARS.

£6 5s. £5 5s.

Side-entrance Models, Wicker, £7. Coach-built, £9 10s. 2 Elegant Cane Models, Side-entrance, £10 10s. All complete with Hutchinson or Michelin 26 x 2 1/2 in. tube and tyre, and quick detachable joints.

—LIBERAL DISCOUNTS TO THE TRADE.—

## ORDER NOW FOR EARLY DELIVERY.

We are now Booking Orders for 1913 MACHINES and RUNABOUTS, now is your time to Book with THE ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

Sole LONDON Wholesale Agents for LINCOLN ELK.

'Phone: 766.

Telegrams: "Perfection."

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A41



## ALL OUR SIDECARS ARE GUARANTEED 12 MONTHS



MODEL DE LUXE.  
£6 5s.



MODEL C.  
with Cane Body, £7.



MODEL E,  
with Reversible and  
Detachable Child's Seat,  
£7 5s.



MODEL D.  
with Coach Built Body,  
£8.

## OUR REED CANE BODIES

have undoubtedly hit the mark.

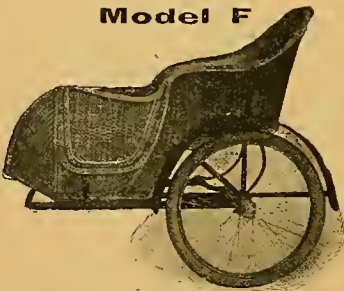
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wickerwork, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

### Model G



£7 10s.

### Model F



£8 8s.

### All our Sidecars are supplied

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for List.

### MISCELLANEOUS BARGAINS.

New Rubber-studded Covers, 26 x 24, beaded	17/6
Water Circulating Pump	5/-
Small Tricar Radiator	5/-
Triumph pattern Handlebar, new	6/6
New Prested Accumulators	7/6
New Prested Trembler Coil	15/-
Lycett's "Top Tube" Toolbags	7/-
2 h.p. Stationary Engine water-cooled	£4 10
Albion Clutch, fits Triumph	35/-
New Screw-cutting Lathe, 4in. centres	£6 10

## Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,  
**HALIFAX** (Two minutes from G.P.O.)

Telephone 919.

## MOTOR BICYCLES FOR SALE.

1908 Minerva, 3 1/2 h.p., in good running order, with 2 accumulators, complete, ready for the road; bargain. £7/10.—Collier, 52, Somerset St., Abertillery. [X9070]

1911 Clutch Triumph, with 2-speed gear and sidecar, all in new condition; what offers?—Collier, 52, Somerset St., Abertillery. [X9071]

1911 Rudge, in fine condition, been carefully used, and not been used with sidecar: £35, or near offer.—Collier, 52, Somerset St., Abertillery. [X9072]

RUDGE, 1911, free engine, Cowey, new Dunlops, drip feed lubricator, lamp, horn, spares, £39; Milford sidecar, F.R.S. lamp, £4; together, £42.—Howard, Bridge St., Bakewell. [X9028]

1912 Free Engine Bradbury, splendid condition, best offer accepted, Douglas or Triumph part: 2 1/2 h.p. New Hudson, accept £8/10, exchange goods.—Thos. F. Watson, Ryecroft, Ripley, Derby. [X9026]

TRIUMPH, 1910, recently completely overhauled by makers, excellent condition, with tools and spares, splendid engine; selling to buy 1913 machine; £33.—Duckworth, 2, Mere Lane, Wallasey, Cheshire. [X8997]

PREMIER, 3 1/2 h.p., 1912, as new, Millennium 2-speed, dropped frame, head light, coach-built sidecar, side lamp, Blumel's wind screen; trial; used for demonstration purposes; genuine bargain, £58.—Osborne, 19, Bore St., Lichfield. [X8960]

1911 A.J.S., 2 1/2 h.p., model B, 2 speeds, perfect order, £35; 1911 Indian, 5 1/2 h.p., and sidecar, £42; 1911 F.E. Singer, 3 1/2 h.p., £35; brand new 1913 2 1/2 h.p. Premier in stock; we are now booking orders for 1913, place your order with a reliable firm; exchanges a speciality.—North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283. [X9085]

## SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

### BIRMINGHAM.

CLEARANCE of new late 1912 machines.

SCOTT.—A few machines still due from our 1912 contract. Special enquiries invited regarding these.—Colmore, 27, Colmore Row, Birmingham. [X9182]

DOUGLAS.—A few machines still due from our 1912 contract. Special enquiries invited regarding these.—Colmore, 27, Colmore Row, Birmingham. [X9183]

MATCHLESS.—A few machines still due from our 1912 contract. Special enquiries invited regarding these.—Colmore, 27, Colmore Row, Birmingham. [X9184]

TRIUMPH.—A few machines still due from our 1912 contract. Special enquiries invited regarding these.—Colmore, 27, Colmore Row, Birmingham. [X9185]

PREMIER.—A few machines still due from our 1912 contract. Special enquiries invited regarding these.—Colmore, 27, Colmore Row, Birmingham. [X9186]

WILLIAMSON.—A few machines still due from our 1912 contract. Special enquiries invited regarding these.—Colmore, 27, Colmore Row, Birmingham. [X9187]

BIRMINGHAM Agents for Triumphs.

WE can give immediate delivery from stock of the new 3-speed Triumph, £60; free engine Triumph, £55; T.T. roadster Triumph, £50.

BUY your machine direct from the official agents, The Premier Motor Co., Ltd., Aston Rd., Birmingham. [7234]

1912 Free Engine Rudge, in splendid running order; £42.—Harris, Dunchurch Rd., Rugby. [X9016]

1912 3 1/2 h.p. Precision-engine Motor Bicycle, perfect condition: £39.—Harris, Dunchurch Rd., Rugby. [X9017]

1912 3 1/2 h.p. Penzance-engine Motor Bicycle, splendid condition; £38.—Harris, Dunchurch Rd., Rugby. [X9018]

ROYAL Enfield, 2 cyl., little used, new this year, perfect condition.—Watson's Garage, Retford. [X9032]

BATJ.A.P., 4 h.p., 1908, mag., overhauled, splendid condition: £19.—40, Wentworth Rd., Harborne. [X8727]

1909 F.N., 2 1/2 h.p., accumulator; running condition except belt: £6.—C. G. Bird, St. Martin's, Stamford. [X8926]

1911 Triumph, T.T. roadster, will do 60, and in splendid condition; £36.—25, Bedford St., Coventry. [X8999]

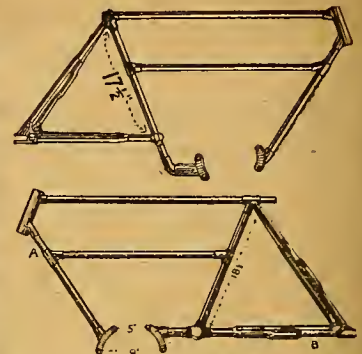
TRIUMPH, 1911, F.E., little used, 148 m.p.g., tyres as new; £40.—L. Bednell 115, Little Park St., Coventry. [X8845]

BRADBURY, 3 1/2 h.p., 1911, splendid order, new Palmer cord, 2 belts; £27.—Lloyd, Victoria Terrace, Leamington. [X9051]

2 1/2 h.p. Premier, 1912, 12 weeks' old, only ridden 700 miles; £27/10, no offers.—Hannover House, Queen Victoria Rd., Coventry. [X8424]

REX de Luxe, 1912, standard model, 6 h.p., 2 speeds, perfect, not run 200 miles; must sell; what offers?—159, Leam Terrace, Leamington. [X9050]

B.S.A., 1912, 3 1/2 h.p., free engine, all accessories, splendid condition; owner having more powerful cycle; £45.—44, Forest Rd., Nottingham. [7036]



## MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker. Two styles to choose from.

PRICE 32/6 EACH.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

NOTHING EXTRA FOR EASY PAYMENTS. We are prepared to supply almost any make of New 1912 Motor Cycles for

**1/4 DOWN**

Balance in 12 Equal Monthly Payments.

### THIS WEEK'S BARGAINS.

4 1/2 h.p. N.S.U., 2 speeds, Bosch, Druids	£24 0
1912 6 h.p. REX DE LUXE, 2 speeds, chain drive	£45 0
1910 5-6 h.p. REX DE LUXE, 2 speeds	£30 0
1907 3 1/2 h.p. TRIUMPH, extra good	£25 0
1912 2 1/2 h.p. NEW HUDSON, 3 speeds, new	£42 0
1911 3 1/2 h.p. PREMIER, 3 speeds, new	£46 0
1912 8 h.p. MORGAN RUNABOUT, new	85 Gns.
1912 3 1/2 h.p. NEW HUDSON, 3 speeds	£46 0
1910 SCOTT, a beauty	£32 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, mag., Druids, 26in. wheels	£16 0
3 1/2 h.p. TRIUMPH, 1907, magneto	£24 0
4 h.p. 1911 QUADRANT, Roc, 2 speeds	£33 0
3 1/2 h.p. 1910 L.M.C., Bosch, h-b. control	£22 0
3 1/2 h.p. 1910 TRIUMPH, beautiful order	£33 0
3 1/2 h.p. HUMBER, 2-speed model, Bosch	£23 0
1911 (Nov.) 3 1/2 h.p. RUDGE, free engine	£39 0
2 h.p. WOLF, magneto	£15 0
1911 Lady's HOBART, Armstrong 3-speed	£32 0
3 1/2 h.p. Twin PREMIER, fine machine	£25 0

### SINGLE-CYLINDER REXES.

3 1/2 h.p. 1908 Tourist, 1909 engine	£23 0
3 1/2 h.p. 1909 Speed King, extra fine	£17 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£23 0

### TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£20 0
5-6 h.p. Bosch, Lloyd's variable gear	£22 0
5-6 h.p. De Luxe, 1908, 2-speed model	£25 0

### SIDECAR COMBINATIONS.

1912 3 1/2 h.p. NEW HUDSON, 3 speeds, ten guineas sidecar, done 600 miles	£55 0
5-6 h.p. 2-speed 1908 REX and sidecar	£33 0
7-9 h.p. 2-speed REX and sidecar	£53 0

## £4 DOWN SECURES ANY OF THESE. BALANCE 25/- MONTH.

2 h.p. WOLF, mag., 26in. wheels, A.J.S. eng.	£15 0
3 h.p. MINERVA, M.O.V.	£11 0
3 h.p. BROWN, magneto, Druids	£16 0

## £5 DOWN SECURES ANY OF THESE. BALANCE 30/- MONTH.

4 1/2 h.p. N.S.U., Bosch magneto	£19 0
3 h.p. 1908 REX, Bosch magneto	£17 0
5 h.p. Twin REX, spring forks, h-b. control	£16 10
4 1/2 h.p. WOLF Tricar, 2 speeds	£19 0

### MISCELLANEOUS BARGAINS.

1912 Farrar's Sidecar, good	£3 10
D.A. 2 Bosch magneto, single-cylinder	£2 10
New Lycett's Saddle, large size	9/6
F.R.S. Headlight, new	25/-
Powell's 2-speed, free-engine back wheel	£4 15
New Basket Body, upholstered green	£1 0
One ditto, upholstered red	£1 0
1912 B. and B. Carburettors, single jet	27/-
1912 Senspray Carburettors	28/6
Sidecar Aprons, green or red, with studs	7/6

## Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,  
**HALIFAX** (Two minutes from G.P.O.)

Telephone 919.



**MOTOR BICYCLES FOR SALE.**

**OXFORD**—Eyles and Eyles, 113, St. Aldate's, have the famous G.W.K. cyclecars; immediate delivery; trial runs.

**OXFORD**—Eyles and Eyles.—1912 Scotts, B.S.A., Premiers, and Bats, 2nd-hand models; Zenith, Rudge, Premier, Scott, Kerry, Enfield, and N.S.U. machines taken in part payment. [X8300]

**DOUGLAS**, 1911, lamp, horn, studded tyres, spare tube, valves waterproof dust coat; 28 gns.—Wood, New College, Oxford. [6984]

**RUDGE** Multi latest improved model, in stock; trial runs; exchanges entertained; trade supplied.—Barnes, Colnbrook, Bucks. [X8045]

**RUDGE**, 1912, free engine model, perfect condition, tyres as new cost £55, bargain, £39; Rex, 3 1/2 h.p., mag. ignition, 1912 B. and B. carburettor, good condition, £10.—Barnes, Colnbrook, Bucks. [X8048]

**TRIUMPH**, 1911 (late), 3 1/2 h.p., free engine, grand machine, only used 9 months; £38.—Youngs, 38, Friar St., Reading. [7221]

**DOUGLAS**, 1912, model H., practically new, splendid running order; price £38, or near offer.—Roser, South Rd., Kingswood, Bristol. [X629]

**TRIUMPH**, 3 1/2 h.p., 1908 new piston, cylinder, pulley, and back cover; owner going abroad; what offers?—Cecil Odell, Newport Pagnell. [X8971]

**SCOTT**, 1912, Sept., perfect, ridden 400 miles; accept best offer over £52/10.—Newman, 16, Osbourne Villas, St. Michael's Park, Bristol. [X8898]

**SINGER**, 1912, 2 1/2 h.p., roadster, practically new, fine machine, and grand hill-climber; cost £39, accept £29.—Hartwell, 19 High St., Chipping Norton. [X8732]

**2 1/2 h.p.** Werner, Amag, h.b.c., new H. plain coil and 22 l.p. battery, good order and appearance; genuine bargain, £7.—Counsell, Corn Market, Faringdon. [7154]

**2 1/2 h.p.** Moto-Reve, 1909, fitted new carburettor, mag., drums, overhauled, and in splendid condition; £15, or exchange pony and governess car.—Wright, tailor, Witney. [6679]

**SINGER**, 1911, 3 1/2 h.p., clutch model, new condition, only done 3,000, new Stewart speedometer and Dunlop belt; £35, a snap.—Young, Advocate, Shirley Southampton. [X891]

**RE**, 5 1/2 h.p., 2 speeds, free engine, tyres, belt and pulley fitted new recently, complete with sidecar and accessories, in good running order; £30.—Baker and Sons, Reading. [7111]

**MOTO-REVE**, 2 1/2 h.p., mag., splendid running order; £15.—Baker and Sons, Reading. [7112]

**TRIUMPH**, free engine, first-class condition, lamp, horn, and apares; £34.—Baker and Sons, Reading. [7113]

**MOTOSACOCHE**, lady's, 1 1/2 h.p., mag., h.b.c., absolutely perfect; owner too nervous to ride; sacrifice, £18/10.—Baker and Sons, Reading. [7114]

**4 1/2 h.p.** F.N., 4-cyl., B. and B., h.b.c., footboards, first-class running order; £20.—Baker and Sons, Motor Cycle Engineers, Reading. [7115]

**TRIUMPH** Motor Cycle for Sale, free engine, 1911 model, excellent condition, the property of a gentleman; price £30.—Britnell and Cawter, Ltd., Petersfield. [7169]

**1912** Bradbury N.S.U. 2-speed, free engine (adjustable pulley), perfectly new condition; cost £60 June, take £50.—Horwood, Eastcote, Twyford, Berks. [7212]

**1912** Lincoln Elk, 3 1/2 h.p., as new, good condition, £25; 6 h.p. Italian Peugeot, 2-seat, good condition, 3 new tyres, Stepaney, wind screen, lamps, £35.—Cycle Depot, Highworth, Wilts. [X8836]

**1912** Triumph, free engine, F.R.S. lamp, horn, speedometer, all as new and ridden under 3,000 miles; will accept £42/10.—Box L249, The Motor Cycle Offices, 20, Tudor St., E.C. [7236]

**DOUGLAS**, 1912, 2-speed, model I., winner gold medal 6 days, lamp, horn, numerous spares, guaranteed perfect condition, fast, splendid climber; approval willingly; £40.—Gibb, Gloucester. [X9006]

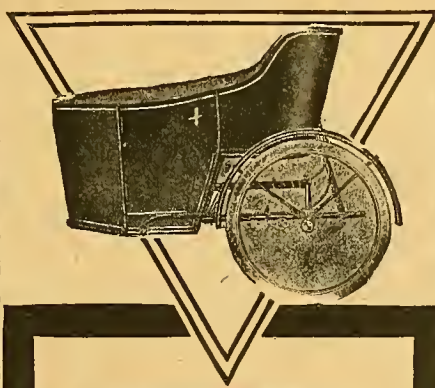
**ROYAL** Enfield, 1912, 2 1/2 h.p., 2-speed, free engine, cash drive, perfect condition, tyres almost new, not done 600 miles; can be seen any time.—St. Ippolyte, Eldorado Rd., Cheltenham. Owner ordered abroad. [X8428]

**3 1/2 h.p.** Zenith, 1909 type, J.A.P. engine, mag., graduated gear, in splendid order throughout, tyres good, new belt and a stylen lamp; accept £25 for immediate sale.—Caversham Motor Co., Ltd., Reading. [6949]

**ROYAL** Enfield, 1912, 2 1/2 h.p., 2-speed, free engine, lamp, horn, Jones speedometer, back rest, Brooks valve, Binks 3-jet automatic carburettor, tools, spares, new Michelin back tyre, perfect condition; £42, no offers.—Pridham, Stroud, Glos. [X8647]

**FOR** Sale, 2 1/2 h.p. Royal Enfield motor cycle, Minerva engine, m.o.v., accumulator ignition, h.b.c., 2 new Michelin tubes, Dunlop tyres re-treaded, new Lycett belt, first-class condition throughout; £18; inspection by appointment.—B., 134, Castle Hill, Reading. [X8435]

**END** of Season; must clear.—2 1/2 h.p. 1910 Douglas, good condition, £18; 2 1/2 h.p. 1911 Douglas, perfect condition, £27; 2 1/2 h.p. 1912 Alldays-Matchless, new, usual price 43 gns., £41; 3 1/2 h.p. 2-speed 1912 Alldays-Matchless, usual price 48 gns., £46; 2 1/2 h.p. 2-speed 1912 Enfield, new, usual price 50 gns., £43.—Apply, O. H. Cox and Co., Ltd., Castle Rd., Southsea, Hants. [7008]

**WHY NOT—**

fit your machine for the  
Winter with one of the  
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**P.M.C.**  
Sidecars

—they are of light weight,  
perfectly sprung, of long  
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P.M.C. Sidecars is of the  
finest quality obtainable—  
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Telegrams: "Primus, B'ham."  
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**MOTOR BICYCLES FOR SALE.**

**1908** Triumph, re-plated, re-enamelled, thoroughly overhauled, including new cylinder this year; honestly worth £28; best offer over 18 gns. has it. This is a perfectly genuine offer. On Oct. 10th we advertised in "The Motor Cycle" 4 2nd-hand motor cycles, and they were all sold at once, in each case to the highest bidder, and we shall do the same with this machine.—Julian, 84, Broad St., Reading. [X8965]

**1912** Premier, 2 1/2 h.p., new belt, absolutely grand condition; cost £36 this year, honestly worth £30; best offer over 22 gns. has it. This is a perfectly genuine offer. On Oct. 10th we advertised in "The Motor Cycle" 4 2nd-hand motor cycles, and they were all sold at once, in each case to the highest bidder, and we shall do the same with this machine.—Julian, 84, Broad St., Reading. [X8966]

**SECTION VIII.**

Hertford, Essex, Middlesex, Surrey, Kent,  
and Sussex.

**NYE'S** Annual Clearance Sale.—See large ad.

**NYE'S**—1912 Bat, T.T. model, grey, almost new; £35.

**NYE'S**—1912 B.S.A., 2-speed, almost new; cost £60; £45.

**NYE'S**—1912 Bradbury standard, fine condition; £32.

**NYE'S**—1912 Bradbury 2-speed, chain driven, as new; £48/10.

**NYE'S**—1912 6 h.p. Bat, chain drive, 2-speed, as new; cost £75; £65.

**NYE'S**—1912 Triumph, free engine, new April; £42.

**NYE'S**—1912 Premier, free engine, new April; £39.

**NYE'S**—1912 T.T. Rudge, fine condition; £38.

**NYE'S**—1911 T.T. Triumph, fine order; £31.

**NYE'S**—1911 Free Engine Rudge; £35.

**NYE'S**—1910 Free Engine Triumph, 1912 improvements; £35.

**NYE'S**—1911 Kerry-Abingdon, fine order; £26/10.

**NYE'S**—1911 Humber 2-speed and sidecar, lamp, horn, etc.; £42.

**NYE'S**—1911 Motosacoché, 2 1/2 h.p. model, as new; £22.

**NYE'S**—1911 7 h.p. Rex and Sidecar, overhead valves, 2 speeds; £38/10.

**NYE'S** Sale open from 9 a.m. to 9 p.m.; 14 days only. Close to Maples and Euston Roads, 5 min. Gt. Portland St.—16, Hampstead Rd., Tottenham Court Rd., London. Tel.: 3625 North. [7227]

**RUDGE**, F.E., cost £55 in June; real snip, 35 gns.—Bunting, Wealdstone. [X9136]

**DOUGLAS**, lovely little machine, tyres and other parts simply splendid; £22/10.—Bunting, Wealdstone. [X9138]

**TAYLOR'S**—6 h.p. 1912 Cluyo and sidecar combination, not run 700 miles; £55.

**TAYLOR'S**—3 1/2 h.p. 1911 clutch Triumph, N.S.U. 2-speed; £42/10.

**TAYLOR'S**—3 1/2 h.p. 1912 2-speed; immediate delivery; new; £60.

**TAYLOR'S**—3 1/2 h.p. 1911 P. and M. and Gloria sidecar, fine condition; £60.

**TAYLOR'S**—5 h.p. 1912 A.J.S., 2-speed, perfect; £55.

**TAYLOR'S**—6 h.p. 1912 A.O. Sociable de Luxe, wind screen, etc., new; £99.

**TAYLOR'S**—1912 3 1/2 h.p. Zenith; £39/10.

**TAYLOR'S**—3 1/2 h.p. 1911 P. and M., 2 speeds; £45.

**TAYLOR'S**—3 1/2 h.p. 1909 P. and M., 2 speeds; £31/10.

**TAYLOR'S**—5 1/2 h.p. early 1912 F.N. model, 4-cyl., 2 speeds, fine condition; £42/10.

**TAYLOR'S**—3 1/2 h.p. 1910 clutch Triumph, good condition; £31/10.

**TAYLOR'S**—6 h.p. 1912 Rex de Luxe, not run 200 miles; £45.

**TAYLOR'S**—3 1/2 h.p. 1912 clutch Bradbury and sidecar, soiled only; bargain, £52.

**TAYLOR'S**—3 1/2 h.p. 1911 Zenith-Grudua and sidecar; bargain, £28/10.

**TAYLOR'S**, Sole London and District Agents for the A.J.S.—21a, Store St., W. [7043]

**3 1/2 h.p.** Rex and Sidecar, good running order.—20, Reginald Rd., Bexhill-on-Sea. [7033]

**1910** 2 1/2 h.p. Motosacoché, as new, mag., new tyres, belt; £13.—3, Rushey Green, Catford. [7095]

**ARIEL**, 3 1/2 h.p., very low, B.B. h.b.c., tools; bargain, £6.—Perry, 64, Claremont Rd., Leytonstone. [7032]

**TRIUMPH**, 1909, Mabon F.E., £26, faultless; sidecar, £2.—Ball, 49 High St., Kingston, S.W. [6998]



**MOTOR BICYCLES FOR SALE.**

- 1912 Douglas, latest model K, almost new; £40, cost over £50.—SurrIDGE, Ongar, Essex. [X8985]
- MOTOSACOCHE, 1911, £18; and one Motosacocche, 1909, £15.—SurrIDGE, Ongar, Essex. [X8986]
- F.N., 4-cyl., shaft drive, mag., good order; £19.—SurrIDGE, Ongar, Essex. [X8987]
- 1912 Lady's Enfield, 2 speeds, free engine, chain drive; £40.—SurrIDGE, Ongar, Essex. [X8988]
- RUDGE, 1912, fine machine, very fast, little used; £34.—SurrIDGE, Ongar, Essex. [X8989]
- WANDSWORTH.—F.N., latest 1912, 6h.p., 4-cyls., mag., done 700 miles, as new; £43/10.—Below.
- WANDSWORTH.—F.N., late 1910-11, 2h.p., m.o.v., mag., 2 speeds, free, fine order; £22/10.—Below.
- WANDSWORTH.—F.N., late 1911, 6h.p., 4 cyls., mag., drip feed, just like new; £33/10.—Below.
- WANDSWORTH.—But-Jap, late type, 9h.p. twin, mag., fine powerful sidecar machine; £28/10.—Below.
- WANDSWORTH.—Roc, late type, 4h.p., m.o.v., 2 speeds, nice order; sacrifice £23/10.—Below.
- WANDSWORTH.—Chater-Lea, fitted with 5-6h.p. twin Kersy engine, take sidecar; very cheap, £12/15.—Below.
- WANDSWORTH.—N.S.U., 3h.p., m.o.v., mag., new belt, beautiful order; great bargain, £14/10.—Below.
- WANDSWORTH.—Rex, 1909, 5-6h.p. twin, mag., new Binks, free engine, handle starting; £26.—Below.
- WANDSWORTH.—Triumph, 1908, 3h.p., mag.; £22; exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth Station. [X9113]
- EAGLES.—Zenith-Gradan, 6h.p. twin, 1912 model, new in July, perfect condition, all accessories; £55.
- EAGLES.—Bradbury, 1910, N.S.U. 2-speed gear, free engine, exceptional condition; £34; all accessories.
- EAGLES.—N.S.U., 3h.p., 1908, mag., spring forks, h.b.c., adjustable pulley, little used; £17.
- EAGLES.—N.S.U., 3h.p., Model de Luxe, late 1911 model, latest improvements, spring frame, N.S.U. 2-speeds, free engine; £34/10.
- EAGLES.—Lincoln Elk, 3h.p., 1911, Bosch mag., Druids, B. and B. carburettor, all accessories; £18.
- EAGLES.—N.S.U., 3h.p., single-cyl., new last June, mag., 1911 spring forks, new condition; £21.
- EAGLES.—Zenith-Gradan, 3h.p., late 1911, perfect condition, with 1912 Milford 10/10 sidecar, all accessories; £43/10.
- EAGLES.—N.S.U., 3h.p., popular model, new last June, as new, mag., 1911 spring forks, adjustable pulley, new Duoalop belt, Palmer cord tyre; £24/10.
- EAGLES.—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engines, from £5/15, for Triumph £6/15, for Bradbury £7; trade supplied.
- EAGLES.—We have a few brand new 3h.p. 1911 N.S.U. 65x88 Model de Luxe, just delivered, fine machines for sidecar work, Bosch mag., 1912 spring forks and other improvements, finished in latest style, complete with stand, carrier, tool case, full set of tools, £37; N.S.U. 2-speed gear, £5/15 extra; Milford Herald sidecar with No. 1 torpedo body, £7/15 extra; deferred payments, exchanges entertained.
- EAGLES and Co., High St., Acton.—N.S.U. West London District Agency. Liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X9010]
- J.A.P., 8h.p., Bosch, B. and B.; £20; first-class condition; after 7—6, Bowron's Av., Wembley. [7209]
- F.N. Motor Cycle, 4-cyl., mag., spring forks; genuine bargain, £16/10.—Limes, Sudbury, Middlesex. [7218]
- NEW Bosch 1912 Twin Magneto, £4/15; new N.S.U. 2-speed gear, £5/5.—1, Ebner St., Wandsworth. [X9113]
- 3h.p. Rover, m.o.v., perfect order throughout; trial; sacrifice £8/10.—Speckley, 45, Church Rd., Acton. [7054]
- DOUGLAS, 1912, Model G, new condition, not ridden 3 months; £31.—W. Shutes, 3, Wilbury Av., Hove. [7027]
- F.N., 2h.p., 2-speed, F.E., 1910, good running order; £24.—Crags, Merivale Nurseries, Heston, Middlesex. [7092]
- ZENITH. 1913 models: early delivery guaranteed.—Z. Wembleton Motor Agencies, 1, York Rd., Wembleton. [7035]
- REX, 4h.p., mag., perfect tyres, and thorough running order; £11.—Clark, 7, Lychett Rd., Bromley, Kent. [6969]
- 1910 5-6h.p. 4-cyl. F.N. Michelin light car tyres, splendid mount; £19/10.—111, Walton Rd., East Molesey. [X8996]
- 2h.p. A.J.S., 1911, lamp, horn, tools, spare belt, excellent condition; £25.—Chilton, High St., Watford. [7116]
- RUDGE, 1912, brand new, in crate, taken for debt; accept £40.—Wright, Silverdale, Sunnyside Rd., Ilford, E. [X8163]

ESTABLISHED 20 YEARS "IN THE HEART OF THE TRADE"



Two-speed, two-stroke Scotts will be scarce after the Show. We foresaw this five or six months ago, and placed our 1913 contract then. Even now we shall probably be short of sufficient supplies for all our customers, so we strongly advise ordering early.

## BOOK YOUR SCOTT before the rush, earmark one from our (COLMORE) contract.

Remember the Scott not only has speed and power, evidenced by the result of the T.T. race, but it has complete reliability, proved by its splendid record in the great test of the year, the A.C.U. Six Days' Trial. Beyond this, it is distinguished from all other motor bicycles by its silence and comfort.

We have a few 1912 Scotts still to come from our 1912 contract (which was an all-the-year-round one, and does not expire for another few weeks). We are prepared to make exchanges or special terms for these late 1912 Scotts.

# COLMORE,

35, Colmore Row, Birmingham.  
261, Deansgate, Manchester.  
62, High St., Leicester.  
45, John Bright St., Birmingham.

**MOTOR BICYCLES FOR SALE.**

- 4h.p. Twin Werner, 2-speed, handle starting; £11 cash.—13, E. Block, Cambridge Cottage, Woolwich. [7101]
- MINERVA, 2h.p., tyres good, new Lyso, and Olco plug, engine splendid; £5 secures.—Howlett, Manningtree. [7085]
- 1912 Douglas, £33 spares, lamp, and horn, speedometer £1/10.—Richardson, 62, Broadwater Rd., Tottenham. [X8916]
- 3h.p. Pafnir, 2-speed, mag., B. and B. combined drive, Chater fittings; £23.—30, Ravenswood Rd., Balham. [X8949]
- 3h.p. J.A.P., special ball bearing engine, overhead valves, very fast, near new, latest pattern frame; accept £21 to clear.—30, Ravenswood Rd., Balham. [X8950]
- 3h.p. Fleet, good condition, tyres perfect; bargain, £28.—J. Webb, 10, Leatherdale St., Globe Rd., Mile End. [7165]
- V.S., 1909, 5-6h.p., recently rebushed and overhauled, Bosch, B. and B. spares; £24.—B., 23, Ligon Rd., Wallington. [7137]
- MATCHLESS, 8h.p., as new, 1911, 2 belts, spare cover, lamp, horn; £50, no offers.—86, Uxbridge Rd., West Ealing. [X8862]
- 3h.p. Quadrant, spring forks, Brown and Barlow, £2 Whittle, suitable for sidecar; £12/15.—739, Old Kent Rd., S.E. [7076]
- £8.—Chater-Lea-Minerva, Dunlops, 2h.p., good condition, perfect order.—36, Stroud Green Rd., Finsbury Park. [7187]
- BRADBURY, 1912, 2,000 miles, usual accessories, perfect order, tyres sound; £39.—179, East St., Walworth, S.E. [7167]
- DOUGLAS, 1911, late, not more than 1,500 miles, light use only; £33, practically new.—Bond and Russell, Bexhill. [6350]
- 1912 T.T. Roadster Triumph, Lucas lamp, 3 belts, as new; 40 gns.—Bassett, Holyrood, Aldersbrook Rd., Manor Park. [6941]
- DOUGLAS, late 1910, has new tyres and belt, lately overhauled; £23, or near offer.—Barraud, 57, Ardgowan Rd., Catford. [X8846]
- 3h.p. Premier Motor Cycle, free engine, 1911 model, £2 practically new condition; £35.—25, Grosvenor Mews, Bond St., W. [6997]
- 1912 2h.p. Premier, as new, 200 miles, 3-speed, free engine, lamp, horn, and spares; £35.—Turner, 137, High St., Acton. [7070]
- TRIUMPH, late 1910, lamp, horn, mirror, tyres as new, recently overhauled, perfect; £28.—Avondale, Bective Rd., Putney. [7083]
- TRIUMPH, 1912, standard, condition perfect, had little usage; bargain, £39.—1,037, Forest Rd., Upper Walthamstow. [7172]
- 1912 Bradbury, N.S.U. 2-speed, var. pulley, condition as new; what offers; buying 1913 model.—Street, outfitter, Deal. [7201]
- 1911 Humber, 3h.p., guaranteed first-class order, with sidecar, new tyres; £32.—Bryant, St. Peter's St., St. Albans, Herts. [7162]
- BRADBURY, late 1911, speed model, Service belt, lamp, etc.; £31, or exchange for 8h.p. J.A.P.—50, Manor Rd.—Brookley, S.E. [6972]
- INDIAN, 1911, 7h.p., red, free engine, chain drive, fast; trial given; to clear £38.—Clarke's Motor Cycle Works, St. Albans. [6960]
- REX, 1908, running order, Bosch, 1911 B. and B., good tyres; £18.—H. Bryans, Manor House, Woodmansterne, Surrey. [7173]
- 3h.p. Victo, low, good condition, £10; also Amac carburettor, 15/; twin Antoine cylinder, £1.—15, Fleming Rd., Kewington. [7068]
- SPEED King Rex, 6h.p., twin, 1911, speedometer, lamp, etc., splendid condition; £30.—122, Napier Rd., Leytonstone. [7060]
- TRIUMPH, 3h.p., 1912 (July), free engine model, not ridden 2,000 miles; £45; inspection invited.—Byrnes, 14, Talbot Rd., W. [6955]
- 2h.p. De Dion, Amac h.b. carburettor, spring fork and seat pillar; seen any time; £10.—36, Stroud Green Rd., Finsbury Park. [7190]
- 3h.p. New Hudson, 1912; horn, lamp; £40, or £4 nearest cash offer; used week-ends.—E.R.H., 61, Haverstock Hill, Hampstead. [5734]
- REX, 3h.p., 2-speed, F.E., handle starting, dual ignition, B. and B. h.b.c. footboards; £8/10.—H., 55, Pepys Rd., Wimbledon, S.W. [7193]
- 1908 Motococche, Palmers unscratched, spring forks, accumulator, stand and carrier, perfect; £12.—722a, Old Kent Rd., S.E. [7077]
- 3h.p. Minerva, m.o.v., Amac carburettor, h.b.c., Dunlop tyres and belt, good order; bargain, £21/10.—224, Wood St., Walthamstow. [X8899]
- PRACTICALLY New 1911 5-6h.p. F.N., guaranteed perfect, exceptionally fine engine, unscratched; £32/10.—186, South Lambeth Rd. [X8957]
- SCOT-CHATER, 3h.p., perfect throughout, B. and B., tyres, belt, excellent, accumulator; £9.—Langley, Pretoria Rd., Romford. [713]
- TRIUMPH, May, 1911, standard, perfect condition, Triumph head light, and accessories; lowest £35.—5, Heath Rd., Thornton Heath, Surrey. [699]



**MOTOR BICYCLES FOR SALE.**

**MILLS** and Co., North Finchley, sole London agents, etc., for the Regal-Green-Precision, the holder of the world's sidcar records.

**MILLS**.—1911 clutch Rover, thoroughly overhauled, done up as new; £35.

**MILLS**.—1911 Bradbury and sidcar, excellent condition; £32.

**MILLS**.—1912 4 1/2 h.p. Quadrant and sidcar, hardly been used; £45.

**MILLS**.—1912 4-cyl. F.N., perfect; £35.

**MILLS**.—1912 Zenith, splendid condition; £40.

**MILLS**.—1911 twin Rex; real bargain, £28.

**MILLS**.—8 h.p. J.A.P. (overhead), very fast; £36.

**MILLS**.—1911 Clyno combination, just overhauled; offers?

**MILLS**.—3 1/2 h.p. Arno and sidcar; £21.

**MILLS**.—4 1/2 h.p. 1912 Regal-Precision, 3-speed, unridden; £54.

**MILLS**.—2 1/2 h.p. 1912 New Hudson, 3-speed, unridden; £42.

**MILLS**.—1909 T.T. Rex, done up as new; £22/10.

**MILLS** has in Stock the famous Regal sidcar, specially suitable for light machines and fast riding.

**MILLS**.—Montgomery sidcar, done up and as new; £8.

**MILLS** has Several 2nd-hand Sidcars. [7056]

**TRIUMPH**, 1912, F.E., quite new, with accessories, taken for debt; what offers for cash.—Green, Wayside, Golder's Green Rd., N.W. [X8164]

**RUDGE**, 1912, as new, with accessories; £38.—Green, Wayside, Golder's Green Rd., N.W. [X8165]

**INDIAN**, 7 h.p., 1912, free engine, blue, fine condition, new Peter Unions; seen London or country; £47.—Kirkella, Harpenden, Herts. [6681]

**N.S.U.**, 3 1/2 h.p., 1909, free engine, 2-speed, mag., new tyres, perfect; £18, near offer, bargain.—Gardiner, 16, Priddleway Rd., Clapham. [7159]

**3 1/2 h.p. Brown**, Chater, B.B., h.b.c., mag., new tyre, 32 footboards, lamp, and all accessories; £15, or near offer.—20, Milkwood Rd., Herne Hill. [X9120]

**TRIUMPH**, 1912, 3 1/2 h.p., free engine model; instant delivery; £55, cash, or deferred payments.—John Barker and Co., Kensington High St., W. [0130]

**ROC**, 1911, 6 h.p. twin 2-speed gear, handle starting; sale £30, or exchange for T.A.C. or Indian.—R. Thompson, Cherkley Court, Leatherhead. [6936]

**RUDGE Multi**, 1912, condition as new, grand machine; cost £60, accept £44 for quick sale.—Jeffers, West, photographer, Cobham, Surrey. [7049]

**TRIUMPH**, 1912, free engine model, all accessories, and first-class sidcar, net done 1,000 miles; £50, Hesse and Savory, Callow St., Fulham Rd. [7047]

**2 1/2 h.p. Torpedo Precision**, August, 1912, condition as new, 2 1/2 exhaust whistle; £36; getting sidcar machine.—Oldwell, Great Maplestead, Essex. [7020]

**2 1/2 h.p. 1910 Bat-Jap**, spring frame and forks, Bosch mag., Amac, good tyres, just overhauled; worth inspection; £32/10.—29, East St., Barking. [X8946]

**3 1/2 h.p. Peugeot**, Bosch, F.E., Roc 2-speed gear, 1 in. 32 Whittle belt splendid condition; £22; also sidcar, almost new, £4.—403, Barking Rd., Essex. [7025]

**REX**, 1908, 5 h.p. twin spring forks, h.b.c., new Palmer back, Mabon clutch, £12; also new sidcar, 3.—Robinson, Sayesbury Rd., Sawbridgeworth. [X8375]

**2 1/2 h.p. Pebok**, torpedo tanks, B. and B., low, fast, footboards, new accumulator; £12, nearest offer.—Fennan, 9, Cazenove Rd., Stamford Hill, London. [X8970]

**1912 New Rover**, clutch model, with horn, spares, not used. £54.—Apply, Thompsons, 83, Anlaby Rd., Hull, or Holm, 2, Gordon Place, London, W.C. [X8924]

**PHILON** and Moore, Ltd., 4, Percy St., W., have several 2nd-hand P. and M.'s for sale; particulars a application, or can be seen at above address. [0131]

**1912 T.T. Rudge**, very fast, B. and B. carburettor, knee grips, h.b.c. mag., competition winner; £36, good offer.—Homestead, New Thundersley, Essex. [6702]

**2 1/2 h.p. Minerva**, adjustable pulley, Kempshalls, long exhaust pipe whistle; £10, or exchange twin engine, mag.—697, Seven Sisters Corner, S. Tottenham. [7109]

**1915—1909 3 1/2 h.p. Silver Quadrant**, 1912 B. and B. mag., Continental, adjustable pulley, spring forks, perfect, reliable, low.—10, Bismarck Rd., Highgate, N. [X9015]

**1912 Hobart**, 4 h.p. twin 2 speeds, all accessories; £38, or near offer, or exchange 5 h.p. combination, cash adjustment.—93, High St., Cheriton, Kent. [7066]

**T.T. Bat-Jap**, 3 1/2 h.p., 1911, lamp, horn, Cowey, Druids, new belt, spares, tyres good, condition excellent; 3 sps., or offers.—H., 293, Upton Lane, Forest Gate. [7153]

## 'THE GARNER' LIGHTWEIGHT ALARM

is designed and made especially to meet the requirements of lightweight motor cycles.

THE . . .  
DELIGHT OF  
THOUSANDS.



PRICE:  
NICKEL-PLATED - 12/6  
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It is, therefore, the most suitable one for the purpose, for, besides being specially designed, it embodies all the well-known features of the "Garner" M.C. Alarm, and it can be relied upon to do its duty in an effective but pleasing manner.

Send for one to-day.

**HENRY GARNER,  
LTD., Dept M1.  
Moseley Motor Works,  
BIRMINGHAM.**

**MOTOR BICYCLES FOR SALE.**

**15—3 h.p. Peugeot**, Chater-Lea, B. and B., h.b.c., Whittle.—To view, Lane's, 14, Queen's Rd., Walthamstow.—Letters, Ower, 11, Belgrave Rd., Walthamstow. [6930]

**P. and M.**, 1912, splendid condition, tube case, spare tube and valve, extra toolbag, Lucas King of Road lamp set; £52.—Boyer, 605, Alexandra Park Rd., Wood Green, N. [X8954]

**NEW Hudsons** from 47 gns., or 67/- monthly; Ariels from 240, or 55/- monthly; all models stocked; exchanges.—Lamb's Motor Stores, 151, High St., Walthamstow. [5905]

**TRIUMPH**, late 1911, free engine model, in perfect condition, including extra tubes and spares; expert examination invited; £40.—Redding, 35, Westwell Rd., Streatham. [7240]

**DOUGLAS**, 1910, had very little use, lamp, generator, horn, valve on carrier, perfect running order; genuine bargain; £26/10.—Pawnbroker, 168, Wandsworth Rd., Vauxhall, S.W. [X8872]

**T.A.C.**, several 1911, in excellent condition, thoroughly overhauled and adjusted; low price for quick sale.—The Wilkinson T.M.C. Co., Ltd., Oakley Works, Southfield Rd., Acton. [0152]

**B.S.A.**, 1912, 3 1/2 h.p., free engine, quite new, a little soiled; only £42 cash, or low easy payments, usual price £56/10.—Wilkins, Simpson and Co., 11, Hammer-smith Rd., London. [7135]

**B.S.A.**, 1912, 3 1/2 h.p., 2-speed gear, quite new, a little soiled; only £48 cash, or low easy payments, usual price £60.—Wilkins, Simpson and Co., 11, Hammer-smith Rd., London. [7136]

**2 1/2 h.p. J.A.P.**, grey, racer, and modern appearance; very low, powerful, triple h.b.c., new tyres and belt, everything excellent condition, accessories; £12.—5, Amesbury Av., Streatham. [7038]

**TRIUMPH**, 1910, standard, exceptional condition, been carefully used, lamp, horn, spare valve, new covers; price £30, or with torpedo sidcar £34.—1, Thurlough Av., Balham, S.W. [6999]

**3 1/2 h.p. Chater-Lea**, mag., B. and B., brand new tyres, 32 tubes, and 1 in. Lyso belt, Davidson tank, lamp, generator, horn; any trial; bargain; £21; buying car.—Mantabini, Aerodrome, Hendon. [X8346]

**TRIUMPH**, late 1910, purchased 1911, 3 1/2 h.p., first-class condition, thoroughly overhauled, re-commissioned last month, lamp, horn, spares; £29/15, bargain.—Reeves, 22a, Oxford St., Whitehall. [X8904]

**BRADBURY**, 1911, standard, extra fast engine as new, plating, enamelling excellent, brand new back tyre; £32/10; appointments by telephone, 1388 Sydenham.—Truss, Fox Hill, Norwood. [7029]

**BALHAM**—Rudge, free engine, only few weeks old, unpunctured, absolutely better than new, complete with P. and H. lamp set, valves, 3-note horn, spare tube; cost £58, accept £45.—Below.

**BALHAM**—Royal Enfield, 2 1/2 h.p. twin, late 1910, excellent order, lamp, horn; accept £18/10.—Poncock, 274, High Rd., Balham. Phone: Battersea 1903. [7062]

**1911 Motococche**, 2 1/2 h.p., free engine, only run 600 miles, tyres unpunctured, absolutely new condition; will take 19 gns., no offers.—Box L243, The Motor Cycle Offices, 20, Tudor St., E.C. [7194]

**1911 Douglas**, 2 1/2 h.p. twin 2 speeds, free engine, handle starting, splendid condition, carefully used; any test given; sacrifice 29 gns., genuine bargain.—Box L242, The Motor Cycle Offices, 20, Tudor St., E.C. [7193]

**6 h.p. Matchless**, 1912 Amac carburettor, 2 speeds, free engine, vorticity back, Brooks back rest, most reliable, will take 2 passengers and sidcar anywhere without strain; 36 gns., no offers.—S.R.L., St. John's Terrace, Sutton, Farnhamham, Surrey. [7192]

**2 1/2 h.p. Quadrant**, 1911 B. and B. h.b.c. carburettor, 24 low, powerful, fast, Shamrock belt, trembler coil, Palmers, good condition throughout, all accessories; bargain, £6.—17, Ford Sq., Mile End. [7140]

**TRIUMPH**, 1912, free engine, in new condition, tyres unpunctured; any trial and examination; lamp, generator, all spares; accept first 40 gns., a genuine bargain.—J. Leach, Steine St., Brighton. [7003]

**4 h.p. Bat-Jap**, Sept., 1909, splendid condition, good tyres, new mag. and B. and B. carburettor, everything complete; £28, a bargain; owner going in for car.—W. Harrison, Tipton, Arundel, Sussex. [7128]

**BRADBURY**, 1912, new August, not been 200 miles, Sturmer-Archer 3-speed gear, cost £58/10, good as new; £46 cash, or low easy payments.—Wilkins, Simpson and Co., 11, Hammersmith Rd., London. [7134]

**QUADRANT**, 1912 T.T., 3 1/2 h.p. model, P. and H. lamp, generator, all in fine condition, only done 2,000; £26 for quick sale, exceptional bargain; seen after 8.—Millar, 92, Avondale Rd., Croydon. [X8843]

**£35—3 1/2 h.p. 1911 Rover**, plate clutch model, Cowey speedometer, P. and H. head lamp and generator, F.E.S. back rest on saddle, Whittle belt, tools, and spares, in splendid order.—Central Garage, Bromley. [6986]

**1910 Viadec Special**, 6 h.p., Bosch, free engine, B. and B., very powerful, new condition, all accessories; £29; exchange lower power and cash.—Rose, 29, Sonning Buildi, Mount St., Bethnal Green. [7024]

**ZENITH** (August, 1912), as new, 6 h.p., Gradna gear, tools, Hutchinsons tyres, etc.; full details on request; any reasonable trial given; £60, or offer; buying car.—Write Zenith, 1, Campbell Rd., Croydon. [X8982]



## MOTOR BICYCLES FOR SALE.

**RUDGE**, 1911, 3½ h.p., T.T. register, all in good condition, new Dunlop studded rear; £30.—Laurel Cottage, 112, Hatfield Rd., St. Albans. [6961]

**F.N.**, 1911, 4-cyl., in really good condition, new tyre rear; trial given; £25.—Searle, 66, Victoria St., St. Albans. [6962]

**F.N.**, 4-cyl., 4½ h.p., clutch, £23 worth 1912 improvements and accessories; speedometer, footboards, 800 miles ago, splendid condition; £30, near offer.—Harrison, 26, Carysfoot Rd., Crouch End, N. [7088]

**TRIUMPH**, 1910, N.S.U. 2-speed gear, Millford 29/9 sidcar, Autochipse lamp, watch, belts, valve, tools, plugs, overalls, numerous oddments; £42; giving up riding.—J. Summers, Parkdale, Burghill, Sydenham. [X8902]

**LOOK**, a genuine offer.—Triumph, 1910, absolutely perfect, carefully used, 2 almost new covers, and several accessories, for £35, including sidcar, or near offer.—H.S.F., 3, Gracedale Rd., Streatham Pk., S.W. [7084]

**RUDGE**, June, 1912, free engine, at present being thoroughly overhauled by makers, guaranteed perfect; £40, or exchange.—Write, Rudge, 13, Conway Villas, Conway Rd., Southgate, N. [Phone: 3961 Central. [7017]

**8 h.p. Matchless-Jap and Sidcar**, with castor wheel and new basket, 2-speed, P.E. spring forks, J.A.P. carburetter, h.b.c., Whittle belt; bargain, £37/10.—Little Britain Engineers, Gaiton Rd., Tooting Broadway, S.W. [X9019]

**TRIUMPH**, 3½ h.p., 1911, free engine, condition as new, very little ridden, Kempshall back tyre, with every accessory, £40; with trip speedometer, £42.—Green, Park Lodge, Fairfield, Kingston-on-Thames. By appointment. [X9090]

**J.A.P.-CAMPION**, 4 h.p., 1912, free engine, easy starting, Bosch Druid tools, low built, generator, lamp, B. and B.; cost £50 this summer; sell £39, or nearest; perfect running, like new.—115, Ivanhoe Rd., Denmark Park, S.E. [7006]

**CHATER-LEA** No. 7 8 h.p. Motor Cycle, J.A.P., with Chater-Lea coach-built sidcar, hood and screen, speedometer, acetylene lamp set, horn, perfect condition; buying a motor car; best offer.—Barnes, 3, Rathbone Place, London, W. [X8841]

**DOUGLAS**—Three machines for sale, two 1909 models, £18 and £19; and one 1911 model, £28 this machine is very fast; all in perfect running order; guaranteed; carriage paid on machines for cash.—Lloyd and Son, Douglas agents, Lewes. [X8875]

**REX-J.A.P.**, 1912, 8 h.p., Roe 2-speed, B. and B. carburetter, 1,200 P.R.S. lamp, 80 Cover speedometer, spares, valves, etc., extra strong handle-bars for sidcar combination, ridden 500 miles; accept £68.—26 Prince of Wales Mansions, Battersea Park, S.W. [6967]

**DOUGLAS**, 1909, 2½ h.p., in splendid condition, not run 500 miles, owner used car, inner tubes brand new, covers quite good, sundry improvements; lowest price £18, no offers; seen by appointment.—C. V. Turk, 28, Cavendish Sq., London, W. Tel.: 1721 Pad. [7163]

**GUILDFORD**—Crow Bros., 190, High St., offer end of season bargains: 1912 6 h.p. Zenith, speedometer, £54; 1912 model K Douglas, spares, £42; 8 h.p. Chater-Lea-Jap, No. 7, £58; 1912 2½ h.p. Premier, speedometer, £28; brand new, unspratched, 3-speed 3½ h.p. Singer, £54. [7156]

**INDIAN**, 1912, 7 h.p. clutch model, with kick starter, fitted with 4 gn. Cover speedometer, Lucas lamp, Serpentine horn, and handle-bar mirror, bought in May last, and only ridden about 2,500, splendid condition; £50; can be seen by appointment.—Old Park, Palmer's Green, Southgate, N. [7232]

**QUADRANTS**.—Call and inspect stock at Cass's Motor Mart, the sole agents, or write for catalogue giving complete specifications of the famous 4 h.p. passenger Quadrant, fitted with Armstrong 3-speed gear, the most efficient combination for solo and sidcar work, and the cheapest of its power; exchanges or extended payments. [7232]

**CASS'S**—Scott, late 1911, splendid order throughout; £45, or near offer. [7232]

**CASS'S**—N.S.U., 6 h.p., 1912, spring frame, 2-speed, free engine, accessories; £45. [7232]

**TRUMP-J.A.P.**, 3 h.p., 1912 model, twin; £44. [7232]

**MOTOSACOCHE**, 1912, 2½ h.p., brand new, variable gear; £35. [7232]

**CASS'S**—Triumph, 3½ h.p., 1909, thoroughly overhauled; bargain, £27. [7232]

**CASS'S**—J.A.P., 3½ h.p., mag.; any examination; £17/10. [7232]

**CASS'S**—Last week of clearance sale of 2nd-hand and shop-soiled machines at genuine bargain prices. Call and inspect stock, or write for detailed list. Exchanges or extended payments.—Cass's Motor Mart, 5, Warren St., W. (opposite Warren St. Tube Station) Tel.: 3624 Mayfair. [7129]

**1912 Bradbury**, 3½ h.p., 2-speed gear, absolutely perfect running order, £40; 1912 3½ h.p. Bradbury, clutch model as new, £42; 1912 3½ h.p. New Hudson, run 800 miles only, 3-speed Armstrong, £45; 1911 2½ h.p. Motosacoché, free engine, £20; 1911 clutch Triumph, £35; 1910 clutch Triumph, real good, £35; 1908 standard Triumph, perfect order, £23; every machine guaranteed.—Batchelor, Clarence St., Kingston. [X9100]

**1912 Triumph**, 3-speed, Sturmer-Archer hub (fitted by Triumph), in stock; £59/5; immediate delivery.—Batchelor, Clarence St., Kingston. [X9101]

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The Man to supply your next Mount.

## GREAT CLEARANCE of 1912 Stock.

## NEW MOTOR CYCLES (ONLY SLIGHTLY SHOP-SOILED).

<b>SCOTT</b> , 1912 model, "XL'All" saddle, just from works. Usual price, £65 to 6	<b>£62 10</b>
<b>BAT-J.A.P.</b> 3½ h.p., with P.M. chain drive, 2-speed gear, heavy tyre rear, spare valve, as good as money can buy. Usual price, £60	<b>£54 0</b>
<b>BRADBURY</b> 3½ h.p., N.S.U. 2-speed pulley. Usual price, £56 6s.	<b>£46 0</b>
<b>BRADBURY</b> 3½ h.p., free-engine model. Usual price, £54 10s.	<b>£44 0</b>
<b>RUDGE-MULTI</b> , 3½ h.p., pedal engine starter. Usual price, £60	<b>£50 0</b>
<b>SINGER</b> , 4 h.p., 2-sp. bracket gear model. Usual price, £65	<b>£55 0</b>
<b>NEW HUDSON</b> , 3½ h.p., 3 speeds, free eng. Usual price, £59 17s.	<b>£51 0</b>
<b>PREMIER</b> , 3½ h.p., free-engine model. Usual price, £54 17s.	<b>£44 0</b>
<b>PREMIER</b> , 2½ h.p., free-engine model. Usual price, £43 7s.	<b>£36 0</b>
<b>CENTAUR HUMBER</b> , 3½ h.p., 3 speeds and free eng. Usual price, £47 10s.	<b>£39 0</b>

## 1913 MODELS (Show delivery).

<b>CLYNO</b> , 5-6 h.p., twin, with detachable wheels.	
<b>MATCHLESS</b> 3½ h.p., twin, chain and belt drive, Gradua gear	<b>£64 1</b>
<b>MATCHLESS</b> 5 h.p., twin, Gradua gear	<b>£67 4</b>
<b>MATCHLESS</b> , No. 8, new model, 2 speeds, free engine, chain drive	<b>£73 10</b>
<b>B.S.A.</b> , 3½ h.p., 2-speed, chain drive	<b>£60 0</b>
<b>NEW HUDSON</b> , No. VIIA, complete with canoelet sidcar	<b>£75 12</b>
<b>PREMIER</b> , 3½ h.p., 2-speed counter-shaft, chain and belt drive	<b>£56 0</b>
Also <b>ENFIELD</b> , <b>RUDGE</b> , <b>SINGER</b> , <b>BRADBURY</b> for November delivery	
Best makes of Cyclecars— <b>PREMIER</b> , <b>SINGER</b> , <b>SWIFT</b> , etc.	

## SECOND-HAND MACHINES

<b>F.N.</b> , 5-6 h.p., 4-cylinder, 1911 model, splendid order, complete with lamp, tools, etc.	<b>£32 0</b>
<b>PREMIER</b> , 3½ h.p., 1910 model, complete with lamp, generator, horn, tools, etc., and good sidcar	<b>£30 0</b>
<b>DOUGLAS</b> , 2½ h.p., 1910 model, great bargain	<b>£22 0</b>
<b>MOTO-REVE</b> , 2½ h.p., 1910 model, grey, non-skid tyres	<b>£18 0</b>
<b>J.A.P.</b> , 2 h.p., accumulator machine, running order	<b>£5 0</b>
<b>BROWN</b> , 3½ h.p., accumulator, fast and powerful	<b>£7 10</b>

## TRICAR.

**REXETTE**, 5-6 h.p., water-cooled, 2 speeds, free engine, handle starting, coach-built, magneto, twin tyres rear, Whittle belt, all absolutely faultless; well worth £45; accept

## Speciality: EXCHANGES.

**J. S. CORDINGLEY,**  
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HASLINGDEN, Lancashire.

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## MOTOR BICYCLES FOR SALE.

**1912 New Hudson**, 3½ h.p., 3-speed clutch model, complete with lamp, speedometer, horn, mirror, spare belt and case, spare butt end tube, spare valve machine not yet done 2,500 miles, tyres in perfect condition; cost £68 not 6 months ago, sacrifice for £48. Apply, Smithers, The Hut, Langton Green, Tooting Wells. [711]

**MESSRS. Palmer and Kitson**, South-Eastern Gang Herne Hill, London, S.E., invite your attention to the underlisted machines, representing the best value (private or trade) obtainable: Rex Sidette 6-7 h.p., new (1912), £65; Rex, late 1911, 6 h.p., 2-speed, with Turner coach-built sidcar, £45; Zenith, May, 1912, h.p., like new, £60; Zenith, Aug., 1911, with sidcar 6 h.p., £58; B.S.A., late 1911, 3½ h.p., £38; three Roy Enfields, 1912, 2½ h.p. twins, 2 speeds, £38 each, like new; three Motosacoches, prices from £12, all in condition; N.S.U., late 1908, 3½ h.p., £16; Douglas, late 1910, £21; Bradbury, late 1911, gold medal winner, £28; Minerva, late model, 3½ h.p., £15; F.N., 4-cyl. F.E. clutch, £23; Minerva, 2½ h.p., £6; Olympic, 2½ h.p., £8; one Morgan and one N.S.U. runabout, full data on request; Simms twin mag., £3/10 (new); J.A. automatic car carburetter, £5; Bosch plugs, lamps, etc.; write us your requirements; full details on request willingly. We shall be pleased to hear from you. We are now booking orders for new season mounts. [X89]

## SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

**REX**, 3 h.p., in running order; what offers?—C. Gray jun., Willow Vale, Frome. [X89]

**1912 Free Engine Triumph**, slightly shop-soiled; but offers—Batten Bros., Cullompton. [X81]

**DOUGLAS**, 1911, single speed, £29; 1911 2-speed clutch, £35; 1912 T.T., £40.—Moffat, Yeovil. [53]

**1911 Kerry-Abingdon**, 2 speeds and free engine, perfect order; £35, or close offer.—Western, Uxbridge. [721]

**BRADBURY**, new, 1912, now in stock, 3½ h.p., N.S. 2-speed gear; £55, for £49.—E. Beech, Liskeard, Cornwall. [72]

**TRIUMPH**, 1910, only done 4,500, 1912 Matchless; any trial; £36.—Truscott, Moons Hill, Liskeard. [X84]

**1911 Douglas**, Model E., with Lucas lamp and generator, horn, spares, excellent order; £32/10.—B. ton, Shaftesbury. [X91]

**3½ h.p. Lincon**, acc., spring forks, 1910, B. and B. h.b.c., running order; £6/10.—Price, Wirel Station, Lizard. [70]

**BRADBURY**, 1910, 2-speed, not much used, good condition, splendid sidcar machine; £30 Duggan, Bulth Wells. [X90]

**1909 Triumph**, 1911 piston, good order, tyres excellent, Service belt; price £28/10.—Preston Bank House, Torrington. [X91]

**GUY and Reynolds**, Weymouth, have started the clearance sale of motor cycles, all machines guaranteed to be in sound condition, and will be sold on approval, deposit.

**INDIAN**, 4 h.p., clutch model, blue finish, guaranteed not run 400 miles, and as new; £35.

**BAT**, 4 h.p., fitted with P. and M. 2-speed gear, guaranteed perfect, would make a good sidcar machine; £33.

**PREMIER**, 3½ h.p., not run 100 miles, as new; £32/10.

**F.N.**, 2½ h.p., 2-speed gear, free engine, in good condition throughout; £20.

**MOTO-REVE**, in very good condition; £12.

**TRIUMPH**, 3½ h.p., 1912 clutch model, as new, 1 been run more than 100 miles; £50.

**FOR Sale**, Arno motor bicycle, 1912, property of officer going abroad, good condition; any trial appointment.—Apply, Holdsworth, Widdicombe House, Kingsbridge, S. Devon. [70]

**1910 Triumph**, with 1912 cyl. and piston, spare tube in case, F.R.S. lamp, spare cyl. and piston and other spares; trial or examination here, or ride 100 miles; £34.—Toms, Tremor, Withiel, Bodmin, Cornwall. [69]

**1912 Rover**, 3½ h.p., free engine, only done 1,200 miles, Dunlop tyres and belt, horn, battery, controlled waterproof Bosch, everything best condition; £48/10, or exchange lightweight twin, speeded.—John Bridgewater. [X87]

## SECTION X.

**Scotland**.  
**1912 Rover**, 3½ h.p., clutch model, almost new, £43.—Train, Charing Cross, Larkhall. [71]

**3½ h.p. 1909 Quadrant**, h.b.c., mag.; 3½ h.p. motor cycle, good condition, bargain, £12.—Lake, Dunfermline. [X91]

**2½ h.p. Hobart**, 1912, Armstrong 3-speed and free engine; £38.—Clarke, 10 Stevenson, 17, Well, Paisley. [X88]

**TRIUMPH**, 3½ h.p., free engine, 1911, valve, for etc., overhauled, without lamp; £34.—Paisley, Holm, Langholm. [69]



# THE MOTOR CYCLE

ESTABLISHED IN 1903

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## Motor Cycle Taxation.

ON September 16th last a White Paper was issued containing the report of the Committee on the Horse-power Rating of Motor Cars. This Committee was not asked to make any suggestions for the increase, decrease, or alteration of existing motor cycle taxation. It went outside its terms of reference, and made a suggestion that the motor cycle rate should be amended by the addition of a cyclecar class. It also recommended that motor cycles should be taxed in future on the basis of motor car taxation, *i.e.*, on the bore of the engine.

We published the first article on the subject on the 19th September, and followed it with a leaderette on the 26th. Later the correspondence we received expressing indignation at the committee's recommendation prompted us to insert in the issue of October 3rd a petition form with a copy of a letter which it was suggested should be forwarded by readers to members of Parliament. A draft of the new regulations following the recommendations of the Committee has just been issued by the Treasury. This draft regulation does not contain any reference to increased or decreased taxation in connection with motor cycles, nor does it differentiate between cyclecars and any other form of small four-wheeled motor car. It deals only with motor cars.

In the House of Commons on the 24th inst. Mr. Cathcart Wason asked the Secretary to the Treasury "whether any proposals for the increase of taxation on motor cycles had been submitted to the Secretary to the Treasury, and are now under his consideration, and if he proposes to take any action thereon?" The Financial Secretary to the Treasury, Mr. Masterman, replied as follows: "The recent Committee on the Horse-power Rating of Motor Cars, in paragraph 9 of their report, suggested certain alterations which could not be carried out without legislation in the present system of taxation. My right hon. friend the Chancellor of the Exchequer has no present intention of taking action in the direction indicated."

This is reassuring, except for the word, "present" used in the last paragraph. If this had been omitted from Mr. Masterman's reply, the minds of motor cyclists would have been at rest, but with the word inserted it leaves it an open question whether the Treasury may or may not make suggestions later on for increased taxation should they consider it ex-

pedient. On the other hand, there is a remote possibility that the Treasury may be considering decreased taxation in connection with second-hand motor cycles, and we hope that is the intention.

The "direction indicated," referred to by the Financial Secretary to the Treasury, in his reply to Mr. Cathcart Wason, was, of course, the £1 tax for cyclecars with single-cylinder engines under 89 mm. bore and the taxation of motor cycles on the basis of motor car taxation. Motor cyclists all over the kingdom will rejoice with us that the absurd and incomplete recommendation of the Committee on Motor Car Taxation has so far been ignored by the Treasury, and we would even go further, and say that this recommendation should never have been made. The Committee was asked to consider motor car taxation, and went out of its way to make a recommendation with regard to motor cycles, which was not asked for. Whatever opinions the Committee as a body or its members individually may hold with regard to motor cycles, it had no excuse for suggesting any alteration to the taxation of motor cycles beyond the fact that it had heard the arguments advanced by the representative of the Auto Cycle Union, Mr. Archibald Sharp.

We assume the Committee acted in good faith, and thought that it was suggesting something that would remedy an injustice, but if the recommendation were directed at motor cycles of a certain type, weight, and horse-power, it appears almost like an attempt on the part of a few individuals to suppress motor cycles which do not conform to their opinions of what a motor cycle should be.

Although the Chancellor of the Exchequer has apparently no present intention of taking action in the direction indicated by the Committee, an official statement of the nature referred to above does not make *The Motor Cycle* petition any less valuable. The signatures of the petitioners with a draft of the petition will be sent to the Lords of the Treasury accompanied by a copy of the letter which we suggested should be forwarded to Parliamentary representatives. The petition will prove the indignation of motor cyclists regarding the Committee's recommendation, and the letter contains a suggestion for reducing the tax by one half for machines over two years old, a suggestion which we hope the Lords of the Treasury will consider.



## FORCED LUBRICATION.

### The Difference between Mechanically Fed and Forced Lubrication.

**I** HAVE lately been taking a series of test runs on forced lubrication machines, and probably my experiences will prove interesting to many. Forced lubrication is, however, in its infancy as regards its application to motor cycle engines, although for commercial machinery and motor car engines it has long proved a trusted method.

In the first place, it is necessary to differentiate between forced and mechanically fed lubrication. Such systems as induce oil into the crank case by utilising the partial vacuum formed therein can only be called mechanical feed. In this category fall the Indian system and devices employing spring-loaded pumps, such as the Best and Lloyd. That this is true one has only to consider what happens when the oil reaches the crank case—it is a case of ordinary splash lubrication obviously, but with the advantage over the ordinary hand pump that the amount of oil present is more uniform and approaches nearer to the requisite amount. Last Olympia Show really marked the coming of forced lubrication when the Veloce and W. and D. were exhibited. To take the Veloce first, here a small rotary pump driven off the magneto drive draws oil through a filter and sends a copious supply through a regulating tell-tale device to all the main bearings.

#### Two Examples of Forced Lubrication.

The oil also passes to the gears and clutches and is sprayed on to the connecting rod bearings and cylinder. The oil pressure is adjusted at the works to a figure which has been found most suitable—about 10 lbs. per square inch. The sump alone contains oil, and a filler is attached to it in a convenient position, all that the rider has to do being to fill the sump every 300 miles. Now as regards the running of this machine. With an engine of 70 x 76 mm. bore and stroke it easily takes two full-grown men up 1 in 7 from a standing start. Also running all out for miles on end never makes the cylinder more than comfortably hot. As for wear, 7,000 miles (1,000 of this with a sidecar) quite fails to make any appreciable difference in the bearings or clutch, while the piston and cylinder have merely acquired a fine polish.

Turning now to the W.D., we find here a small Albany type pump, which draws oil through a filter from a sump at the bottom of the crank case, much the same as the Veloce. The oil now passes through a regulating needle valve to a distribution chamber, thence through channels in the crank case to the main bearings. The main shaft on the timing gear side is drilled, and oil passes through the shaft, flywheel, and crank pin to the big end bearing, thence up a pipe fixed to the connecting rod to the gudgeon pin. Excess oil escapes from the bearings on to the flywheels and is flung on to the cylinder. In this case the bearings are floating on a film of oil, and under running conditions the two surfaces of the bearings are not in actual contact at all. Let the reader grasp this fact and he will see what a stride this is from the ordinary splash system. In fact, it is this forced lubrication system which has made the modern high speed commercial steam engine possible.

#### Another Advantage.

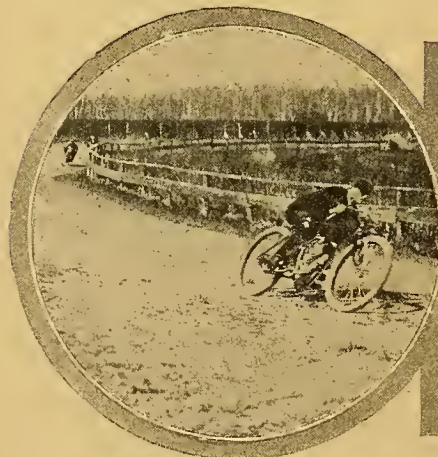
I also saw an engine in which the bearings had been damaged owing to the presence of aluminium filings on the wrong side of the filter, and here, although the bearings were known to be very slack indeed, when running it was quite impossible to tell this, there being no vestige of knocking or rattling. On the road the W.D. proved also phenomenally cool, although the compression of the particular mount I bestrode was 85 lbs. per square inch and the speed was high.

Points in common were that both machines had a peculiarly silky feel about their running; this is doubtless due to the comparatively small amount of friction. In both cases the power developed seemed to be a little above the average, showing at least that the work done in circulating the oil is no drain on the engine power. The real advantages, however, are the small amount of wear and the absolute fool-proofness of the working parts of the lubrication systems.

It will be interesting to watch the progress of this type of lubrication, and the coming Olympia Show should prove instructive in this respect.

A.G.D.C.

#### RACING ON DIRT TRACKS IN CANADA.



(1.) J. Cruikshank (Indian) leading in the five-mile event. Indian riders carried all before them.



(2.) Winnipeg motor cyclists in the flying start of the ten mile four-lap race. The officials and a number of spectators may be seen in the background.





# OCCASIONAL COMMENTS

by "IXION"



## Top Tube Toolbags.

One of my faddist friends called round last week and showed me a notion which is not protected, and is worth the attention of the trade. He started with the conviction that the top of the tank was the correct place for toolbags, partly because the space was otherwise wasted, partly because road vibration reaches its zenith at the tail of the carrier, and carrier panniers need very careful packing if the tools are not to jangle. Consequently he procured a standard "top tube bag," but he soon found it too small to be of any practical use.

After one or two experiments he fitted a long bag with four compartments. At the forward end he carries spare plugs and valves; just abaft of this he stores his tyre repair kit and belt adjusting kit in separate compartments; and the long stern division houses his big tools. The whole outfit was very neat and compact, in spite of the fact that all his clips had to be bolted on. He pointed out that if flat brackets were brazed to the top tube, a large comprehensive outfit could be most handily mounted in this position.

## The Life of Epicyclic Hubs.

My request for information as to the wearing life of epicyclic hubs has not elicited much evidence. Three-speed users have been quite inarticulate, and I have received no particulars of more value than my own experience. Early in the year I arranged for a Sturmey-Archer and an Armstrong hub to be fitted to  $3\frac{1}{2}$  h.p. machines under my observation, and to be worked hard, with and without sidecars. Both hubs are still running, and neither has ever given a mite of trouble or cost a penny in repairs. At one time the clutch of the Sturmey was somewhat inclined to slip, but this proved to be due to the rider's failure to comprehend the clutch adjustment; when he got the hang of the Manx ha'penny device on the right hand end of the spindle, the clutch gripped like a good 'un. Both these hubs have done many thousands of miles; I will endeavour to acquaint readers with their subsequent history, but they are going strong at present, and have proved delicious investments. My correspondents confine themselves to two makes of two-speed hub, and some of the letters do not appear to be entirely disinterested. Some of the distances are too short to be conclusive, but none of them talk trouble. Mr. Squire, of Sheffield, does not come in this category. He bought a 1909  $5\frac{1}{2}$  h.p. Roc two-speeder second-hand in 1910, and has run it 13,600 miles with only three road stops to tighten the high gear band. His sole objections are that it requires an hour to remove and replace the wheel, and that there is a slight chatter on low gear (a failing of many speed hubs). His repair bill is more than reasonable, viz., overhaul and new axle, 21s.; new brake drum and rebuilding wheel, 21s.; pair of cones, 3s.; pair Hoff-

mann bearings, 17s.; one hub pinion, 8s. 6d.; nine dozen brass studs, 9s.; total, £3 19s. 6d., a very creditable record. Several other riders speak of the B.S.A. two-speed hub in the highest terms. Altogether the correspondence entirely confirms my own experience, viz., that the epicyclic hub has now reached the stage when it is absolutely reliable, embodies a minimum of friction, and proves exceedingly durable in prolonged wear. Several readers comment with delight on the noble fashion in which a modern air-cooled engine stands up to its work under exhausting spells of hauling heavy sidecar outfits on the low ratios. Overheating is comparatively unknown, and the face of the exhaust valve pits but slowly.

## Another Query.

A correspondent writes saying that he is keenly interested in the medium-powered machine, indicating the 350 c.c. singles and twins. He says he is informed that their high-speed engines do not yet wear as well as a  $3\frac{1}{2}$  h.p., and that loose bearings appear too soon, while valve troubles are unduly frequent. I have not yet attempted to run one of these handy machines to destruction, my own experience of them being practically confined to 500 mile tests of a few leading types, during which I could collect no exhaustive evidence. I imagine that a new type requires time to come into its own, and it is scarcely to be expected that miniature engines should solve the metallurgical problems which still hamper their bigger sisters, but I am sure he need not expect an unreasonable amount of trouble. Perhaps one or two users who have driven a 350 c.c. engine a distance of 10,000 miles will send their repair bills to the Editor? The results should be interesting.



AT THE TOP OF PEN-Y-BALL.

H. W. Coupland (3 h.p. Williamson sidecar) at the top of this noted Welsh hill, which has several times lately been used for hill-climbing contests.



## COLLAPSIBLE SIDECARS.

Two ingenious attachments designed to overcome the storage difficulty.

EVER since the sidecar and its predecessor, the tricar, have been introduced, the difficulty of storage has always been present to the user who has not the necessary premises at his disposal. The first collapsible motor cycle brought to our notice

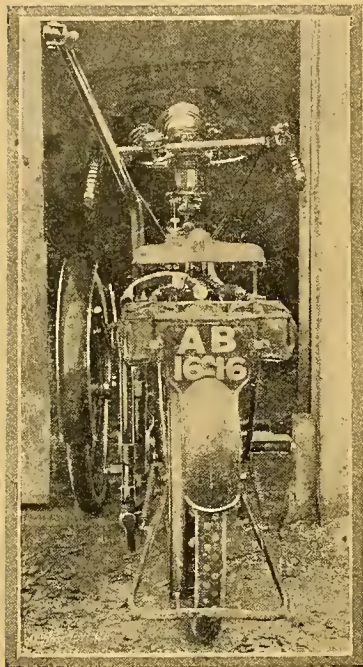
was a folding tricar, described in *The Motor Cycle* a couple of years ago, which was the invention of Mr. Browning. Mr. Browning, finding that the tricar was falling into disuse, he then devoted his attention to the sidecar, and succeeded in bringing out a very clever model, which was exhibited at the last motor cycle show.

### The Browning Sidecar.

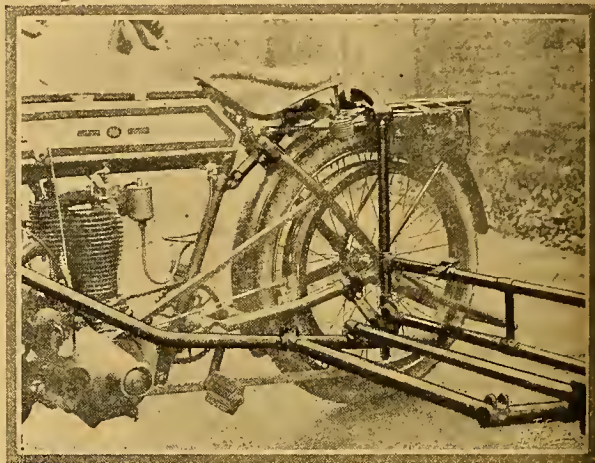
Since that time he has constructed several machines, and recently his invention was taken up by Mr. R. Gordon Barrett, 54, Florence Road, Stroud Green, N. To fold up the sidecar so that it will

pass through a narrow doorway, two clips holding down the forward portion of the sidecar springs are undone. The type of clip used throughout is that shown in the third illustration, consisting of a clip and bolt combined, which is absolutely secure and free from rattle. The rearward portion of the sidecar springs is provided with a wedge to fit into a specially cut groove, which can be seen in the same picture. The body can now be pulled forward and lifted off. When the body is removed

two more patent clips are undone, one attaching the long diagonal member of the sidecar to the down tube of the motor cycle, and the other fastening the lateral portion of the frame to the tube supporting the side-

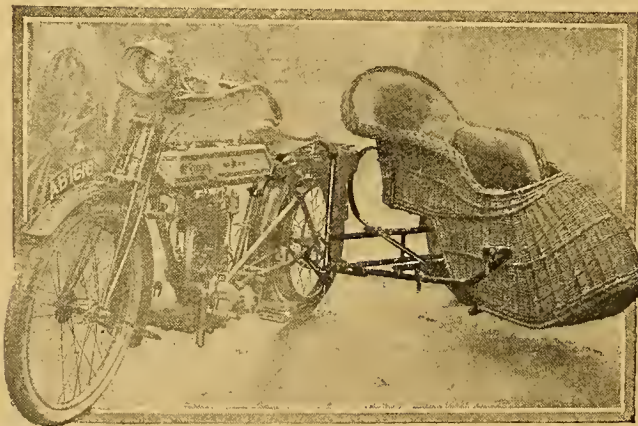


The Browning folding sidecar passing through a narrow doorway.



Chassis design of the Browning.

car axle. This allows the lateral portion, together with the long tube attached to the down tube of the motor bicycle, to be lifted up, and the wheel is free to swing close up against the motor bicycle, the whole pivoting on the rod attached to a special bracket situated behind the saddle of the motor bicycle. By undoing this latter fastening the whole sidecar can be lifted away from the machine if required. It is therefore unnecessary to detach the sidecar completely to pass through a narrow door, as is shown in first illustration. The second picture shows a further advantage of the attachment, which is not at once apparent, and that is, that by undoing one clip the sidecar may be swung round, allowing the near side of the machine to be accessible for repairs or adjustments. All these operations may be effected without the aid of tools. The sidecar cannot get out of alignment, however many times it is detached and attached. The sidecar is guaranteed for two years, and is made in two types, the Standard and De Luxe.

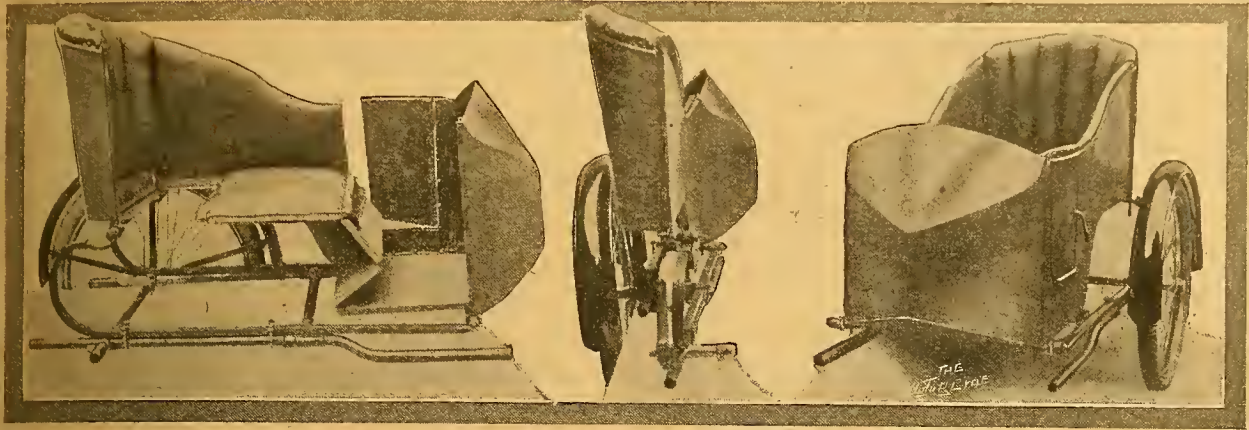


Showing how the sidecar swings outwards.



Showing motor and sidecar being wheeled out of an entry.





THE COLLAPSIBLE SIDECAR, MADE BY THE PATENT COLLAPSIBLE SIDECAR CO.

The second one of this folding type is manufactured by the Patent Collapsible Sidecar Company, 129, Conybere Street, Birmingham. The photographs show the machine in various stages of collapsibility. The annexed illustrations render the operation of this ingeniously thought out sidecar quite clear.

One of these reproductions, showing the complete machine passing through a narrow doorway, should appeal to owners who have lack of storage room.

Both these devices are distinctly ingenious and, to use a hackneyed expression undoubtedly supply a long-felt want.

## COMPULSORY SILENCE.

ON careful examination the new draft regulation of the Local Government Board regarding the use of cut-outs appears to me to be open to very severe criticism. To my mind there is ample evidence that this regulation has been drawn up hurriedly, or carelessly, or both, by one who has little or no knowledge of motor cycles, or even of the Motor Car Act of 1903. The draft reads as follows: "He shall not use any cut-out, fitting, or other apparatus or device which will allow the exhaust gases from the engine of the motor car (motor cycle) to escape into the atmosphere without first passing through a silencer, expansion chamber, or other contrivance suitable and sufficient for reducing as far as may reasonably be practicable the noise which could otherwise be caused by the escape of the said gases."

### No Regulations Necessary.

The first argument against such a measure becoming law is that it is totally unnecessary. That alone shows the want of intelligence, or even knowledge of existing law, on the part of the person or persons responsible for the regulation. For under the 1903 Act the owner of a motor vehicle which is objectionably noisy is liable to conviction. Therefore is the law stands at present the police have the remedy in their own hands. What the L.G.B. should have done if they wished the silencer regulation enforced more strictly was to put pressure on the police to remind them that this clause of the 1903 Act was not merely a dead letter. The whole case is analogous to the law as to the speed limit. The police have all powers to arrest anyone whose driving is dangerous to the public, therefore why impose a limit of speed at all? Everyone admits the absurdity of the speed limit, even many police, yet the L.G.B. in their enlightenment propose a regulation equally futile.

Then how will this regulation work in practice? Many riders, the majority in fact, drive with their cut-outs open on country roads when clear, and closed in towns and villages and when near horses. Make the cut-out illegal, and see what happens. The motor cyclist must obey the law, and he must have efficiency. He therefore takes the obvious course of riding a machine which is just sufficiently silent to escape trouble with the police. And this will mean that his machine is probably considerably less silent than it used to be when he shut the cut-out. It is not noisy enough to create trouble, but that does not mean that degree of silence possible on many 1912 machines, for no one minds a little back pressure for town riding if he have a free exhaust for fast work on the open road. The silencer of 1913 will be neither free nor silent if the regulation come into force.

### A Really Silent Machine.

Many people regard a really silent motor cycle or car as dangerous, and should we get the real silence by this regulation (which, as I have said above, I do not think likely) I believe their fears will prove to have been well founded. Further, the public prefer a machine they can hear, all the time, to a dead silent machine with a horn or exhaust whistle going. Nothing annoys people more than to be startled by a motor horn; when they hear the machine coming and move on of their own accord they do not seem to mind.

What we want, and what I trust we shall get under a reasonable Government, is freedom to use our cut-outs at our own discretion, with heavy penalties for those who make nuisances of themselves. This latter is highly necessary. The only good that I can see likely to arise from the draft regulation is that it may draw more attention to silencer design, and may ultimately give us a really free silencer.

RED WHEELS.

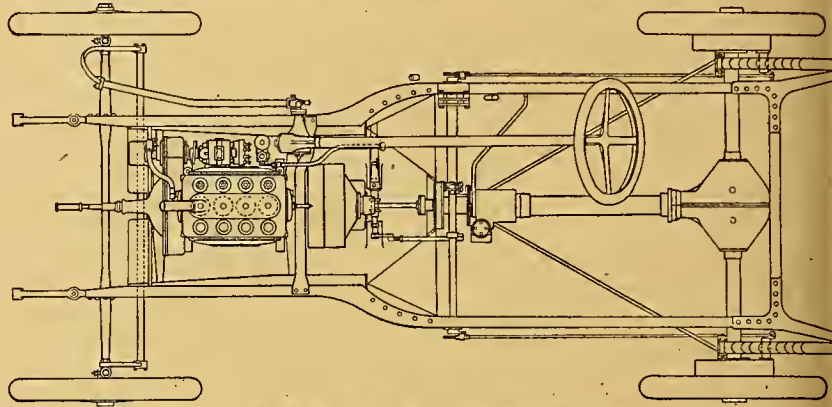


# A LEADING FRENCH CYCLECAR.

Detailed drawings and a trial of the four-cylinder Baby Peugeot.

THE illustrations of the Baby Peugeot published in a recent issue gave an excellent impression of the outline of the vehicle, and we now reproduce line drawings of the chassis showing the disposition of the parts and the mechanism.

The engine crankshaft is solid, and the crank case is divided into two compartments communicating by means of holes. Oil is fed to the base by gravity through a drip feed lubricator with two pipes passing each to one division of the crank case. The base is almost rectangular, and is attached direct to the frame, which is of pressed steel, and passes right under the engine, forming at the same time a mudshield. The valves are mechanically operated,



Plan view of the chassis, showing disposition of parts.

wheel shaft. A Claudel automatic motor cycle carburetter feeds the engine perfectly, and is placed on the right just behind the magneto. The engine (which is 55 x 90 mm.), magneto, carburetter, and water pump weigh complete 188 lbs., which is, we should think, about the lightest form of four-cylinder water cooled engine unit on the market.

The clutch is of the leather-covered cone type, the external part forming the flywheel.

## The Two-speed Gear.

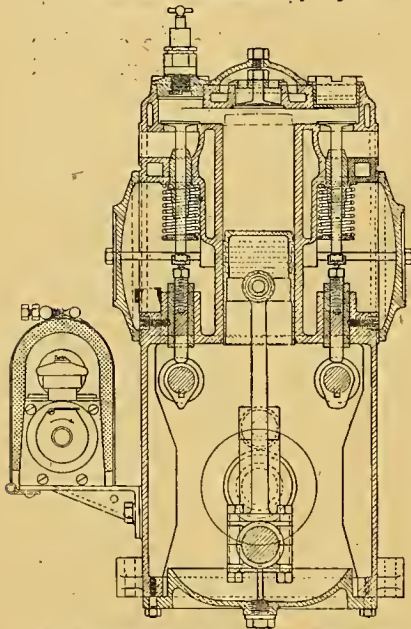
Behind the clutch is a two-speed gear contained in a round casing, which connects up to the rear axle by means of a torque tube. This gear is quite a departure. The tubular torque rod is, of course, a fixture; through its centre runs a revolving tube and a solid rod. These connect by means of bevel pinions at their rearward extremities to two bevel crown wheels on the driving axle. It will therefore be seen that there is always one set of bevels driving and one set running idly, the change of gear being effected by clutching either the tubular or solid shaft to the clutch-shaft by means of a sliding dog, which is really a disc carrying internal and external cut teeth, which mesh with keys or flutes on the engine-shaft and gearshafts.

A reverse is provided by a pinion not in mesh unless required. When it is necessary to travel backwards this pinion is brought into mesh with the low gear-shaft by a Bowden wire, and causes a reverse motion.

The universal joint connecting the clutch and propeller-shafts is simply a leather

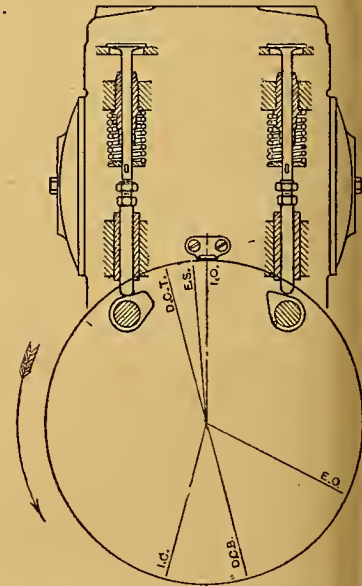
disc, which allows for a slight motion every direction.

The front axle is of I section, dropped below the starting handle, and the steering is irreversible by screw and sector



Part sectional view of the four-cylinder engine. It will be noted that the valves are on each side of the cylinder, and valves, springs, tappets, etc., work in oil, the aluminium cover plates being fitted to the cylinder with an oil-tight joint.

and situate each side, covered completely in such manner that the tappets and springs work in an oil bath. The timing gear is across the front of the engine, and the pinions and wheels are alternate bronze and fibre. The water circulating pump and the Bosch magneto are gear-driven off a continuation of the timing

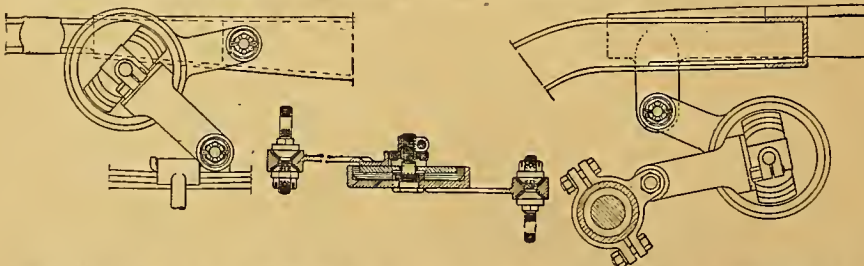


The Timing Diagram. I.O. Inlet open., E.S. Exhaust shut, D.C.T. Dead centre top, I.C. Inlet close, D.C.B. Dead centre bottom, E.O. Exhaust open.

## The Suspension.

One of the most interesting and practical features of the vehicle is the Truffault suspension, a most practical device, which the springing of the little car vastly improved. Roughly described, Truffault is a friction device which provides for big shocks by letting the wheel back again gently, after they have been suddenly jerked upwards by bad roads. The rear springs are semi-elliptic, and the front springs are merely attached to the frame where the dumb irons are usually placed.

The frame is cranked upwards at rear and narrowed in front to allow sufficient lock. The wheels are small 22in. x 2½in.—but one would never know



Plan sectional view of the Truffault shock absorber, also side views, showing how the suspension is fitted to the front and rear wheels. The left hand elevation is for front wheel and the right hand for the rear wheel. This device allows the road wheel to return slowly to its place when suddenly lifted by shocks. The damping action is caused by a frictional pad of leather gripped between metal discs.



**A Leading French Cyclecar.—**

They were unduly small owing to the delightfully easy running of the Truffault suspension.

The control is very simple. There are no levers on the steering wheel, an accelerator pedal opens and closes the throttle, and side levers and pedal working inside the body operate the internal expanding brakes and change of gear. The brakes are operated by pedal and lever independent of one another.

The body is of metal, torpedo shaped,

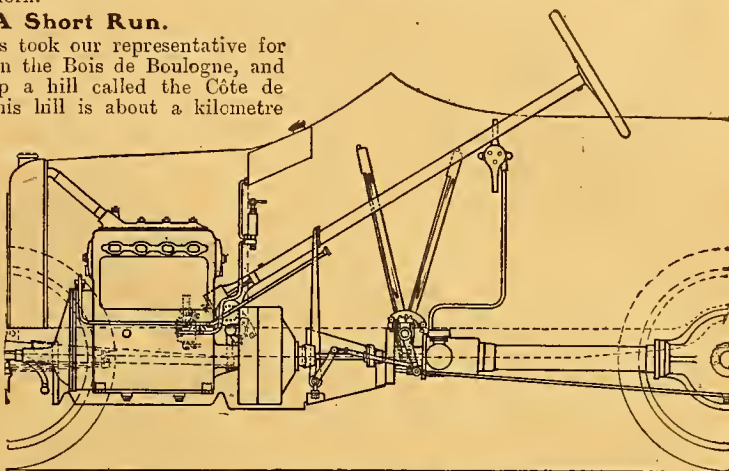
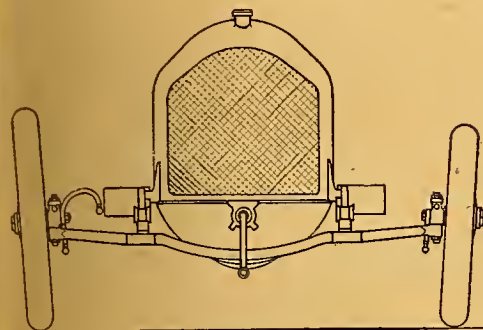
and upholstered in leather, the petrol tank is cunningly hid in the back of the seat, and holds about six gallons, and the consumption is about 40 m.p.g.

The chassis weighs complete about 6½ cwt., and the complete car has a hood, screen, two Ducellier lamps for acetylene gas, and a horn.

**A Short Run.**

The makers took our representative for a short run in the Bois de Boulogne, and afterwards up a hill called the Côte de Valerien. This hill is about a kilometre

in length and has a maximum gradient of 1 in 9, and an average of 1 in 12. The Baby went up at about 18 to 20 m.p.h. on the low speed, and has a maximum high speed of about 37 to 38 m.p.h. On tour, we were informed, it would average nearly 25 m.p.h.



Side and front elevations of the four-cylinder Baby Peugeot voiturette, showing method of control, tubular torque rod, clutch, and oil tank. The petrol tank in rear seat is not shown.

## Alldays Midget and Other Models.

**A**LLDAYS and Onions, Ltd., Birmingham, showed us last week an entirely new 8 h.p. twin sidcar model, also the Alldays Midget. There will be little alteration in the 8 h.p. single-cylinder model for next year, except that it will have a countershaft three-speed gear with the first chain running in an oil bath. This car is of the sliding type.

**A Sidcar Machine.**

The 8 h.p. twin has an engine the cylinders of which are 85×88 mm. bore and stroke set at an angle of 90°. The cranks are also at 90° with the connecting rods working on separate journals. The flywheels are internal. Both valves are mechanically operated side by side. The magneto, which is on the left-hand side and behind the engine, is gear-driven off one of the

cam wheels. The gear is similar to that on the 3½ h.p. machine. On the engine-shaft is a metal-to-metal cone clutch. Lubrication is by hand pump.

The Midget has been on the road upwards of 7,000 miles this year, and Alldays and Onions have decided to make 500 of them. The engine is a water-cooled single-cylinder 4½ in. bore × 4½ in. stroke with external flywheel and solid crankshaft. The magneto is fitted on the right side and is chain-driven, the chain running in an oil bath case. Lubrication of the engine is effected by a mechanically operated pump which pumps the oil up from a sump in the crank case through the bearings of the engine, etc., and then returns the oil to the tank. Where the oil issues from the bearings it falls to the base and is splashed from there on to the cylinder

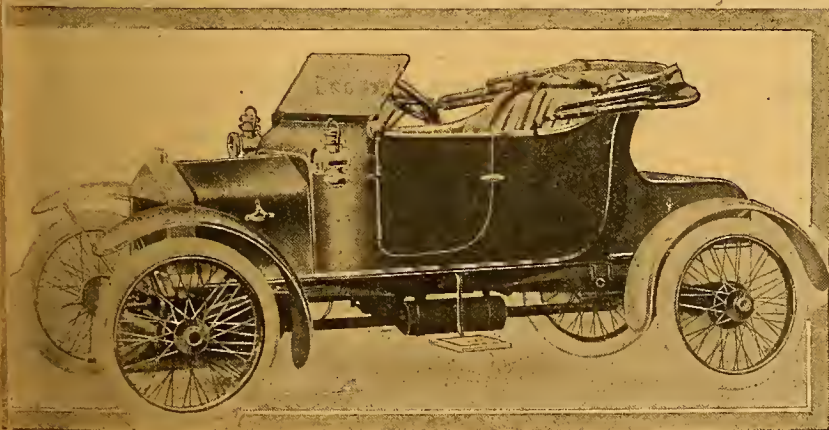
walls. A cone clutch transmits the power to a three-speed gear box of the sliding type, the top ratio being direct driven.

**Worm Drive and Differential.**

From the gear box a propeller-shaft conveys the power to a worm-driven rear axle, the worm and wheel being below the axle. The box containing the worm gear and differential is provided with an oil filler so placed that when filling up an overflow device prevents too much lubricant remaining in the box. To enable the propeller-shaft to assume a horizontal position, the engine, gear box, etc., are carried on an underframe of steel tubing, which obviates inclining the engine. The frame on which the body rests is of channel steel.

Two expanding and contracting brakes are fitted to each rear wheel. The steering is irreversible by worm wheel and sector. The springing is by means of four semi-elliptical springs, which are free to turn about their centres on pins attached to the frame. The front axle is of stamped I section steel. A tubular torque rod connects the gear box and rear axle, and in it revolves the propeller-shaft. The steel wings are rounded in section, and pass well around the circumference of the wheels. Pedals operate the clutch and brakes, and the Victoria body seats two passengers. The total weight of this little vehicle is about 7½ cwt., and it will attain a maximum speed of thirty-eight miles per hour.

Mr. R. Surridge wishes us to inform readers that he regrets anyone having trouble with his solution flask, as it was only after a large number had been sent out that a fault was discovered. Previous purchasers of the flask can obtain a new one if they send a postcard to 58, George Street, Camberwell.



The Alldays Midget car, which is propelled by a single-cylinder water-cooled engine.



## An Ingenious Two-cycle Engine.

**A** TWO-STROKE engine possessing many novel features has been designed by Mr. Karl M. Gibbons, of Basford Hall, Stoke-upon-Trent. Unlike the usual type of two-cycle engine, in which the gases are transferred from the crank case to the cylinder by means of a port cast in the cylinder walls, this engine allows the gas to pass through a valve in the piston head. This valve is mechanically operated by means of a cam mounted on the crank pin and a tappet carried inside the hollow connecting rod. The cam is arranged to point directly to the centre of the crankshaft, so that every time the piston nears the bottom of its stroke, *i.e.* when the crank case compression is almost at its highest, the cam comes into action and the compressed gas passes through the valve and is deflected upwards by the shape of the piston in such a manner that it does not mix with the exhaust gas, but assists it out through the exhaust ports.

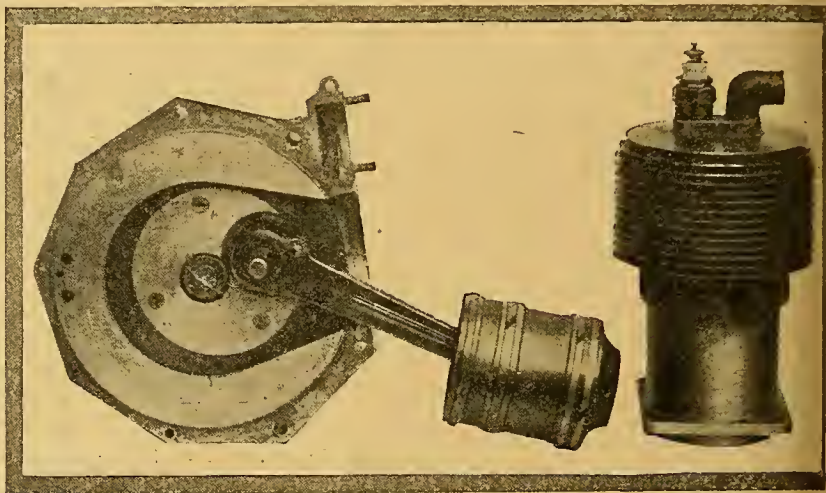
### High Engine Speeds.

The engine has a bore and stroke of 88 mm., and a compression of 90 lbs. per square inch. There are twelve exhaust ports of  $\frac{5}{16}$  in.  $\times$   $\frac{5}{16}$  in. and the engine is said to reach 4,000 r.p.m. The cylinder has been machined from a solid mild steel bar, and in future will probably be water-cooled.

At the present time the engine has undergone a test of about 200 miles, and has developed great power. So far the valve spring tension has not been adversely affected by the heat. The inlet valve should not require grinding any more frequently than that on a four-stroke engine, but should it become necessary it is a comparatively simple job, as the valve

can easily be detached by means of a special tool.

As will be seen from the drawings and photographs the gas (supplied by a Senspray carburettor) is drawn direct into the crank chamber through an automatic valve. The crank case compression has been raised by the addition of aluminium plates where space existed



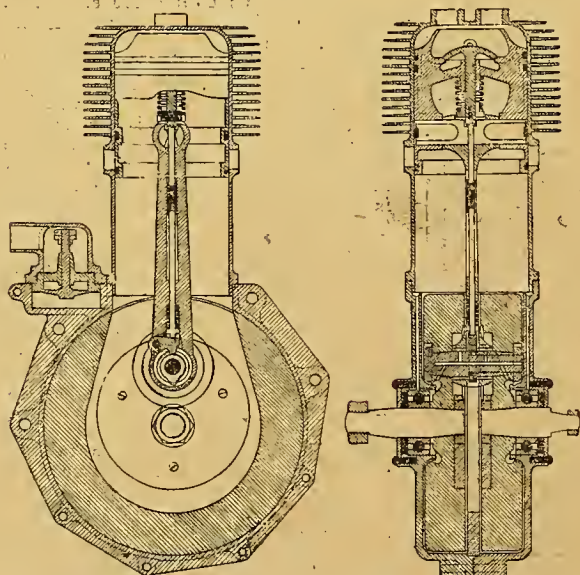
Cylinder and crank case, showing aluminium plates used to raise crank case compression.

which could be filled up. Oil is led to a groove at the base of the cylinder, thence to the main bearing through ducts, and thence by centrifugal force to the inside of the crank pin, which is drilled to allow oil to reach the big end.

The engine was manufactured by W. Tagg and Co. Newcastle-under-Lyme.

### A COMPLAINT ABOUT MOTOR CYCLISTS.

A serious complaint has been received by the R.A.C. from a member resident in Bedfordshire of the disagreeable way in which motor cycles are driven by irresponsible persons through certain Bedfordshire villages. Recently a farmer whose horse was frightened by a passing motor cyclist was thrown out of his cart and his shoulder broken. R.A.C. road guides will be stationed in villages in which fast driving has been noticed, to report the behaviour of any offenders. In Bedfordshire there have never been any police controls, and ten-mile limits are unknown; therefore the abuse of the privileges offered by a county which is notably friendly is highly to be deprecated.



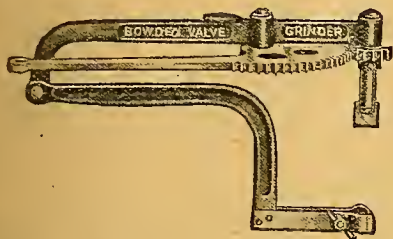
Sectional views of Mr. Gibbons's two-stroke engine.



Pulley side of the complete engine described in the article on this page.



# BOWDEN VALVE GRINDER.



## The Value of Compression.

It is impossible to over-estimate the value of perfect compression.

Compression cannot remain perfect unless your valves are regularly ground in.

Valve grinding has been sadly neglected in the majority of motor cycles because it has hitherto been an irksome and irritating operation.

If you knew of a cheap tool which would enable you to grind in your valves, simply, perfectly, without dismantling the cylinder, with no more trouble than you at present take in giving your tyres an occasional pumpful of air, you would not sacrifice that amount of power which must be lost through imperfect compression.

Send for fullest particulars.

**PRICE 7/6** (Post 4d.)  
extra.

**BOWDEN WIRE LTD.,**

PRATT STREET, CAMDEN TOWN,  
**LONDON.**

# BROOKS to-day, & — BROOKS to-morrow.

Has it ever struck you how very subject to saddle change and substitution is the man who does not ride a BROOKS?

And have you noticed how very seldom the man who rides a BROOKS to-day rides another make to-morrow?

Of course there is a reason—

It is this—

There is no other saddle which yields the same degree of comfort—none other which maintains its comfort-giving qualities from the first day of its fitting to the last day of its use as does the BROOKS—none other which can embody the BROOKS Patent Compound Springs—the secret of its luxury.

Hence — “BROOKS to-day, and BROOKS to-morrow.”

Anyway, you should put it to the test and make comparison, and note—

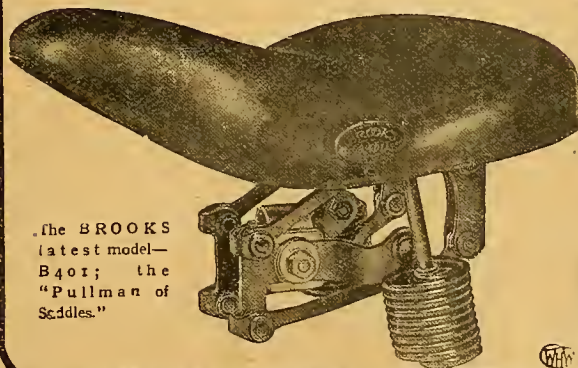
That all our latest models will be on view at

**STAND 231  
Gallery, OLYMPIA,**

where we shall be delighted to demonstrate their value.

**J. B. BROOKS & CO., Ltd.,  
49, Criterion Wks., Birmingham.**

*A full range of the BROOKS Cycle and Motor  
Cycle Specialities may be seen at our  
London Showrooms—Criterion House  
11, Grape Street Shaftesbury Avenue, W.C.  
(Oxford Street end).*



The BROOKS  
latest model—  
B401; the  
“Pullman of  
Saddles.”



THE A.C.U. ONE DAY  
QUARTERLY TRIALS.

More Successes for  
**STELASTIC TIRES**

2 G.W.K. Cyclecars,  
Fitted with Stelastic Tires  
**Gained Highest Awards.**

**Manufacturers' Private Test  
of Motor Cycle Tires.**

— Ltd.

COVENTRY,

11th Oct. 1912.

Dear Sirs,

I am sending to you to-day the two Stelastic covers  
taken from my machine after covering over 5,000 miles.

Yours faithfully,

Both tires, which are in excellent condition, can be seen at  
our Showrooms, 76, York Street, Westminster. They have  
not been punctured, and there is not a cut on the tread.

**In the recent Paris-Tours Reliability Trial**

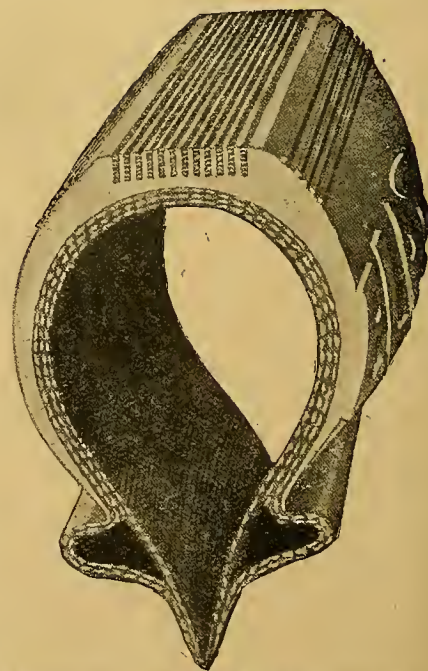
Mr. Rex Mundy, using Stelastic Tires, obtained  
**FULL MARKS AND HIGHEST AWARD.**

**5,000 MILES TRIAL**

**Great success of the Stelastic Tire.**

The longest Pneumatic Tire Trials ever successfully accom-  
plished under Royal Automobile Club observation. The four  
tires originally fitted to Daimler car weighing 35cwt.  
completed the whole distance without puncture or other incident.

**THE STELASTIC TIRE is capable of accom-  
plishing 5,000 miles on either cars or motor  
cycles.**



Section of Tire showing the Tread

Write for Booklet.

Agents:—

**Torkington Tires, Ltd., 76, York Street, Westminster, S.W.**

*In answering this advertisement it is desirable to mention "The Motor Cycle."*

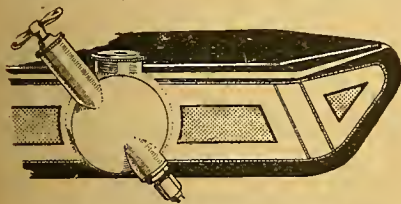


## 1913 MODELS.

Advance Details and Illustrations of  
New Model Motor Cycles.

### 1913 ROVER TOURING MACHINE.

THE Rover Co., Ltd., have found their present models so satisfactory, as proved by achievements in competition, that they do not intend to make any radical changes; they are, however, modifying all their types. We have been privileged to examine the first of the new touring  $3\frac{1}{2}$  h.p. models, and found that several minor improvements had been carried out. The petrol tank has an increased capacity and neatly rounded corners, the top and bottom edges being enamelled

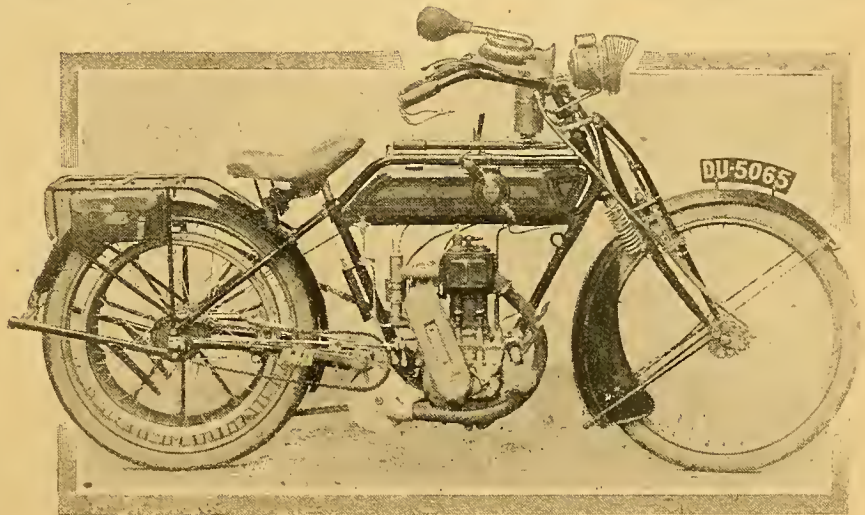


1913 Rover tank, showing cylindrical oil compartment and glass-topped filler caps.

black with the usual Rover red panel on aluminium ground between. The tank is now supported by two brackets from the under side, and a steel pressing let into it forms a non-leakable oil compartment. The top bar of the frame has been slightly raised to accommodate the larger tank, but the saddle height remains the same. Sidecar lugs are now brazed to the frame, and the company are constructing a sidecar of their own. The  $85 \times 88$  mm. engine remains practically the same,

though some of the bearing surfaces have been increased, and the machine we inspected was fitted with a neat Rover leg guard round the valve chest. A large diameter silencer is fitted under the

The new Armstrong gear is fitted to the rear wheel, which is covered by a wide, quickly-detachable mudguard attached to the carrier. Substantial stands are fitted to each wheel. Great care has been

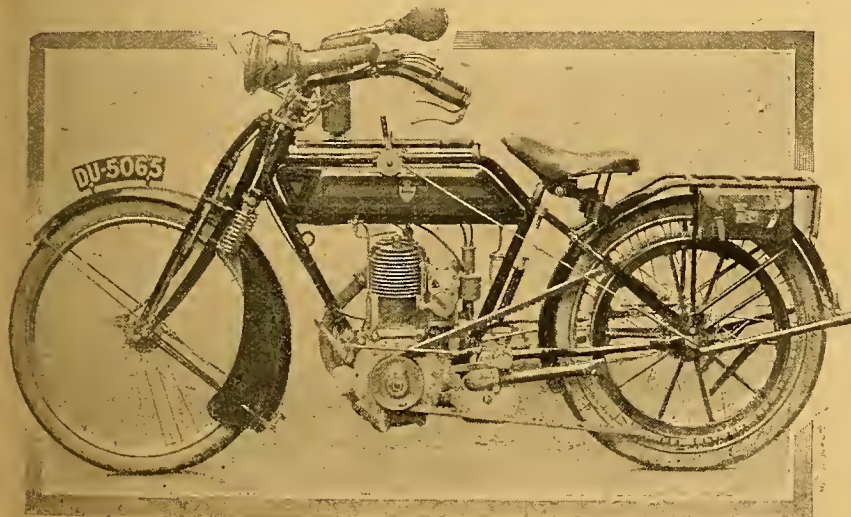


The new  $3\frac{1}{2}$  h.p. Rover, with Armstrong three-speed gear.

bottom bracket, to which the gases are led by a long pipe and have their egress through another pipe of smaller diameter on the opposite side. This silencer is, however, at present in its experimental stage, and may be somewhat modified.

bestowed on the design of the brakes; the front has an improved type of shoe fitted, while the leverage to the rear brake has been materially increased.

The model illustrated is not finished in the standard colours, but gives a good idea of the lines of the Rover Company's latest production.

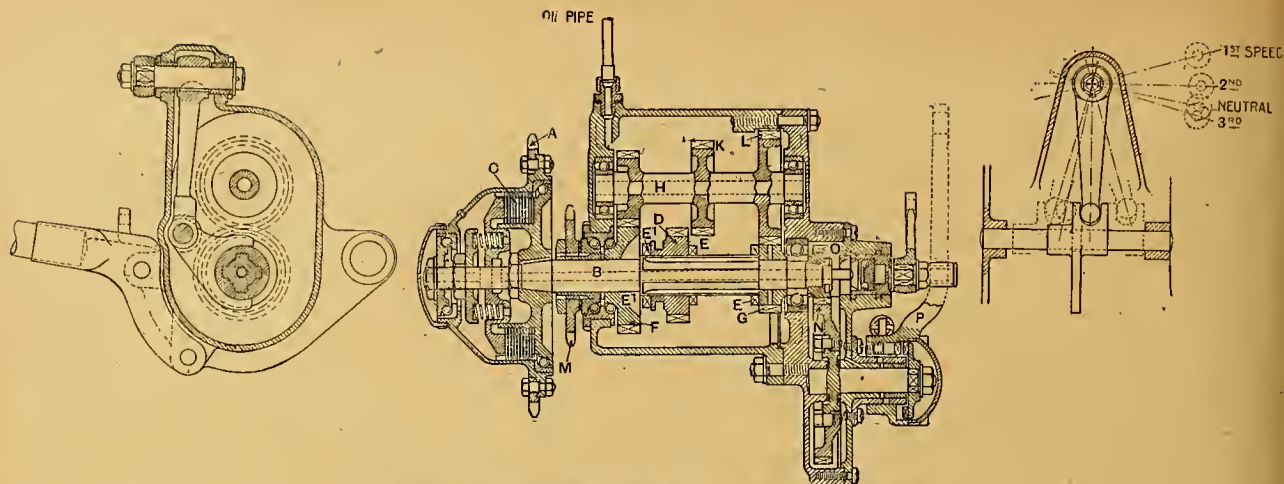


Belt side of the  $3\frac{1}{2}$  h.p. Rover described on this page.

### THE JAMES THREE-SPEED GEAR.

A FEW weeks ago we published an account of a long distance trial on a 1913 model  $3\frac{1}{2}$  h.p. James and sidecar, and we are now able to publish sectional drawings of the three-speed gear employed on this mount. The sprocket A is driven direct from the engine by means of a chain, and transmits power through the clutch plates C to the shaft B. The central portion of this shaft is splined and carries the sliding gear pinion D, which has dogs E and E' machined at either end. On either side of the splined portion of the shaft lie the idle wheels F and G having corresponding dogs E, and E' respectively. In the case of the wheel F, the dogs consist of semi-circular recesses machined in the face of the wheel. Directly above the mainshaft B lies the layshaft H carrying the three gear wheels J K and L. To obtain the high gear the dogs



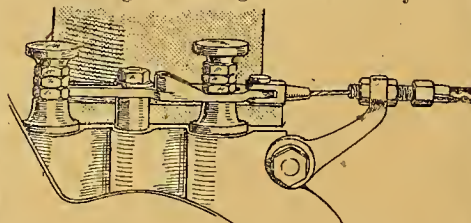


Section of the 1913 James' 3-speed gear box and striking mechanism.

E<sub>1</sub> are engaged, thus locking the shaft B to the idle wheel F. It will be noted that splined on to an extension of F is the driving sprocket. Thus the shaft B is locked to the sprocket M, and, since it is driven by the sprocket A, a direct drive is obtained. The middle gear is obtained by meshing the wheel D with the wheel K. The drive is then as follows: From D to K, then back from J to F, thence to M, a further movement of D to the right engages the dogs E or the low gear. By locking the wheel G to the shaft JB, the drive is then from G to L, from J to F, and thence to M. In each case the sprocket M drives the rear wheel through a single roller chain. The gear box is mounted throughout on Skefko ball bearings, with the exception of a double cone race carrying the wheel F, which takes any slight side thrust that may be caused by the striking mechanism. A kick starter is encased in the right side of the gear box, and consists of a toothed quadrant N, which may be rotated by a pedal P, under which circumstances it engages with the gear wheel O mounted on a free-wheel device carried by the mainshaft. The gear runs quietly and changes simply, and the ratios are worked out so that there is not too big a difference between them.

#### THE LATEST CALCOTT.

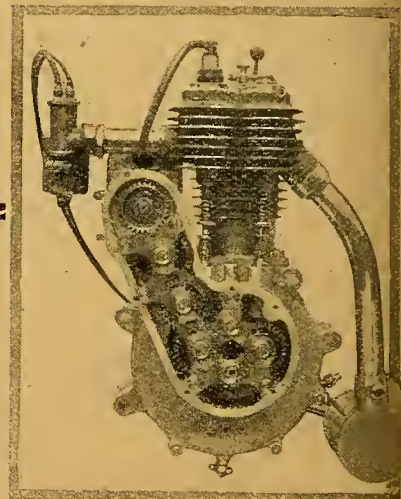
THE 2½ h.p. Calcott has been considerably modified for the coming year. The 70×76 mm. m.o.i.v. engine is retained, but the cylinder is offset ⅞ in. and is constructed with much deeper radiating fins and larger valves. The timing gear has been greatly simplified, all wheels being held in position by a phosphor bronze plate, so that the cover may be taken off without disturbing the timing. It is worthy of



Valve lifter mechanism and adjustable tappet on the 1913 Calcott.

note that the timing gear shafts are held stationary, the wheels only revolving on phosphor bronze bushes. Adjustable tappets are fitted to the new model, and a neat form of valve lifter which consists of an inclined face which forces the

exhaust tappets upwards. The frame has been improved in details, and the engine is carried at the rear by a stout cradle. The mudguard stays are carried on separate pins, so that they in no way impede the detachment of the wheels. A



Calcott engine which has an offset cylinder.

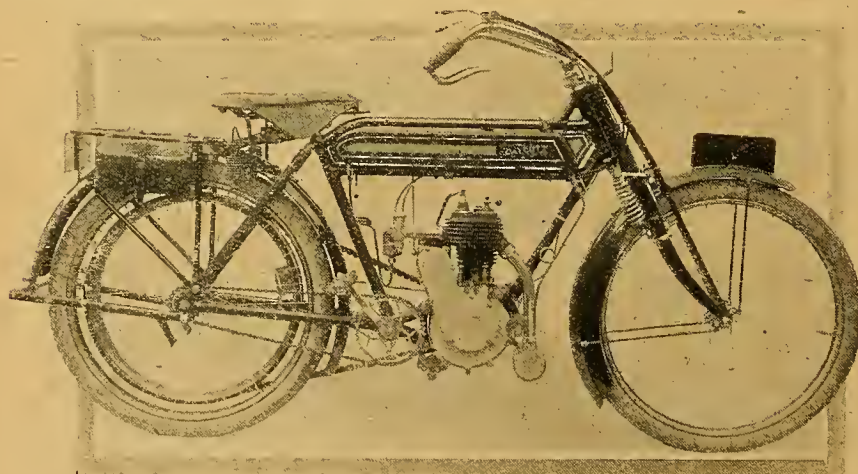
simple spring-up stand is fitted to the rear wheel. The carrier has been strengthened, and two pannier bags are fitted close in so as not to give a clumsy appearance to the machine. The tank has a rounded top and is fitted with a glass topped petrol filter, the whole being supported by platforms brazed to the lower tube. The Calcott is obtainable either as a single-gear mount, or with a three-speed to order.

The firm have under construction a 4½ h.p. machine of 89 mm. bore×60 mm. stroke; the cylinder will not be offset, but in other respects it is a large edition of the 2½ h.p. model.

This machine should prove itself to be an extremely satisfactory one for sidecar-work in hilly districts.



Adjustable tappet of twin 7-9 h.p. Premier



New 2½ h.p. Calcott single-speed machines.

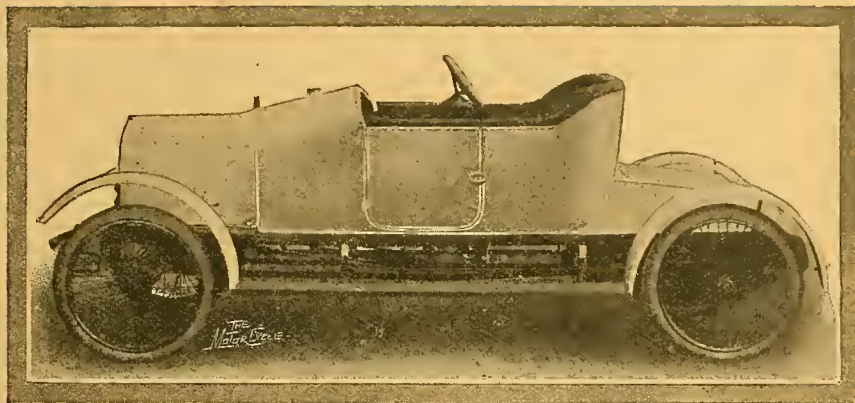


### THE CRESCENT CYCLECAR.

**W**E recently had the pleasure of inspecting the Crescent cyclecar, which is being built and marketed by Crescent Motors, Ltd., of Pleck Road, Walsall. The firm started operations in 1910, and after two years' experimental work they have evolved a machine that not only comes within the A.C.U. definition of a cyclecar, but what is still more important, one that is designed and priced on the lines of what to the majority of people the word cyclecar means.

The Crescent is friction driven, this form of transmission having been proved satisfactory over lengthy tests carried out by the manufacturers. The standard pattern two-seated side-by-side body is both comfortable and spacious, the inside dimensions of the seats being 37in. wide, 21in. high, and 16in. deep.

An 8 h.p. V-type J.A.P. engine (85 by 85 mm.), placed longitudinally in the frame under a bonnet at the front of the



The latest Crescent cyclecar which now has sociable seats.

brakes, which are operated by the clutch pedal; depressing the clutch pedal first holds apart the two friction discs, and further depression applies the band brakes on the front wheels. It may be added that besides the clutch pedal there is another pedal which operates the throttle, and underneath the steering column there is one lever to control the timing of the Bosch magneto by means of a Bowden wire. The carburetter is an Amac automatic, which dispenses with the necessity for an air lever.

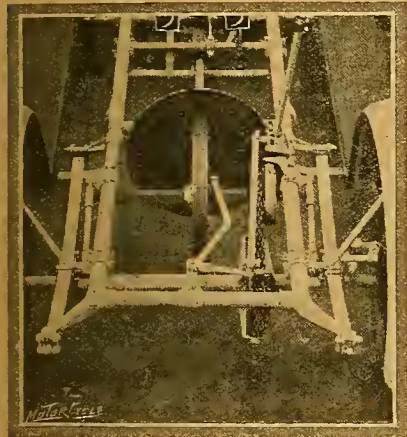
#### Appearance and Springing.

The chassis is carried on semi-elliptical springs fore and aft, and a tubular frame is used. It runs on 26in. wire wheels fitted with 2½in. voiturette rims and tyres. The wheelbase is 7ft. 9in., the track 3ft. 2in., and the ground clearance 8½in.

It will be gathered from the accompanying illustration that the complete machine presents a particularly smart appearance. The bonnet merges into the scuttle dash, which contains the petrol and oil tanks, in a very neat manner, and the lines of the body harmonise with both. Domed mudguards and running boards not only

further enhance the car's appearance, but are fittings which are useful and appreciated by the owner.

A short run we had on the car demonstrated its stability and good springing—indeed, the extremely comfortable manner in which it held the road without any discomfort to the occupants at high speeds over a bad surface was most impressive.

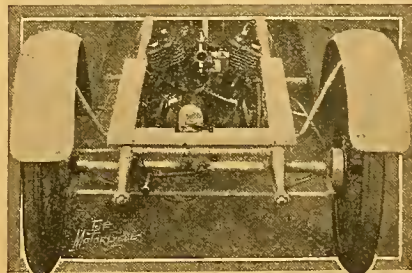


Showing the friction drive, tubular frame, and rear springing of the 1913 Crescent.

chassis, supplies the motive power. It is air-cooled, and a dummy radiator is fitted to enhance the appearance of the car. In addition to a vane flywheel, a two-blade fan is driven off the driving shaft immediately behind the engine. From the engine a long propeller-shaft transmits the power to the friction discs, the driving disc being carried on the end of the shaft and the driven disc on a counter-shaft. From the counter-shaft a short single chain transmits the power to the live back axle.

#### Five Speeds and Reverse.

Although, of course, a friction drive is really a variable gear, notches are formed in the change speed quadrant to give five forward speeds and one reverse. The combined change speed and brake lever works in a gate and quadrant, the latter being utilised for changing speed. The notches are in the quadrant and the lever being moved through the gate into a slot which is at the side of the change speed notches, applies a band brake to the counter-shaft. In this way the counter-shaft brake cannot be applied without first putting the gear into neutral, and one lever operates the change speed and one brake. This latter remark also applies to the front wheel

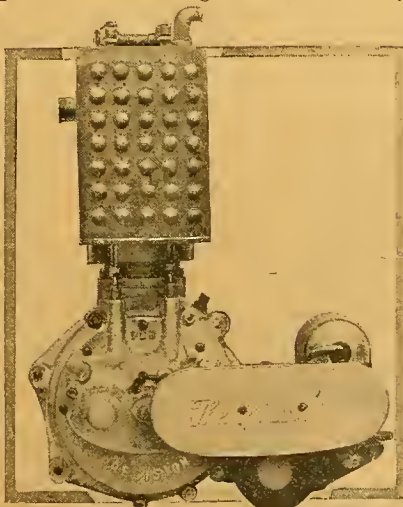


Power unit of the Crescent. The engine is an 8 h.p. air-cooled twin.

The efficiency of the friction drive for this class of vehicle was also demonstrated, especially when the car was driven up a short stretch of road with a loose cobbly surface having a reputed gradient of 1 in 4.5.

#### F.R.S. LAMPS.

Samuel Hall and Sons, Wrotesley Street, Birmingham, showed us a few days ago a special generator made for cyclecars, which holds 1½ lbs. of carbide. This is a very neat and light generator considering its size. It works on the ordinary F.R.S. drip feed principle, and has the firm's riddling grid. They are also making a complete set of cyclecar electric head, side, and tail lamps. These are also suitable for any small car, and are egg-shaped. The following—the Major, the Big, and the 5in. sizes for motor cycles—will be continued in an improved form. An additional model is a new lightweight head light and generator. All are fitted with genuine Mangin lenses. The generators for 1913 are both smaller and neater than before. F.R.S. lamps will be found at the Olympia Cycle and Motor Cycle Show on the stand of their principal agents, the Service Co., Ltd.



An example of the water-cooled Green-Precision 85 x 88 mm. engine. This engine holds the single-cylinder sidecar records, having covered 50 miles 1,740 yards in an hour—an excellent performance.



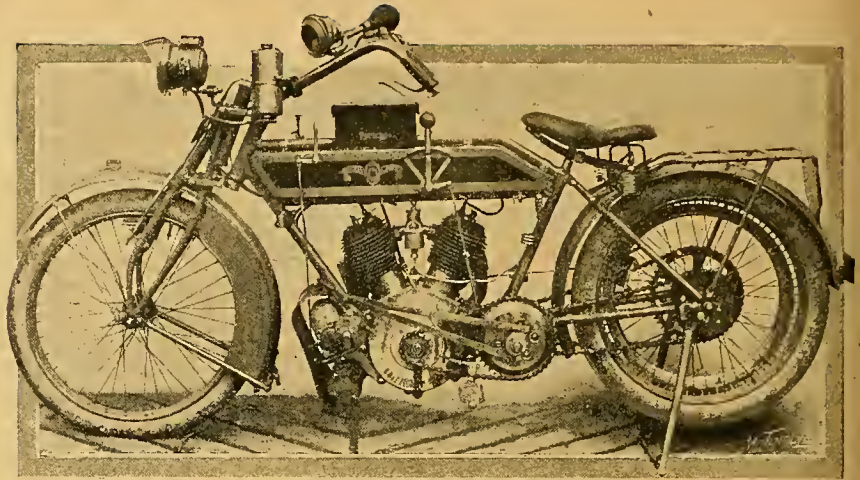
### THE MATCHLESS.

A RECENT visit to Messrs. Collier and Sons' Works, Plumstead Road, Woolwich, revealed a good deal that was of interest. The successful 8 h.p. passenger machine with double belt drive and epicyclic gear in the rear hub will be retained, while a few detail improvements will be added. An innovation, however, will be an 8 h.p. chain-driven passenger model. The drive is by chain to the counter-shaft, and thence by two chains to the rear wheel. The change-speed is in a small gear box in the bottom bracket containing dog clutches, which engage the low or high speed chains as required. Also, on the counter-shaft, there is mounted a friction clutch, consisting of two internal expanding wedge-shaped rings, the wedges having an angle of 90°. Oil from a bypass from the main supply to the engine lubricates the clutch, and any excess, therefore, is directed on to the front chain, which runs in an aluminium case; guards are provided for the back chains. A segment type kick-starter is used. The rear brake is of the internal expanding type, and is lined with Ferodo. The machine is of thoroughly practical design, but it must be remembered that the particular one illustrated herewith is an early model of the new type, and the chain case and guards have been removed.

Another new model will be the 3½ h.p. twin with overhead valves. The transmission from engine to counter-shaft will be by enclosed chain, and thence by belt to the rear wheel which will be built on to an Armstrong three-speed hub. The six-speed model with expanding pulley gear and sliding back wheel to preserve an even belt tension will be retained.

### The Matchless Cyclecar.

Quite a novelty, which has been awaited for some time, will be the 9 h.p. Matchless cyclecar, which is the result of two years' careful experimenting. It is now approaching completion, but will not be ready till just before the Show. Belt drive was tried in the early models and found wanting, and the final type is now a three-wheeled vehicle. The motive power will be a 90° J.A.P. 85 × 95 mm. engine fired by Bosch magneto. The



The new two-speed Matchless-Jap, with chain transmission throughout.

clutch will be of the leather-faced cone type. Long bolts extending through the



Garrard Maxfield 1913 model sidecar, with hood complete.

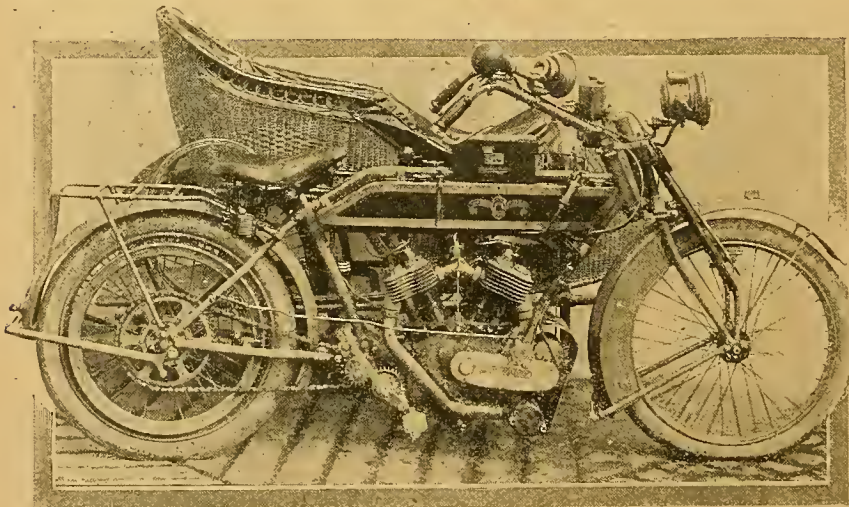
crank case also hold the gear box, rendering engine, clutch and gear box one unit.

Behind the gear box will be a well-made De Dion type universal joint with a grease-retaining cone. From gear box to the rear wheel the drive will be by propeller-shaft, while the final drive is by bevel. The chief bugbear of the three-wheeler, the inaccessibility of the back wheel, will be absent, as the latter will be detached almost instantly by merely withdrawing the spindle. The back wheel is then free to drop out, leaving the driving mechanism and the brake drum *in situ*. These two portions are connected to the main hub by means of dog clutches. Geared steering is fitted, the gear box being situated on the top of the steering column immediately beneath the wheel. The frame is of channel steel, while the rear wheel is carried in a tubular sub-frame, and is connected to the main frame by leaf springs attached to the latter at their after ends. The centre of the front axle is curved, and serves as a cradle for the engine, which is mounted longitudinally. Laminated springs extend from each extremity of this curve to vertical plungers, supporting the stub axles and running in guides on the main frame, thus ensuring good springing and ample lateral stability. In a word, the springing is somewhat after the system in vogue on the Sizaire-Naudin car. The track is 56in., and the wheelbase 7ft. The cylindrical petrol tank is carried over the engine and possesses a compartment for oil. The gear box contains two speeds, and the top gear ratio is 4½ to 1. 650 × 65 mm. voiturette tyres are to be fitted to the front wheels, while the rear wheel will be shod with a 700 × 85 mm. combination cover. Altogether, the Matchless cyclecar will be one of the most up-to-date three-wheeled vehicles on the market.

### SIDECARS A SPECIALITY.

Hoods for sidecars are manufactured by the Garrard-Maxfield Motor Manufacturing Co., Ltd., 5-6, Aston Road, Birmingham. We illustrate the 1913 pattern sidecar made by this firm complete with Cape hood. These sidecars are also fitted with side curtains and front celluloid screen to order. The company have already supplied a number to France.

Instantaneous sidecar couplings are also a feature of the Garrard sidecar.



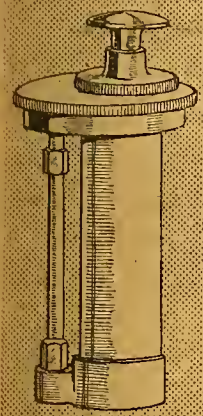
The 1913 8 h.p. chain-driven Matchless sidecar combination.



## 1913 REX.

It has not been found necessary to make any great changes in the twin-cylinder 6 h.p. Rex. The bore and stroke,  $77\frac{1}{2} \times 95$  mm., remain the same, and the only alteration of any

importance to the power unit lies in the timing gear, which has been considerably simplified. It will be remembered that an oil pipe leads from the crank case into each of the inlet valve chambers. The gear is unaltered, and the chief improvements in the frame lie in the lengthening of the ball head and a slightly increased rake to the steering. The leverage on the rear brake has been increased, and the V brake drum replaced by a flat

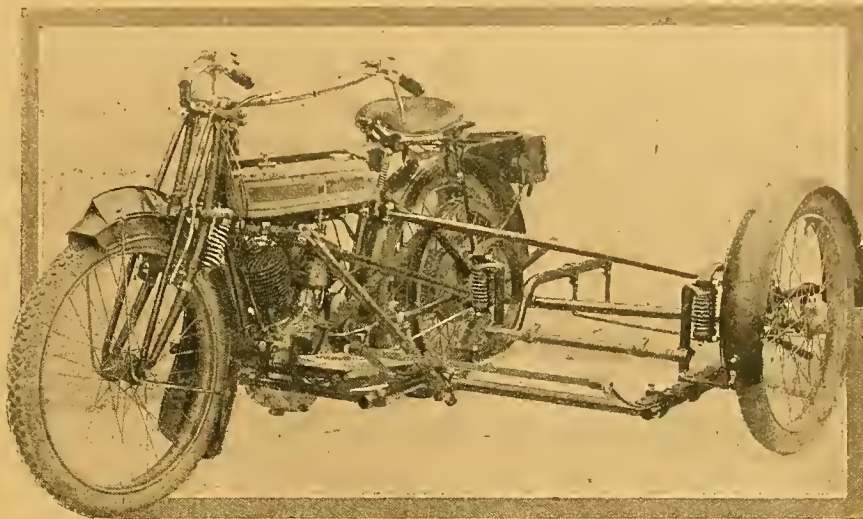


Pressure pump for Rex oil tank.

one. The mudguards have been much improved, and the side flaps extend right round the front guard. Another innovation lies in the method of lubrication, which is by air pressure. A small hand pump is let into the oil filler cap, by means of which air is forced into the tank. This drives the oil out through an adjustable sight feed drip to the engine. Either belt or chain drive can be supplied.

The company has produced a solidly constructed sidecar for use with this machine, the design of which may be clearly followed from the photograph. It will be seen that there are four points of attachment, a cross-bar being fixed to the engine plates in front of the crank case. The chassis is constructed for lasting wear, and the body is beautifully sprung, and is supported on coil springs in addition to the usual leaf springs.

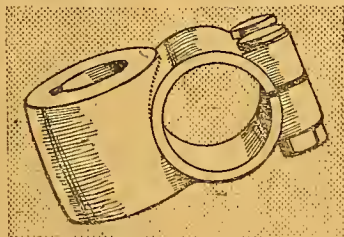
The most striking feature of the  $3\frac{1}{2}$  h.p. model is the belt guard, which extends round the pulley and underneath the belt



Re-designed Rex sidecar chassis with four-point attachment. The front clip extends to the engine cradle.

to the rear rim, as may be seen from the photograph. We have advocated this fitting in these pages for a long time past, and the Rex Co. are to be congratulated on being the first firm to make it a standard fitting. The model we illustrate is fitted with a metal-to-metal cone clutch

neat and light contrivance. The engine has a bore and stroke of  $84\frac{1}{2} \times 95$  mm., and may be started by a handle fixed on the rear stay and connected to the hub by chain. Both types are fitted with a front wheel stand and a novel handle-bar clip, which is keyed to the head pillar and clips the handle-bar which may be set at any angle.



Rex handle-bar lug, which is keyed on to the pillar and clips the bars, so that they may be set in any position.

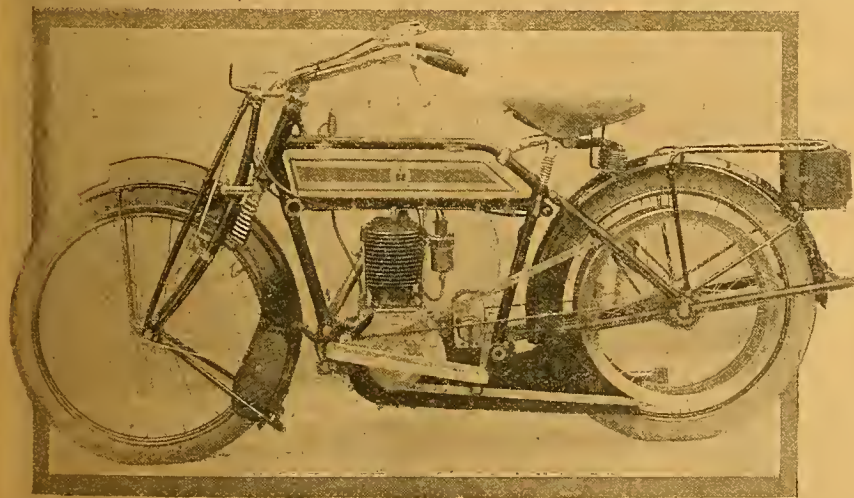
in the rear wheel. This clutch consists of two metal cones, which are forced against corresponding coned surfaces in the hub shell. The whole forms a particularly

## ANOTHER MOTOR CYCLE LAMP.

Messrs. Blériot, Ltd., Long Acre, W.C., are turning their attention to the manufacture of motor cycle lamps, and we learn that they have already designed a motor cycle head light and generator. The former will be of the lens mirror type, and the latter will be made on the diving bell system, following the pattern of one of their generators for car lamps, which has been found to be absolutely satisfactory. One of its chief points is its great accessibility, allowing it to be taken apart quickly, thus rendering cleaning particularly easy. The lamp, which will not be ready for delivery for some time, will undoubtedly be a good production worthy of the name of Blériot. It will be of British manufacture.

## WEAR OF EPICYCLIC HUB GEARS:

At the Rex Co.'s works recently an epicyclic gear was shown to us which their draughtsman, Mr. H. Sargisson, has had in use from 1906 to the present date. For the last eighteen months the machine has been in use with a sidecar and the original gear pinions are still good. Mr. Sargisson thinks this is conclusive proof that "Ixion's" query about epicyclic gears is well answered. Of course parts of the gear changing mechanism have been renewed from time to time, but the original hub and pinions have never been replaced. The gear pinions of the Rex two-speed gear are very much larger than those of the three-speed hubs which are popular on motor cycles, but we see no reason why these latter should wear any quicker than a pedal cycle hub three-speed gear, which, as is well known, has a life practically equal to that of the bicycle.



1913 pattern 4 h.p. Rex. Observe the footboards and efficient belt guard.



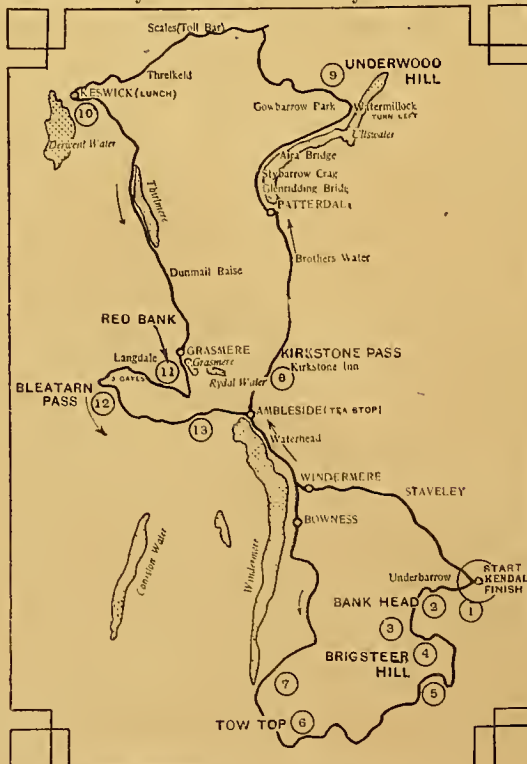


# AUTUMN ONE DAY RELIABILITY TRIAL

A SEVERE TEST IN LAKELAND.

**Q**UITE the most severe one day trial which has yet been held by the Auto Cycle Union started from Kendal on Saturday morning last. The entries amounted to fifty-eight, and of these the non-starters were L. Pennington (A.J.S.), J. Pass (Clyde), and F. Fisher (8 Chater-Lea sc.). Harry Reed, who had entered in the bicycle class, had a sidecar attached to his 8 h.p. Dot.

Immediately on leaving the garage a turn to the left was taken up quite a steep hill, which was a foretaste of what was to come. The surface was excellent on the 1 in 5 portion, but at the very summit—the hill was a mile long—it was very greasy. Thereafter for a spell the roads were good, but interspersed with steep pitches. Then a sharp turn to the left was taken and a by-lane followed which called for careful negotiation. Shortly we came on a watersplash just deep enough to souse the belts, and on the narrow bridge by which it could be avoided a marshal was stationed. Then the main road was entered, and thereafter the going was excellent. There had been a white frost in the night, and the morning broke fine, though somewhat misty. Snow lay on the mountain tops and ice in the puddles on the road. The fog had been so bad in the Midlands the day before, and everyone dreaded it and talked of nothing else the previous evening, that it was a relief when it was seen that all that remained of it was a slight haze over the mountains. The first hill after Kendal—Brigsteer—was encountered after the watersplash, and, though steep and tricky, it was as nothing in comparison with Tow Top; nor yet was Duke's Hill, which, owing to the nature of its approach, was strongly reminiscent of Byber's in the Six Days' Trial.



Map of the course of the A.C.U. Autumn One-day Trial.

Low Top was approached suddenly from the main road. It consisted of a series of sharp corners with a maximum gradient of 1 in 4 and a surface of loose granite. It was the first real test of the day, and accounted for many failures. Newsome (Rover), Noble (Rover), Horsman (Singer), and Alexander, jun. (Indian), all came up in good form. Beal (N.S.U.) dismounted and ran. Norris and Lee (New Imperials) both dismounted. Braithwaite (Rudge) got up, but Gilbanks (Douglas) dismounted. Bennison (W.D.) was balked and brought to a standstill by an inconsiderate non-competitor, who did not appear to be at all concerned at what he had done.

On our suggestion, the judges present (Messrs. Greenhill and Little) allowed him another try, on which occasion he was successful. Ratcliff (B.S.A.) dismounted. De la Heay and Greenwood, both mounted on the new Sunbeams, made



Starting the first two—D. H. Noble and C. T. Newsome (3i Rovers) who both made non-stop runs and were two of but five to climb Blea Tarn Pass.

steady and sure ascents. Walker (Monarch) went up steadily. Tessier (Bat) and Busby (Alldays) made excellent ascents. Underhill (Monarch) and Wilkins (P. and M.) came to a stop. Moffatt (Zenith), Clow (Zenith), Newey (Ariel), North (Ariel), Thornton (Swan), and Ball (Triumph) all came up in good form. Kerr (N.S.U.) skidded and stopped. Hardee (Triumph) came up well. Ross (Triumph) failed. Harry Reed (Dot sc.) came up in excellent style. Mrs. Hardee (P. and M.), Pratt and Shaw (P. and M.'s), Walker (Rudge), and Rowlandson (Rudge) all came up in a bunch. Lester (P. and M.) and Mrs. Hardee both failed, but by a remarkably clever piece of steering Rowlandson cleverly threaded his way through the tangle. Walker (Monarch) and Oliphant (Premier) failed. Harrison (Rudge) made a good climb, and Crawley (Triumph) came up very well indeed. Rothwell (Douglas) came to a stop, and on someone asking him if he was looking for them (hills presumably) he remarked, "I'm not looking for any thing, but when I conks out I conks out." Gray (Rudge) came up well, but assisted slightly with his feet. Morgan (Morgan runabout) made a splendid climb. The arrival of the Humberette was eagerly awaited, but unfortunately it





## TOW TOP, A STEEP AND STONY ZIGZAG CLIMB.

Hal Harrison (3½ h.p. Rudge-Multi) passing stranded competitors.

T. C. De la Heay on one of the two Sunbeams, followed by A. H. Ratcliff (3½ h.p. B.S.A.)

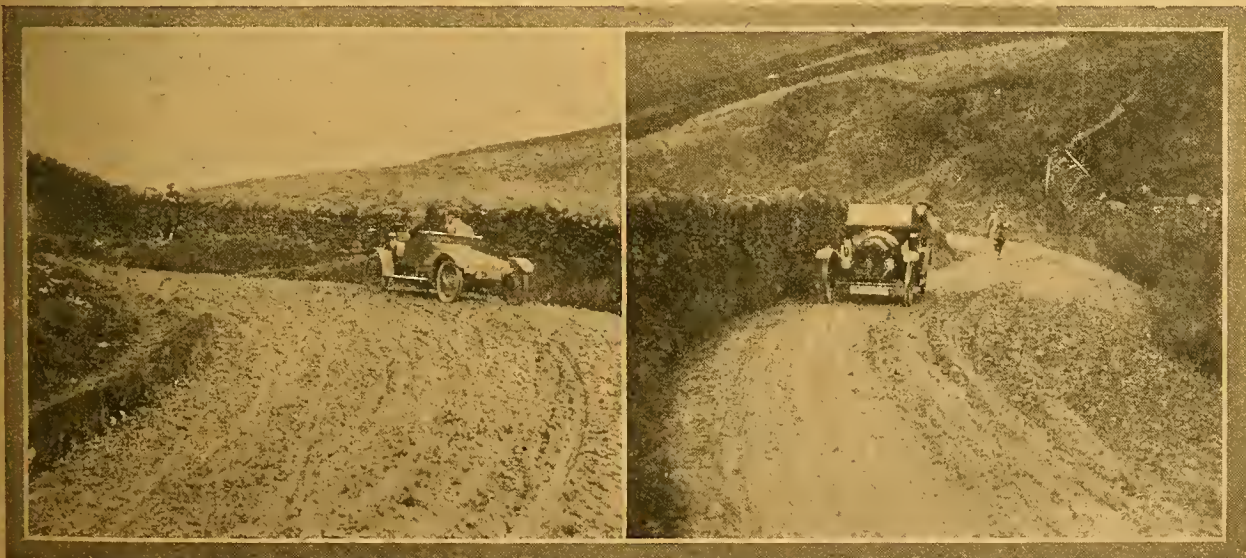
came to a standstill. Anyhow it left barely room for Mundy (G.W.K.) to get by, but the latter, by dint of skilful handling, made an excellent ascent. South (long stroke Rudge sc.) went up well with the passenger leaning over the carrier. Chater-Lea, jun. (Chater-Lea sc.), F. Smith (Clyno sc.), and Keiller and Wood (G.W.K.'s) all made excellent ascents. Dixon (New Hudson sc.), and Eames and Munday (A.C.'s) came to a standstill. Tessier (Bat) probably made the best ascent of the solo machine riders.

Tow Top was a good test and a fair one, and a pleasing contrast to what was to follow in the afternoon, but to this we shall refer later.

From Tow Top the course continued over undulating and twisty roads, necessitating a watchful eye ahead. The picturesque views were much enjoyed. Soon after Staveley a sharp turn was taken to the right up Gummers How and Strawberry Bank, long ascents through woodlands, culminating in a pitch of 1 in 5 or 6, which was covered with loose stones. The highest point is 1,054 feet above sea level, and the view of Windermere from the top is a sight to be

remembered. Here many met their Waterloo. The Rovers, Sunbeams, Horsman's Singer, Crawley's Triumph, the Ariels, and the Indians made fine climbs, but Beal came to a full stop, his little N.S.U. twin being geared much too high for such a severe trial. J. A. Lee (New Imperial) stopped, as also P. N. Gilbanks (Douglas), H. C. Wilkins, and C. Lester (P. and M.'s) and the Humberette. V. Underhill (3½ h.p. Monarch) failed simply because he had to use his feet for steadying himself, and his low gear happens to be foot operated.

Among the best performances may be mentioned S. T. Tessier (twin Bat), who tore up the gradient at over 25 m.p.h. (wobbling badly on the loose stones), S. A. Rowlandson (Rudge), W. Pratt (P. and M.), and J. Oliphant (Premier). A. H. Ratcliff (B.S.A.) just got up by dint of clutch slipping. Of the passenger machines, R. G. Mundy (G.W.K.) went up neatly with none too much power in hand; the Morgan, which steered a remarkably straight course; and H. G. Dixon (New Hudson), whose performance with an 85 x 88 mm. engine, geared 11¼ to 1 on the low, was an eye-opener to the knot of spectators assembled on the hill. The Chater-Lea and



A G.W.K. (driven by C. M. Keiller) rounding the first bend on "The Struggle," Kirkstone Pass.

The Humberette (driven by S. Wright) nearing the summit of Kirkstone Pass.



**Autumn One-day Reliability Trial.—**

Clyno sidecars made sure climbs. Harry Reed, though he had ample power, could not use it owing to the loose surface; still he got up successfully.

Mrs. Hardee suffered a sooted plug in the lower reaches of the hill, and so elected to retire, as also did T. J. Ross, who could not get a low enough ratio on his Triumph with N.S.U. gear.

**Ascent of Kirkstone Pass.**

Through Winster and Bowness, over less difficult roads, a magnificent run was enjoyed by the side of Windermere to Ambleside. Here the riders halted for a moment or two at the arranged check, and then commenced the ascent of Kirkstone Pass. In some respects this momentary halt was to be regretted, as the engines had a chance to cool. Kirkstone, however, is long enough to test the coolness of running of the best engines, for, commencing with a real hairpin, it is long and after over a mile of real climbing the last stretch zigzags for a quarter of a mile on a single figure gradient. To make matters worse the road had recently been covered with stones, thick mud being used as the binding material. A track of about 2ft. was cleared for the solo mounts or more would have stopped.

Most of those who had performed conspicuously on the previous test hills were again to the front, so we need not mention them individually. Those who stopped included Beal, Nixon, and Moffatt.

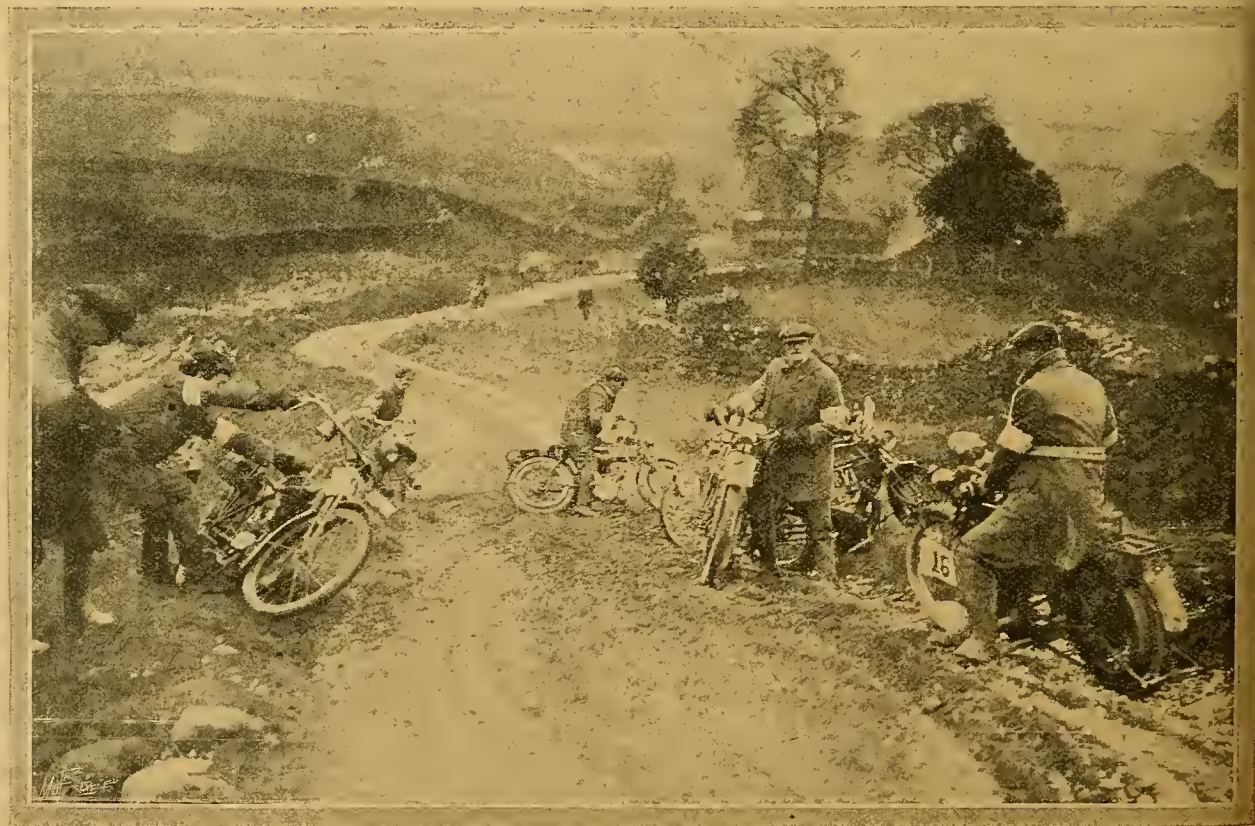
The passenger machines suffered badly. Reed's belt jumped off, the two A.C.'s could not get sufficient grip for their back wheels, whilst H. G. Dixon came to a standstill momentarily; his engine, nevertheless, pulled like a Trojan, and with the passenger's weight over the back wheel the machine picked up again. J. Chater-Lea was rather hindered by the Clyno, which was pegging away steadily in the middle of the road, but there was no room to pass. Both got up well. South's 750 c.c. Rudge-multi sidecar had a low gear of 7 to 1 only, and though the new long-stroke engine tugged gamely it was touch and go on the steep section.



A right angle bend through a gateway. Eric Walker (4<sup>th</sup> Mon arch) on the way to Blea Tarn.

The trio of G.W.K.'s made very creditable performances.

As we descended Kirkstone we could not help feeling how far the French road engineer was ahead of his English cousin in the actual engineering of the road, and how far behind him in road surface. However, to spread thick mud and stones on an important pass like Kirkstone is not road mending, although it only extended for 20 or 30 yards.



—SCENE ON BLEA TARN PASS, which was climbed by only five competitors. This test hill was subsequently ruled out owing to the impossible state of the surface. In our opinion the hill should never have been included.



**Autumn One-day Reliability Trial.—**

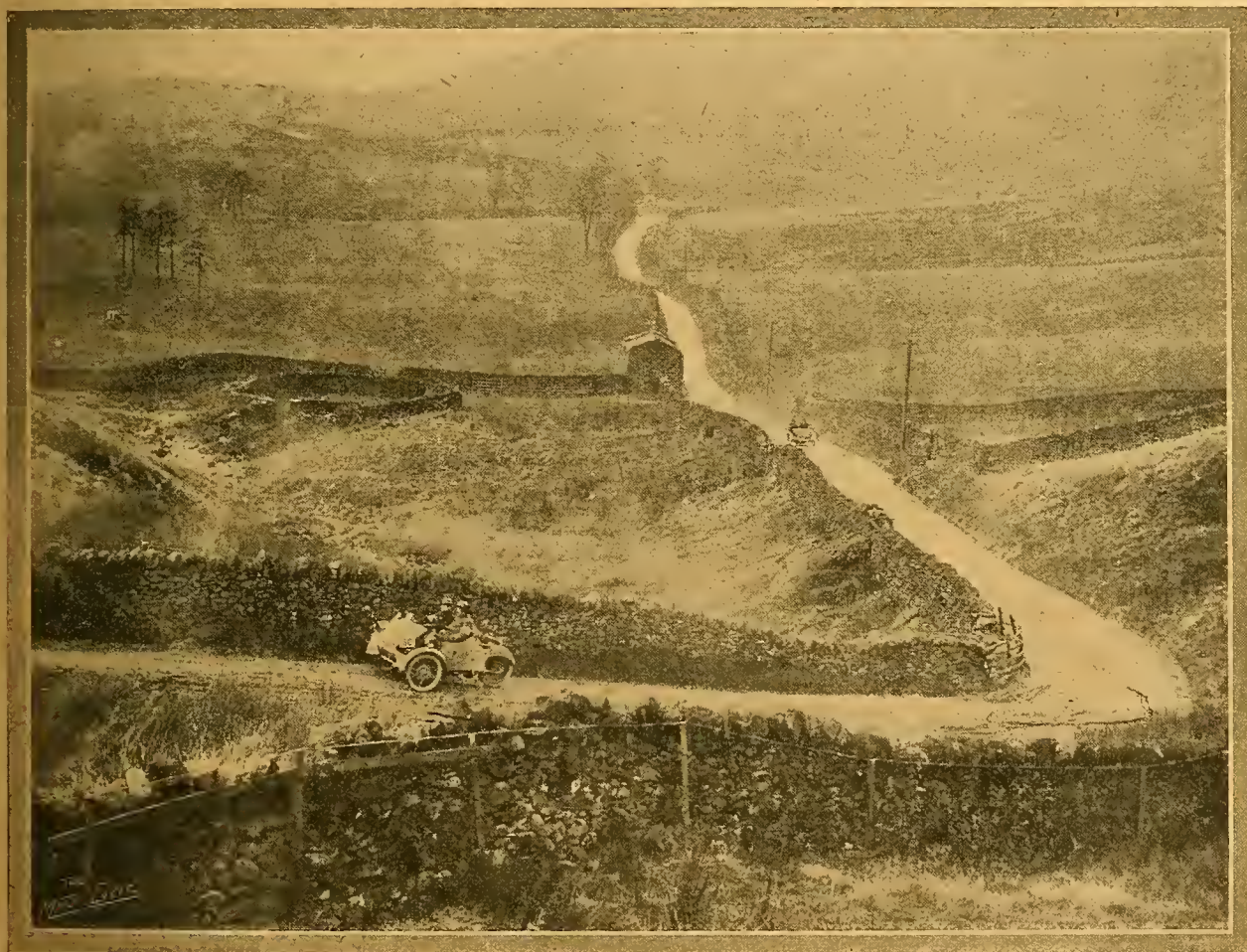
Presently the pretty little lake known as Brothers' Water came into view, and next beautiful Ullswater, whence there was a glorious glimpse back over the mountains through which we had just come. In this section Harry Reed suffered a puncture and South had the fastener pull through the belt. The final run into Keswick was over magnificent roads, but was marred by endless flocks of sheep. Ilvellyn, which towered on the left, had its summit covered with a sprinkling of snow. The last climb before lunch was up to Druid's Corner. The lunch which was served in the Royal Oak Hotel was of the very best. Among those who had retired in the section before lunch was Underhill (Monarch), whose hub gear seized near Scarfoot. Alec Ross was in charge at Keswick. About a mile from Keswick

(Premier), and Ball (Triumph). The view from the top of Red Bank was very fine, as it overlooked Grasneve and the mountains behind.

The roads continued to be excellent for the most part, but they were particularly narrow in the neighbourhood of Great Langdale. Over two or three miniature "Ballig Bridges," round right-angle turns, through gates, and over a road through a meadow, the competitors struck the *pièce de résistance* of the trial, viz., Blea Tarn Pass, called after one of the many tarns of that name.

**A Well Nigh Impossible Climb.**

Here the ascent zigzagged with an average gradient of 1 in 6½ and a maximum of 1 in 3 (according to the local surveyor), but what troubled the riders was the loose sur-



General view of the last stretch of Kirkstone Pass. The competitor in front is A. G. Eames (A.C.), followed by H. C. Munday on a similar machine. Our photographer was standing on the road above the bend for this picture, which will give some idea of its winding nature.

there was a long hill which was quite steep at the foot and then rather easier. On the summit of this the wind began to make itself felt, and from here on it blew a gale in the face of the riders, who, skirting pretty Thirlmere, had to battle against it on their way to the Langdale district. However, the machines took little notice of Dunmail Raise, despite the heavy wind. Red Bank, the second timed hill, was the next item of interest. It was fairly steep, rather greasy, and possessing a watercourse half-way up. The first few riders took it with ease. Among these we may mention the two Rovers, Tessier (Bat), the two Alexanders and their Indians, the two Sunbeams, Bushy (Alldays), Horsman (Singer), North (Ariel), Newey (Ariel), Walker (Monarch), Wilkins (Zenith), Braithwaite (Rudge), Shaw (P. and M.), Rowlandson (Rudge), Pratt (P. and M.), Lester (P. and M.)—the P. and M.'s were particularly quiet—Lee (Imperial), Ratcliff (B.S.A.), Clow (Zenith), Gray (Rudge), Oliphant

race of soft earth and stones, which provided no adhesion for the tyres. Big ruts were soon churned up by the wheels. The scene at this hill has never been equalled in our experience of reliability trials. It could be likened to a battlefield, for all the way up riders were struggling with their machines to prevent them running backwards, others had been hastily dragged aside to make way, and at one point not more than two hundred yards from the foot there was a bunch of five or six. When the two leaders, Newsome and Noble, on three-speed Rovers, came along and got up with foot assistance at the first time of asking, followed by No. 5, J. R. Alexander, jun. (7 Indian), it was thought that the climb would not trouble the competitors so much. Lakeland motor cyclists had gathered here in force in anticipation of seeing some fun. We gathered that they were jealous of the fuss made of Porlock in the Six Days' Trials, and all were keen on proving that



**Autumn One-day Reliability Trial.—**

the Lake District boasts one better. But whether it is a fair climb—ask the fallen ones. The successful riders say yes. Our own opinion is that it was distinctly unfair, simply because it was not a matter of engine power, but only the lack of surface for the driving wheels to grip, which caused all the failures.

For nearly half an hour the competitors continued to fall off their machines, some having two or three attempts without success, but still one more was destined to show the way to the summit, and this was Crawley on the Triumph, fitted with a Sturmey-Archer gear. He started well, but was soon performing weird gyrations, his front wheel first pointing one way and then the other as the back wheel slewed round. He stuck pluckily to his task, and his effort was rewarded with success. But it was a most exciting and daring exhibition not unattended with risks. Several riders performed remarkable evolutions in determined attempts to retain their non-stop records. Tessier's Bat was really fast, but a huge skid landed the rider in the bank. F. C. North got near the top, but his back wheel suddenly slid from under him, and in a second his machine shot up a bank. G. D. Hardee ran off the road and charged G. N. Norris, who had removed his machine several yards on to the grass. Poor Pratt was much upset when he was brought to a stop, and there were many others who said nasty things about the man who selected such a hill. There is no disguising that fact that the so-called test was a farce.

The passenger machines were eagerly awaited, but all were doomed to failure, though Frank Smith must be given the credit for the best showing. He got over the worst part by dint of much jockeying and other extraordinary methods, but on the last bend but one he ran on to loose surface, and the Clyno's wheels stepped, though the engine at once picked up again after willing watchers had given him a push off. South (Rudge) pulled his belt through, and was equally unfortunate at the next attempt.

**The Run Home.**

As the rear guard of the competitors were leaving Blea Tarn it began to rain, and the mountains were left shrouded in mist. The little Tarn giving its name to the now famous hill looked dreary in the extreme. The road surface was better, though the descent on the other side was steep and winding. One other hill had to be surmounted, and this was Foolstop, a few miles from Ambleside. It was fairly short, but very steep, and accounted for about a dozen failures. The rain became worse and the roads were soon very wet and greasy. At Ambleside, at the White Lion Hotel. *The Motor Cycle* provided tea for the competitors—an institution which, some are good enough to say, is much appreciated. There was a good deal of grumbling about Blea Tarn which the



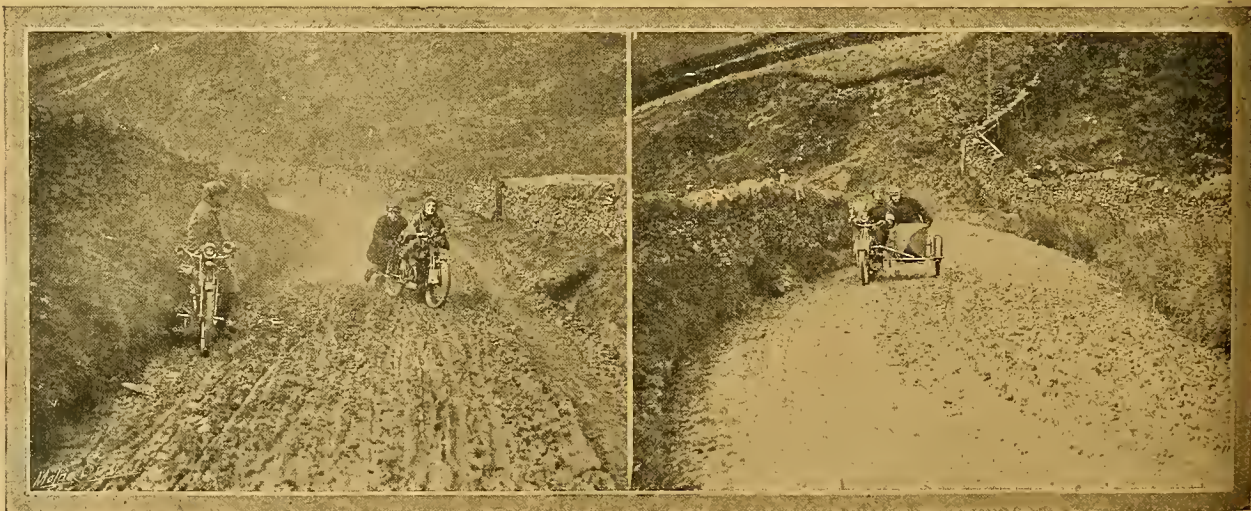
Competitors springing themselves out on Blea Tarn Pass. The three depicted skidded into each other. Observe the state of the surface which accounts solely for so many failures.

officials duly took into account, and after the conclusion of the trial the following notice was posted in the official hotel:

"Owing to the surface of Blea Tarn Pass having churned up worse than was anticipated, the judges have decided that failures on this hill shall not be recorded as a stop, and a latitude of ten minutes will be allowed in consequence at Kendal. On the other hand the certificates of those who made specially meritorious ascents of Blea Tarn Pass will be endorsed to that effect.

Especially good climbs were made by C. T. Newsome (3½ Rover), D. H. Nohle (3½ Rover), J. R. Alexander (7 Indian), V. Busby (3½ Alldays), and S. Crawley (3½ Triumph); meritorious climbs by P. Shaw (3½ P. and M.), S. A. Rowlandson (3½ Rudge), and F. Smith (5-6 Clyno)."

The trial was a great success and splendidly organised. Not an arrow was missing, and the marshalling was excellent. The only mistake was the inclusion of Blea Tarn, and that the officials remedied.



(1) A cheerful failure on Kirkstone Pass.

(2) F. Smith (Clyno) on Kirkstone Pass.



## LIST OF COMPETITORS AND THEIR PERFORMANCES.

## BICYCLE CLASS.

Rider, H.P., and Make of Machine. *Denotes private owners.	No. of Cyls.	Bore and Stroke.	Cubic Capa- city.	Gear.	Remarks.
		mm.	c.c.		
C. T. Newsome (3½ Rover) .....	1	85 × 88	499	Sturmey ..	Non-stop.
D. H. Noble (3½ Rover) .....	1	85 × 88	499	Sturmey ..	Non-stop.
*J. R. Alexander, jun. (7 Indian) ....	2	82.5 × 93	994	Indian ....	Non-stop.
J. E. Greenwood (2½ Sunbeam) .....	1	75 × 79	349	Sunbeam ..	Non-stop.
Eric Walker (4½ Monarch) .....	1	89 × 96	597	Roe .....	Non-stop.
S. T. Tessier (5 Bat) .....	2	76 × 85	770	Armstrong	Non-stop.
L. Newey (3½ Ariel) .....	1	86.5 × 85	498	Armstrong	Non-stop.
F. C. North (3½ Ariel) .....	1	86.5 × 85	498	Armstrong	Non-stop.
*G. D. Hardee (3½ Triumph) .....	1	85 × 88	499	Sturmey ..	Non-stop.
W. Pratt (3½ P. & M.) .....	1	82.5 × 89	475	P. & M. ....	Non-stop.
P. Shaw (3½ P. & M.) .....	1	82.5 × 89	475	P. & M. ....	Non-stop.
S. A. Rowlandson (3½ Rudge) .....	1	85 × 88	499	Rudge .....	Non-stop.
G. T. Gray (3½ Rudge) .....	1	85 × 88	499	Rudge .....	Non-stop.
S. Crawley (3½ Triumph) .....	1	85 × 88	499	Sturmey ..	Non-stop.
*V. E. Horsman (3½ Singer) .....	1	85 × 88	499	Sturmey ..	Stopped on Red Bank.
A. H. Alexander (7 Indian) .....	2	82.5 × 93	994	Indian .....	One stop, saddle twisted.
*H. J. Beal (3 N.S.U.) .....	2	—	396	N.S.U. ....	Stopped Tow Top and Gummer's How, retired Keswick.
*J. D. Nixon (3½ Rudge) .....	1	85 × 88	499	Sturmey ..	Stopped on Kirkstone, also near Keswick
*G. B. Bennison (3½ W.D.) .....	1	85 × 88	499	Sturmey ..	Retired, gear seized.
G. N. Norris (3½ New Imperial) ....	1	85 × 85	482	Armstrong	Stopped on Tow Top, Red Bank, and Kirkstone.
J. Andrew Lee (4½ New Imperial) ....	1	89 × 96	597	Sturmey ..	Stopped Tow Top and Gummer's How.
T. C. De la Heay (2½ Sunbeam) ....	1	75 × 79	349	Sunbeam ..	One stop, petrol turned off.
*A. H. Ratcliff (3½ B.S.A.) .....	1	85 × 88	499	B.S.A. ....	Stopped Tow Top and another hill.
*P. N. Gilbanks (2½ Douglas) .....	2	60 × 60	345	Douglas ..	Frozen carburetter, puncture, and stopped on Red Bank
G. W. Braithwaite (3½ Rudge) .....	1	85 × 88	499	Rudge .....	Three stops for petrol.
V. Underhill (3½ Monarch) .....	1	85 × 88	499	Roe .....	Stopped on Brigsteer, Tow Top, and Red Bank
*E. A. Wilson (3½ New Hudson) .....	1	85 × 85	488	Armstrong	Retired.
*H. C. Wilkins (3½ P. & M.) .....	1	82.5 × 89	475	P. & M. ....	Stopped on Tow Top and Gummer's How.
*E. C. Clow (6 Zenith) .....	2	76 × 85	770	Zenith ....	Retired.
Harry Reed (8 Dot) .....	2	85 × 85	986	Dot .....	Puncture and other troubles
R. Rhodes (3½ Wulfruna) .....	1	84 × 89	499	G.H. ....	Retired.
V. Busby (3½ Alldays) .....	1	85 × 88	499	Alldays ..	One stop, petrol turned off.
*A. J. Moffatt (3½ Zenith) .....	1	85 × 85	488	Zenith ....	Stopped on Kirkstone.
F. H. Thornton (4 Swan) .....	1	85 × 85	480	Swan .....	Stopped on Kirkstone, Watermillock, and Red Bank.
*H. Ball (3½ Triumph) .....	1	85 × 88	499	Sturmey ..	Stopped on Gummer's How.
*J. H. Kerr (6 N.S.U.) .....	2	75 × 94	830	N.S.U. ....	Stopped on Tow Top.
*Mrs. M. Hardee (3½ P. & M.) .....	1	82.5 × 89	475	P. & M. ....	Retired.
*T. J. Ross (3½ Triumph) .....	1	85 × 88	499	N.S.U. ....	Retired.
*P. D. Walker (3½ Rudge) .....	1	85 × 88	499	Rudge .....	Stopped on Tow Top and Red Bank.
C. Lester (3½ P. & M.) .....	1	82.5 × 89	475	P. & M. ....	Stopped on Tow Top, Gummer's How, and Kirkstone.
J. Oliphant (3½ Premier) .....	1	85 × 88	499	Armstrong	Stopped on Tow Top.
*Hal Harrison (3½ Rudge) .....	1	85 × 88	499	Rudge .....	Broken belt.
*R. R. Rothwell (2½ Douglas) .....	2	61 × 60	350	Douglas ..	Stopped on Tow Top and Kirkstone.

## PASSENGER AND CYCLECAR CLASS.

R. G. Mundy (8 G.W.K.) .....	2	86 × 92	1068	G.W.K. ....	Non-stop.
H. F. S. Morgan (8 Morgan runabout)	2	85 × 85	964	Morgan ...	Non-stop.
J. Chater-Lea, jun. (8 Chater-Lea sc.)	2	85 × 85	964	Chater-Lea	Non-stop.
F. Smith (5-6 Clyno sidecar) .....	2	76 × 82	744	Clyno ....	Non-stop.
J. T. Wood (8 G.W.K.) .....	2	86 × 92	1068	G.W.K. ....	Non-stop.
Sam Wright (8 Humberette) .....	2	84 × 90	998	Humber ..	Stopped on Tow Top, Kirkstone and Red Bank
A. G. Eames (5-6 A.C. sociable) .....	1	95 × 102	732	A.C. ....	Stopped on Kirkstone and Foolstop.
H. C. Munday (5-6 A.C. sociable) .....	1	95 × 102	732	A.C. ....	Stopped on Kirkstone and Foolstop.
H. G. Dixon (3½ New Hudson sidecar)	1	85 × 88	499	Armstrong	Stopped on Bank Head, puncture and broken valve.
C. M. Keiffer (8 G.W.K.) .....	2	86 × 92	1068	G.W.K. ....	One stop, missed gear change.
W. D. South (5 Rudge sidecar) .....	1	85 × 132	750	Rudge ....	Three stops for belt, failed Foolstop.

## Autumn Trial Notes.

Which is the more difficult climb, Blea Tarn Pass or Porlock in the mud? Most consider that the former is.

It was almost certain that the Lakeland terror would be ruled out. Even a motor bicycle of 1920 may not succeed unless the surface be altered.

Some said the first arrivals at the Pass had the best chance of success, owing to the surface being more even. Seeing that Nos. 1, 2, and 5 got up, there may be something in this, but Busby was No. 26 and Crawley 44. All five successful soloists, of course, trailed their feet to steady themselves. There was no such thing as an absolutely clean ascent of Blea Tarn.

Dixon made an exceedingly plucky attempt to take his 3½ New Hudson sc. through the trial. Several times he succeeded when solo riders of machines fitted with engines of the same size came to a standstill.

The Humberette was much admired. In each case the stops on hills were due to the clutch refusing to grip, the engine all the time running splendidly.

A useful suggestion emanating from Mr. H. F. S. Morgan was that before a surprisingly steep hill is definitely selected that a 15 h.p. car should be sent up. If it be unclimbable by a good 15 h.p., it should not be included in the trial.



### Autumn Trial Notes.—

The two 7 h.p. Indians, ridden by the Brothers Alexander, had beautifully clean engines at the finish of the trial.

Why did the officials ignore at the luncheon interval the regulation regarding filling up with water?

Some rode nearly five hundred miles to compete in the trial. Mrs. Hardee, for instance, rode her P. and M. from town, along the Great North Road to Kendal *via* Skipton and Settle.

Our staff were mounted on Triumph and Douglas machines, which acquitted themselves remarkably well. The Triumph was practically a 1913 model with Sturmey-Archer gear and other refinements, including a new and efficient silencer, which will form the subject of an article in these pages shortly.

With the course so severe, including hills with single figure gradients every twenty miles at least, it is not surprising that the percentage of non-stops was low. Nineteen out of fifty-four starters gained non-stop certificates.

Even the panting and crestfallen competitors on Blea Tarn Pass could not refrain from remarking upon the gorgeous view.

Many started back by road from Kendal, but owing to drenching rain most decided to take train after reaching a town where the service was good.

Odds were offered before the trial that no machine would get up Blea Tarn. A number who had faith that their machines would climb anything willingly accepted the wager, and were poorer on Saturday night.

Another trial like Saturday's in the Lake District will put a stopper on amateur entries. A number whose machines were somewhat battered were asking themselves where the fun came in on such indescribable hill surfaces.

Harry Reed's Dot-Jap was fitted with a three-speed counter-shaft gear, the first drive being by chain and the second by belt.

The first few miles of the course were through extremely narrow lanes; two sidecars or cyclecars could not possibly have passed. One description of the route was that it resembled the edge of an enormous saw, the competitors riding up and down the teeth.



The two Rover riders, D. H. Noble and C. T. Newsome, who were the first two competitors to make an ascent of Blea Tarn Pass.

Our thanks are due to Rex Mundy, who took one of our staff as passenger on the G.W.K. No. 47. We thoroughly enjoyed the run, and our opinion of the friction drive was enhanced thereby.

If rumour be true, someone has invented an indicator which will automatically register all stops in road trials. Mr. Loughborough told us he had long ago suggested an indicator to register the average speed throughout a trial. A combination of the two in one instrument would save a lot of trouble.



ASCENDING TOW TOP.

W. D. South on the 750 c.c. Rudge Multi and sidecar.

H. F. S. Morgan (Morgan runabout), who as usual made a non-stop run.

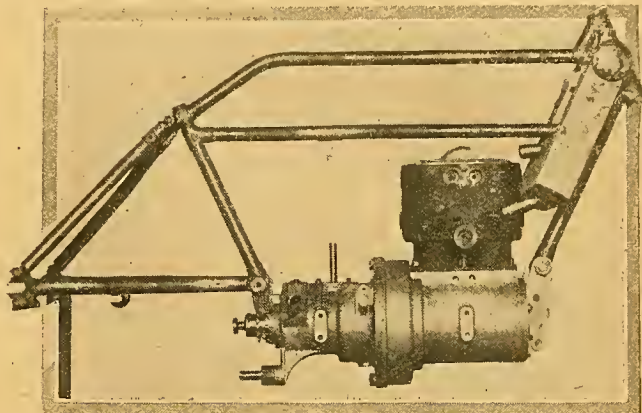


## A Twin Two-stroke Vertical Engine.

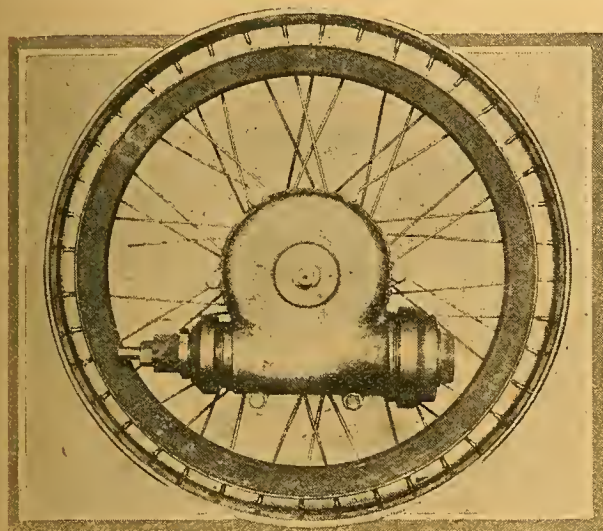
JUST about a year ago we gave a description of the Stuart-Turner two-stroke motor bicycle, the forerunner of the improved type we are about to describe. The new model, which will be handled exclusively by Messrs. R. G. Nye and Co., Hampstead Road, N.W., is a particularly interesting machine and a pleasing departure from standard practice. It is designed specially for sidecar work. The engine, which develops 8 h.p., is a two-stroke, and has a bore and stroke of 78x82 mm. The cylinders, which are placed tandem fashion, are two in number, so that an impulse is given every revolution, and are water-cooled. The two cylinders form a monobloc casting, the top of the water-jacket being a detachable aluminium plate, so that the water-spaces may be easily cleaned out. The crank case and gear box form a single unit. The clutch, which is contained in the flywheel, is situated inside the crank case

the ordinary sliding universal joints which are fitted suffice. The worm appears to be of somewhat larger dimensions than would be expected on a motor cycle, but this is not actually the case, as the chief reason for its big appearance is the size of the ball thrust behind it, which is designed so as to be fully up to the work it will have to do.

A belt rim is attached to the rear wheel, acting solely as a bearing surface for the rear brake. The worm is self-



The tandem type twin-cylinder two-stroke engine, also rear frame of the new Stuart.

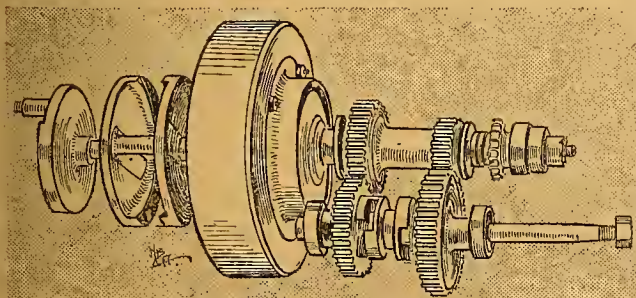


The back wheel and worm drive.

and is of the multi-disc type. The crankshaft is in two portions. The first part, turned out of the solid, has the balance weights shrunk on and pinned, while the second portion is built on to the first, and the balance weight forms an integral portion thereof.

### Two-speed Gear Box.

The gear box provides two speeds, the change being effected by means of sliding dogs. In our illustration of the partly finished power unit the further vertical shaft is the gear-striking rod, which is operated by a lever working fore and aft situated adjacent to the tank. To the shaft, projecting horizontally from the after end of the gear box, the chain sprocket connected up to the kick starter is fitted. To the other shaft, projecting above the gear box, the clutch pedal is attached, as this operates the clutch fork. The gear box and final drive, which is by worm, are connected by a short propeller-shaft. This is almost in line, so that



The 1913 Stuart-Turner transmission, showing crankshaft, flywheel, plate clutch and gears.

contained, and allows the back wheel to be withdrawn after undoing two or three nuts. Adjustable footrests, which may be altered to suit the rider's convenience, are supplied. Ball bearings are fitted throughout, and these are provided with the Stuart-Turner patent frictionless air and oil-tight sleeves, which have been previously described in *The Motor Cycle*.

The oil is fed from the tank through a drip feed, by pressure from the crank case to the cylinder walls and base chamber. The petrol tank contains two gallons, while an Amac carburettor and Druid forks are supplied. The frame is of strong construction, and has the top tube dropped at the rear. The magneto is carried behind the engine, and is driven off the gears by a Coventry Silent chain, which runs through a slot in the gear box shown in the photograph. This slot is covered by a small aluminium dome.

Our illustrations of the power unit, showing the thermosyphon circulation and honeycomb radiator, and the sketch of the crankshaft and transmission system, demonstrate that the machine is neatly and simply designed. It is manufactured by a firm of engineers of long experience.



F. C. North (3½ Ariel), who made an exceedingly plucky attempt to climb Blea Tarn Pass. He had reached the last bend when his machine leaped sideways and mounted the bank as seen in the photograph.



## CURRENT CHAT.



## TIME TO LIGHT LAMPS.

Oct. 31st	...	...	5.34 p.m.
Nov. 2nd	...	...	5.30 "
" 4th	...	...	5.27 "
" 6th	...	...	5.23 "

## Rivington Pike Hill-climb.

Mr. Phillpott writes that in Class II. for single-cylinder sidecars on formula, Hugh Gibson (3½ Bradbury) gained third position.

## A.C.U. Autumn Trial.

The excellent photographs of the above trial, reproduced in this issue, were taken by one of our staff photographers, who, as usual, accompanied the competitors mounted on his motor bicycle.

## Motor Cycle Cut-outs.

The President of the Local Government Board was asked in the House of Commons last week if he were in a position to state the steps that he has taken with a view to prohibiting the use of cut-outs or open exhausts on motor cycles.

Mr. Burns's reply was that an order on the subject had been drafted, and he hoped to be in a position to come to a decision in the matter at an early date.

## Motor Cycles at the Front.

In addition to the specially fitted up F.N. illustrated on the next page for the use of a cinematograph operator at the Balkan war, Messrs. Collier and Sons have supplied a Matchless motor cycle for a similar purpose to MM. Pathé Frères. That company's operator will be with the Bulgarian Army.

## Successful Year's Trading.

The report of the directors of the Rover Co., Ltd., Coventry, which will be presented to the shareholders at the works, Coventry, on Monday next, shows a trading profit of £57,680. Out of this sum it is proposed to allot £13,057 to pay a 10% dividend. £10,000 will be written off goodwill and patents, £8,000 off plant, and £13,499 will be carried forward.

## Dinner and Presentation to G. E. Stanley.

On Friday evening G. E. Stanley, the hero of the hour record was entertained to dinner by Singer and Co., Ltd., Mr. W. E. Bullock (works manager) presiding. Several congratulatory telegrams were read from well-wishers of the firm. On behalf of the Singer Co., Ltd., the Chairman presented Mr. Stanley with a cheque and gold watch bearing the following inscription. Presented to G. E.

## SPECIAL FEATURES:

## AUTUMN ONE-DAY TRIAL.

Detailed Description and Numerous Illustrations.

## 1913 MODELS.

Advance Details and Illustrations.

## COLLAPSIBLE SIDECARS.

Stanley by Singer and Co., Ltd., in recognition of his many fine performances on Singer motor cycles." His health was then drunk with musical honours. The Chairman humorously explained to those present that it was partly due to Stanley finding the correct cam in an old suit of clothes that the record was secured; a similar but improved cam to the one used was passed round for inspection, and on it were stamped the words "Singer and Co., 1913, 90 miles an hour."

## Benevolent Fund Dinner.

On Thursday evening last the annual dinner of the Motor and Cycle Trades Benevolent Fund was held at the Connaught Rooms, Great Queen Street. Mr. Albert Brown presided.

## First Details of 1913 Models.

This week's issue contains the first illustrated descriptions of:

The new Crouch carette.

The 1913 Rex single and sidecar.

Two improved types of collapsible sidecars.

The 1913 Calcott.

New chain-driven Matchless.

James three-speed gear.

Chassis view and details of the Baby cyclecar.

Alldays Midget car.

Stuart two-stroke twin.

Detailed drawings of Baby Peugeot.

## Brooklands Note.

We are asked to state that F. H. Arnott is not the head of the Rudge racing stable, and has no connection with the firm.

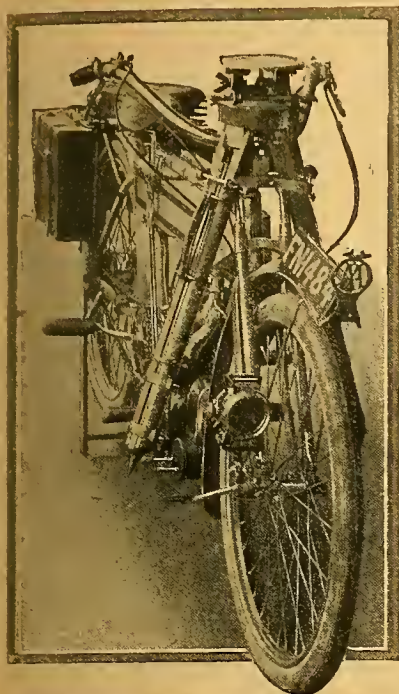
## The Stanley-Bailey Match.

S. L. Bailey writes us a long letter which, unfortunately, we have not space to reproduce *in extenso*, from which it appears that he (Bailey) desired the match run off on October 12th at the B.M.C.R.C. meeting, and pressed for this date. Subsequently, Mr. Bullock, of the Singer Co., said that under no circumstances would Stanley ride the match until he annexed the hour record. Mr. Bailey asks, "Why should I await their convenience, especially as I have other work in hand far more important than a match with Mr. Stanley? When this is completed, I assure your readers I shall not be afraid of the new four (or even fourteen) valve engine." Mr. Bailey then misquotes statements from *The Motor Cycle*, but points out that the special Douglas he is preparing, with light tyres and wheels, will attain a speed of 70 m.p.h. Finally, Mr. Bailey assures us that, so far as the match is concerned, he will use a standard T.T. Douglas.



THE AUTUMN TRIAL IN LAKELAND. H. G. Dixon (New Hudson and sidecar) rounding one of the bends on Kirkstone Pass. The state of the surface will be noted.





A2 1/2 h.p. F.N., equipped in two days, for use at the Front in the Balkans. This was ordered by the Gaumont Film Company after a careful investigation of the merits. In addition to the weight of the operator and some hundreds of pounds of baggage, the machine is taking a sidecar with other kit. It will be used by a Cinematograph operator to obtain war pictures.

### 1913 Models.

A correspondent recently noticed H. A. Collier on the Sevenoaks Road on an 8 h.p. chain-driven Matchless with sidecar and passenger. This rather looks like chain-drive on Matchless machines in 1913.

### Proposed Club for I.O.M.

A meeting of motor cyclists has been held at the Marine Hotel, Peel, to discuss the advisability of forming a motor cycle club for the Isle of Man. There are nearly 100 motor cyclists in the island, but, as yet, no organisation to look after their interests.

### Stolen Machines.

The following machine was stolen last week from a shed at Whittington Barracks, near Lichfield: 1912 New Hudson, three-speed gear, J.A.P. engine (13866), frame 3172, registration number E1729. Lieut. Blackburn offers a reward of £10 to anyone who gives information which will lead to its recovery.

### French Hour Record.

Grapperon, riding a motor cycle with Anzani engine, 85 x 87 mm., 494 c.c., set up a new unofficial French hour record at the Parc des Princes track, Paris, on Friday last. The distance ridden was 52.98 miles. The performance is not official, because the A.C.F. has declined to recognise motor cycle track records accomplished in private tests. Grapperon should come to Brooklands and see if he can approach G. E. Stanley's latest figures. Fourteen and threequarter miles will be the extra distance Grapperon will have to ride in an hour to tie with the British hour record.

### A.A. and M.U. Notes.

**ROAD WARNING.**—Several complaints have been lodged with regard to the speed of motor cycles and cars between Little Heath and Hatfield, and unless more consideration is shown, the police will have no alternative but to institute controls.

### Regrettable Accidents.

Two serious accidents occurred to motor cyclists last week. Frank Philipp, secretary of the Scott Engineering Co., Bradford, collided with a car, and the impact was so violent that the car owner was thrown out and killed, Philipp sustaining a broken leg and other injuries.

E. B. Roper, of Sheffield, was driving a sidecar on a lonely road in Lincolnshire last Friday evening in the fog, when he came into collision with a car and was instantly killed. J. W. Wheatley, jun., also of Sheffield, was the passenger in the sidecar, and he was badly injured about the head, but it is expected that he will recover.

### Alternative Road from Warrington to Preston.

Motorists who have travelled north and south by way of the West Coast road well know the difficulties of the usual road between Warrington and Preston, which, for the most part, runs through busy and unlovely manufacturing centres in which there are many miles of tramlines with much congested traffic. The R.A.C. has had mapped out an alternative road, avoiding practically all these difficulties, nearly all of which is very good, and passes through pleasant country. This alternative road is now being signposted between a point south of Warrington and Preston, so that every motorist will be able to have the advantage of the club's experience. Of course, it is impossible to avoid travelling through Warrington, but in doing so it is not necessary to drive through the centre of the town, and in carrying out the work the Club is signposting an alternative road.

### News.

A recent programme of the Mersey Motor Club states, among other things: "The most businesslike and up-to-date and go ahead motor club in this or any other district."

### Marriage of Well Known Motor Cyclists.

"From now Muriel Hind is Mrs. R. Lord." Such is the wording of a telegram received at our office last week. "Dick" Lord will be recollected as the Rex rider. We extend our heartiest congratulations. We understand Mr. and Mrs. Lord will reside near Coventry.

### Spanish Motor Cycle Competition.

That well-known Douglas exponent, Gordon L. Fletcher, wires from San Sebastian that the cup for the best performance at the Mont Igneldo hill-climb on the 27th inst. was won on a Douglas, which also made fastest time, beating three well-known makes of motor cycles which have larger engines.

### The Safety of Three-wheeled Cyclers.

Mr. Davies's recent query as to what happens when a modern three-wheeler bursts a tyre at high speeds has excited some discussion, and has possibly occasioned a certain gratuitous prejudice against vehicles of this type, which, of course, differ profoundly in detail from the 1906 tricars. The makers of the A.C. tricars inform us that they are arranging a test on Brooklands track during Show week. The test outlined is that an A.C. tricars should be driven round the track at reasonable speed with a large carpet nail (or nails) embedded in the rear cover just so deep as not to penetrate the tube. The demonstration should be interesting, and its success would reassure users more than reams of opinion and correspondence. The bother is that it is rather difficult to arrange a real burst. If the tyre should slowly deflate instead of bursting the test will not be absolutely exhaustive, but the maintenance of a tolerable speed should render mere deflation sufficiently instructive.



SATURDAY'S A.C.U. AUTUMN TRIAL IN LAKELAND.

J. Chater Lea (8 h.p. Chater-Lea sidecar) and H. C. Munday (A.C. sociable) climbing Tow Top.



## The 8 h.p. Crouch Carette.

A New Cyclecar with a Light and Compact Engine and Gear Box Unit.

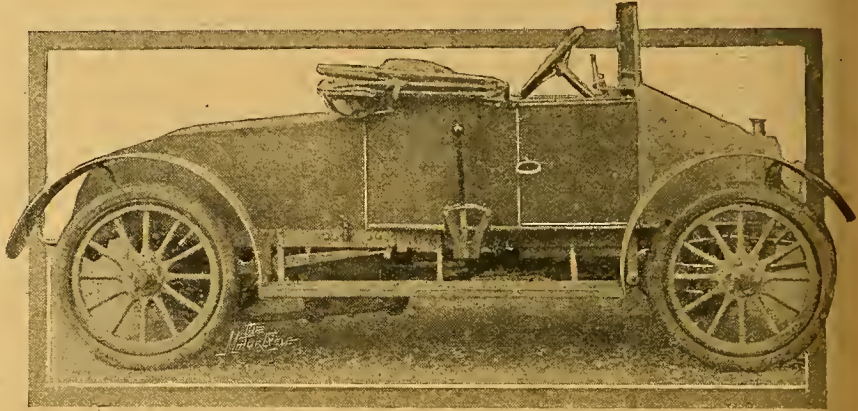
FOR some time we have been aware of tests proceeding with a new Crouch cyclecar. The four-wheeler was soon on the road after it had been resolved to produce such a machine, for practically all the parts used in the construction of the three-wheeled C.M.C. carette were utilised with the exception of the back wheel, a live axle being fitted in its stead. Last week we had a practical trial of the machine, and were favourably impressed by the comfort of the body and efficiency of the springing, the power of the engine, and the ease of management. A more reclining seat would undoubtedly be an advantage, and this small matter is receiving attention. The rack and pinion steering works very freely, and ample lock is provided. The whole machine is clean and workmanlike in appearance despite its unconventional design of radiator in front and the forward position of the seats.

The designer, Mr. W. Crouch, demonstrated the flexibility of the springs by jumping on the tail of the car, which caused a surprisingly big range of motion. The front springs are full elliptical and the rear of the grasshopper type, that is to say, they are pivoted at their forward ends and suspended in the centres, while the rear ends carry the axle. The rear live axle is driven by a short single chain. It has a spur differential, and the whole axle revolves in ball bearings, the wheels being carried on plain bearings which only come into use on rounding corners or when the differential is in action. An adjustable torque rod is fitted, which keeps the chain in alignment and at the correct tension. Both hand and foot brakes are of the internal expanding type.

The power unit is that described in *The Motor Cycle* of September 5th, page 1017. It consists of an 8 h.p. V twin-cylinder water-cooled engine of 80 x 90 mm.

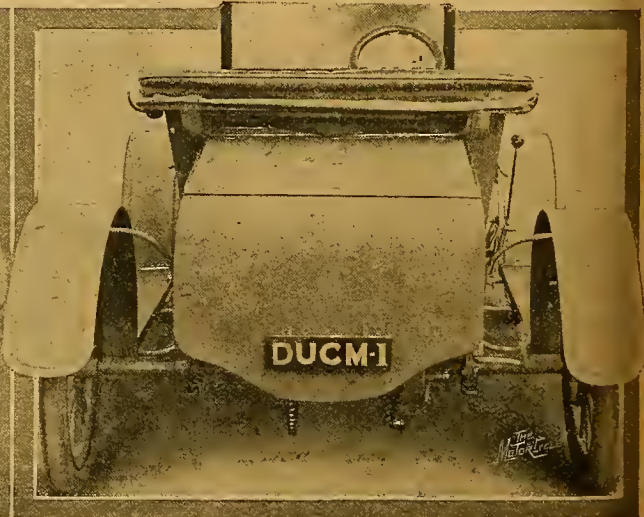
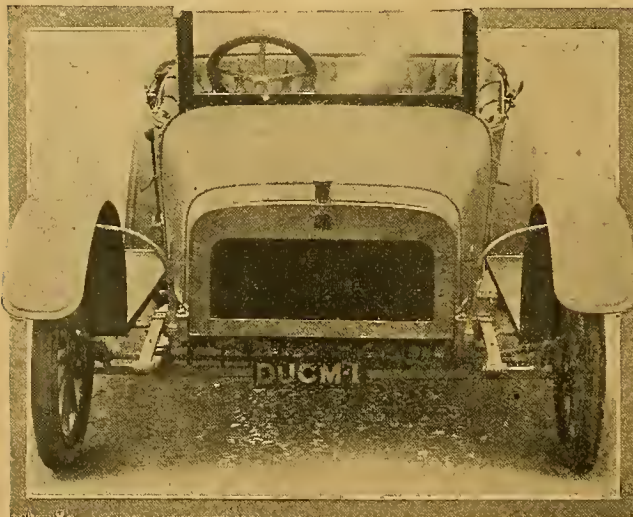
bore and stroke, with cylinders set at 60°, side by side mechanically operated valves enclosed by metal covers. A Bosch magneto and gear water pump are bevel driven from the timing gear side. Bolted to the other side is the gear box and a stout aluminium member enclosing the conical Thermoid faced clutch.

This unit lies behind the seats and across the frame, and the water pump is connected to the radiator in



The new model 8 h.p. C.M.C. three-speed four-wheeler.

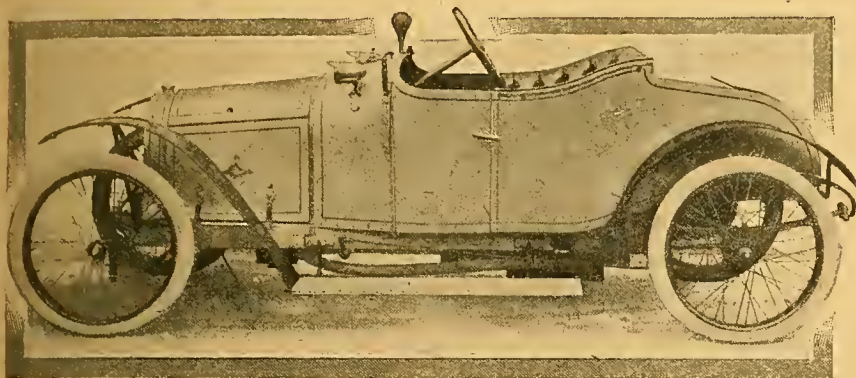
front by rubber pipes. The petrol and oil tanks are arranged immediately behind the engine. The gear box gives three speeds and reverse with a direct drive on top, the ratio being 4.34 to 1, 8 to 1, and 14 to 1. The front axle is of square section, and the wooden wheels are shod with 650 x 65 mm. tyres. A wood and steel fitch plate frame is used. The body is roomy and comfortable, and fitted with two side doors, which is a great convenience, as the driver does not need to disturb the passenger on taking his seat. The mud-guarding is well carried out, and a large underpan will be used to protect the mechanism, but ample ground clearance will be provided, so that the carette will be suitable for Colonial conditions.



Front and rear views of the new C.M.C. carette described on this page.



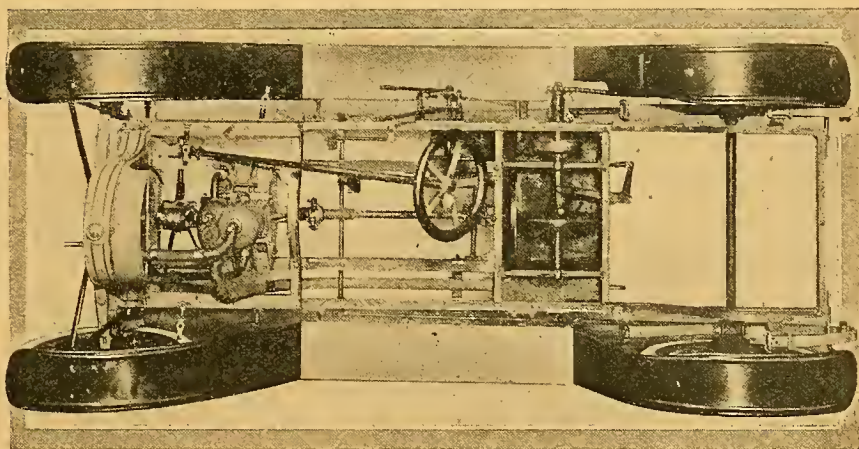
## A Single-cylinder Friction-driven Cyclecar.



The complete sociable seated Baby cyclecar.

**T**HE Baby has arrived. This attractive looking vehicle is a French production, represented in this country. It is driven by a single-cylinder 7 h.p. Buchet water-cooled engine, 90 x 110 mm., mounted transversely in a channel steel frame. The engine, which has mechanically operated inlet valves, is water-cooled on the thermo-syphon principle. The ignition is by Bosch magneto, and the carburetter is a Claudel-Hobson. The lubrication is on the splash system, and the oil is delivered by gravity through a drip feed on the dash to the crank case. The transmission is by shaft to the friction plate, while mounted on a ball-bearing feathered shaft is the leather shod friction wheel, which is arranged to give four forward speed positions and the reverse. On the transverse shaft is carried the foot brake, and from this shaft to the off side rear wheel the transmission is by chain. The brakes controlled by the side levers are on the rear wheels, and are

of the internal expanding type. The control is arranged on standard lines, while an accelerator pedal is fitted. The chassis is suspended on three-quarter elliptical springs at the rear, the front being hung on a transverse spring in a manner similar to that employed on the Sizaire-Naudin car. Radius rods are fitted. We were given a short run through London streets, and found the little vehicle to be well sprung, smooth running, and capable of rapid acceleration. The accompanying photograph shows that the Baby has a most pleasing appearance, being provided with a Prince Henry type body, which is well upholstered and comfortable, possessing a spacious locker at the rear. Hood, screen, and electric side lamps may be purchased fitted to the car at an inclusive price.



Plan view of the Baby cyclecar, showing the 7 h.p. single-cylinder engine in front, friction drive, and general arrangement of parts.

## A.C.U. Silencer Tests.

The committee appointed by the A.C.U. to go into the question of silence has decided that a 500 c.c. single-cylinder engine is satisfactorily silenced by an expansion chamber as shown in the appended drawings. The A.C.U. invites manufacturers and others to submit silencing devices, which will be tested against the "standard" silencer, the following points being taken into consideration:

- Degree of noisiness compared with "standard."
- Weight.
- Volume.

General practicability.

Brake tests will be carried out on a 500 c.c. engine, and entrants must also submit a complete motor cycle fitted with an engine of approximately 500 c.c. and with their silencer. The results of the trial will be published and certificates awarded to all entrants whose silencers are, in the opinion of the committee, worthy of commendation.

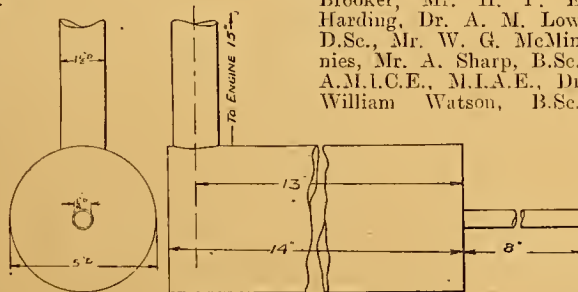
The committee selected to judge in the final tests is composed as follows: Colonel H. G. L. Holden, R.A., C.B., F.R.S. (chairman), Mr. E. M. P.

Boileau, Mr. J. W. G. Brooker, Mr. H. P. E. Harding, Dr. A. M. Low, D.Sc., Mr. W. G. McMinnies, Mr. A. Sharp, B.Sc., A.M.I.C.E., M.I.A.E., Dr. William Watson, B.Sc.,

Auto Cyclé Union Silencer Committee. It will be seen that the gases finally emerge through a  $\frac{1}{2}$  in. pipe.

### A COMPLETE REPAIR OUTFIT.

A complete repair outfit, the Vulco Junior, made by the Roberts Non-skid Co., St. Mary's Row, Birmingham, is one of the most complete outfits that can be found. It contains, besides solution, French chalk, glass paper, and canvas, a box of special valve patches, which have a prepared surface made with the patch, a piece of duplex strip patching, valve tubing, a pencil, a filecard, and a stout inside gaiter. This alone constitutes a full outfit, but such useful articles as plug washers, emery powder, and insulating tape are also included. This firm specialise in tyre repairs and converting tubes to butt enders. They have a wide range of retreads and outside gaiters. They were pioneers in the detachable steel-studded non-skid bands, and supply a form with an easily renewable tread. The Roberts belt is already well-known.

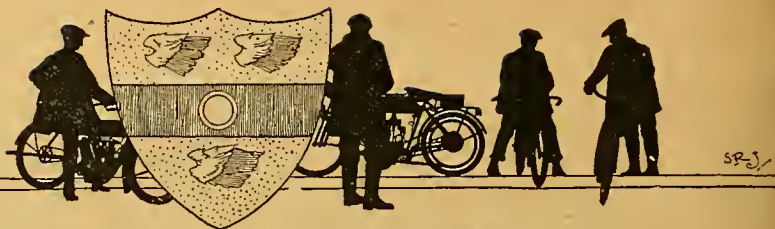


F.R.S.; secretary, Mr. T. W. Loughborough, A.M.I.A.E.

The committee points out that the standard silencer is merely a simple device to give the required standard of silence, and that it need not be copied in any way. We reproduce scale drawings of the silencer referred to by the



# CLUB NEWS



## Oxford M.C.C.

There will be a musical social at Banbury on November 5th. Members will meet at the Martyrs' Memorial at 6.30 p.m.

## Birmingham M.C.C.

Birmingham-Carlisle Open Trial.—L. Mogridge has been awarded a bronze medal for completing the double journey in twenty-five hours.

## Portsmouth and District M.C.

The first whist-drive, arranged by the committee of the Portsmouth and District Motor Club, was held on the 21st inst. at the Mikado, Southsea.

## Chester and District M.C.C.

A successful reliability trial was held on the 12th inst. over the following route: Llangollen, Valle Crucis, Ruthin, Mold, Holywell, and Chester. Results: 1, C. Dean (Triumph); 2, R. Bate (Rudge); 3, W. Price (8 Matchless). The special prize given for the best performance on Valle Crucis Hill was won by J. H. Fox (5 Matchless).

## Wimbledon M.C.C.

A speed-judging and non-stop reliability trial, over a course of twenty-six miles, starting from the Talbot Hotel, Ripley, took the place of the usual weekly run on the 20th inst. Members were started at two-minute intervals for the first round, and they were expected to complete the second round in as nearly as possible the same time as their first, speedometers and watches being barred. Result: 1, R. C. Martin (3½ h.p. Humber), two minutes early; 2, Percy Lyon (Triumph), three minutes early; 3, G. B. Barham (6 h.p. Rex and sidecar), seven minutes late.

## Luton and South Beds. M.C.C.

The results of the speed trials and inter-team trials with the Herts County A.C. (M.C. section), held on Saturday, October 19th, were as follows:

### SPEED TRIALS.

Event I.—Racing in pairs from standing start for any machine. Result:

	Time.
1. Barker (6 Zenith) ... ..	42s.
2. Dunn (3½ Rudge) ... ..	42½s.
3. Smart (3½ Rudge) ... ..	43½s.

Event II.—Passenger class for 3½ h.p. machines. Result:

1. Terry (3½ New Hudson) ... ..	55½s.
2. Child (3½ New Hudson) ... ..	56½s.
3. Sills (3½ Rudge) ... ..	56½s.

### INTER-TEAM TRIALS.

These were won by the Luton and South Beds. M.C.C., who won the lightweight and sidecar classes, and got four men placed out of six in the 3½ h.p. class.

Luton and S.B. M.C.C.      Herts County A.C. (M.C.S.)

CLASS A.	Time.	CLASS A.	Time.
Secs.		Secs.	
Simpson (2½ Singer) ... 42		Cheaney (2½ Humber) ... 42½	
CLASS B.		CLASS B.	
Gutteridge (3½ Rudge) ... 36		Colliver (3½ Zenith) ... 31½	
Smart (3½ Rudge) ... 34½		Walker (2½ Hobart) ... 37	
Dickinson (3½ Rudge) ... 37		Wells (3½ Triumph) ... 36	
Cumberland (3½ Triumph) 35		Howe (3½ Zenith) ... 47½	
Dunn (3½ Rudge) ... 35½		Jarvis (3½ Triumph) ... 38½	
Terry (3½ New Hudson) 40		Nott (—) ... 37½	
CLASS C.		CLASS C.	
Barker (6 Zenith) ... 33		Carter (5 Matchless) ... 30½	
CLASS D.		CLASS D.	
Twigg (6 Enfield) ... 41½		Dudley (6 Zenith) ... 44½	

## Bristol M.C.C.

On Saturday, November 2nd, a special trial for amateurs will be held over a route of about fifty miles for a silver cup, presented by Messrs. Humber, Ltd. It is probable that Weston Lane, near Bath, will have to be ascended.

On November 9th the annual dinner will take place at the Queen's Hotel, Clifton. Prize winners from a distance are invited to be present as the guests of the club, and they should notify the hon. sec., Mr. P. Grout, Warmley, near Bristol.

## Essex M.C.

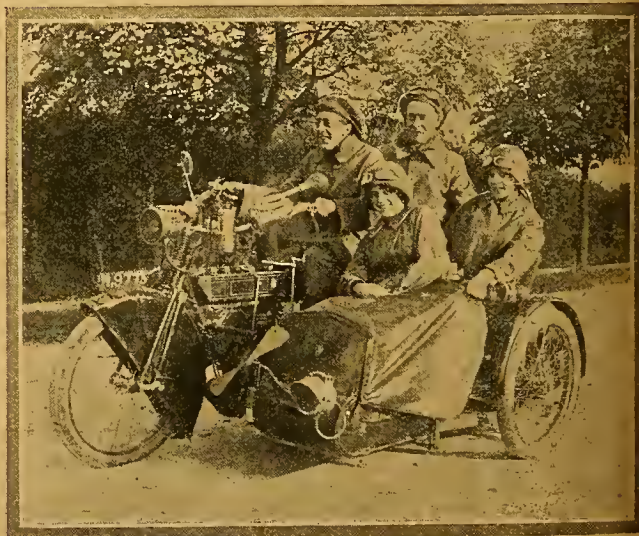
In the recent standard ride to King's Lynn and back, the following qualified for the club silver medal: Dr. Sempey (5 A.J.S. sc.), E. Lewis (8 J.A.P. sc.), A. V. Deacock (6 N.L.G.-J.A.P. sc.), L. G. Brown (8 Rex-Jap sc.), G. T. Gray (3½ Rudge), F. Roberts (3½ Rudge), D. S. Parsons (3½ Corah-Jap), B. W. Wild (3½ Precision), H. Moore (3½ B.S.A.), and S. Tharp (3½ Bradbury). H. C. Bouffier, on his 6 Rex sidette, had very hard luck in puncturing after having covered 185 miles out of the 200.

In the speed-judging competition just held the following awards are made subject to confirmation by the committee: Silver medals—Dr. Sempey (5 A.J.S. sc.), error 1.21s., and B. Alan Hill (3½ Corah-Jap), 1.51s.; bronze medals—S. G. James (6 Enfield-Jap sc.), F. Roberts (3½ Rudge), L. G. Brown (8 Rex-Jap sc.), D. S. Kapadia (8 Rex-Jap sc.), and Miss R. Hammett (2½ Douglas).

On Saturday, October 19th, the closing run, combined with a paperchase, was held, starting from headquarters at 4.30 p.m. The captain acted as hare in his 12 h.p. De Dion car, and gave a most sporting course up hill and down dale, right through the heart of Epping Forest, until he was finally caught by F. Roberts on a 3½ h.p. Rudge.

A paper will be read on December 5th, at 7.30 p.m., at the R.A.C. Associates' Room, Pall Mall, by Mr. Douglas Leechman, on the Motor Cycle Show at Olympia, 1912, to be followed by a discussion. All motor cyclists are heartily invited to attend.

The club dinner will be held at the Great Eastern Hotel on December 14th.



A GOOD LOAD.  
A 6 h.p. N.S.U. and sidecar, belonging to H. C. Sharp, of Eling Common, with a driver and three extra passengers.



**North Birmingham A.C.**

There will be a flexibility hill-climb on November 9th at Hints Hill.

**Doncaster and District A.C.**

A slow half-mile competition was held on the 24th inst. Result: 1, L. Baker ( $3\frac{1}{2}$  Rex); 2, C. Simpson ( $3\frac{1}{2}$  Premier); 3, W. Wagstaffe ( $3\frac{1}{2}$  Premier); 4, W. A. Bassett ( $3\frac{1}{2}$  B.S.A.).

**Stockport and District M.C.C.**

Hill-climb results:

Class 1., Lightweights.—1, W. Heaton ( $2\frac{3}{4}$  A.J.S.); 2, E. Woods ( $2\frac{1}{4}$  Levis).

Class II., Single-cylinder Machines.—1, G. Hall ( $3\frac{1}{2}$  Scale-Jap); 2, H. Thompson ( $3\frac{1}{2}$  Kynoch); 3, E. Abram ( $3\frac{1}{2}$  Matchless).

Class III., Twin-cylinder Machines.—1, F. Sirrett (7 Indian); 2, J. Woodrow (5 Woodrow).

Class IV., Sidecars and Cyclecars.—1, J. Emerson (8 Woodrow); 2, H. Greenhagh (8 Matchless) and J. Cheetham (8 Matchless); 4, E. Woods (10 G.W.K.).

F. Sirrett (7 Indian) made fastest time of the day.

Result of Reliability Trial.—1, H. Marsden ( $2\frac{3}{4}$  Douglas); 2, W. Heaton ( $2\frac{3}{4}$  A.J.S.); 3, H. Greenhagh (8 Matchless).

The chief prize was the Talbot Cup, kindly presented to the club by the owners of the Talbot Garage, Stockport, which was won by H. Marsden on the  $2\frac{3}{4}$  Douglas.

**Western District M.C. (London).**

At a recent committee meeting it was decided to hold the annual dinner and prize distribution at headquarters (Paul's restaurant). The provisional date is November 27th. A musical programme is to be arranged. The president, Mr. E. Cubett Sayers, J.P., has kindly offered to present a prize for competition next season. The runs for this month are to Burnham Beeches (refreshment house), Bagshot (King's Arms), and Wisley Hut, Surrey, which is the last run of the season.

**South Birmingham M.C.C.**

The above club held a reliability trial over a severe course on the 20th inst. The route was as follows: Hall Green, Stratford, Sunrising, Tysoe, Oxhill, Shipston, Ilmington, Chipping Campden, Saintbury, Willersey, Campden, Shipston return journey to Stratford and Red Hill. There were twenty-five entries, and all but two were started by 8.30 a.m. Sunrising, Saintbury, and Willersey Hills proved too much for several competitors, and before the finish seven competitors had retired through various failures. The results are as follows: Best performance of an amateur, J. Huntingto (T.T. Triumph), lost no marks; best performance of a trade rider, J. J. Woodgate (Singer three-speed), lost no marks.

The following competitors made non-stop runs, but were off the course on the homeward journey and were disqualified, but another competition will be held for them and the date announced later: J. Woodhouse ( $4\frac{1}{4}$  Regal sc.), L. Bees (L.M.C.), L. Poole (B.S.A.), A. Edwards (B.S.A.), F. W. Merrick (6 Enfield sc.), and C. Moss (B.S.A.).

## A.C.U. Inter-club Conference at Liverpool.

UNFORTUNATELY the above meeting, which was called to discuss the important question of the amateur, was by no means well attended. The Mersey Club, however, did its duty nobly. Its members turned up in force, and over the mantelpiece in the comfortable room in which the meeting was held in the St. George's Restaurant on Friday last; there was an artistically written card bearing words of welcome to the A.C.U. delegates. Altogether sixteen people attended who represented the A.C.U., the Mersey M.C., the Westmorland and the Oxford M.C.C.'s, the Motor Cycle Union of Ireland, and the Scottish A.C.U. Mr. J. R. Nisbet, who presided, suggested that the first point to be discussed was the grievances of the amateurs, and the second their remedy.

**The Amateurs' Grievances.**

Mr. S. W. Carty, the hon. secretary of the Mersey M.C., in opening the discussion, stated that the grievances of the amateurs could be summed up in the word "shamateur," and against this individual the former had just cause for complaint. The suggested novice class had been no new idea, and the Mersey M.C. had adopted it in a hill-climb. His own idea was to have two classes of amateurs—novice and expert—with a slight difference in entry fees between each, and two trade classes—the professional, or, in other words, the tester, who should be in a class by himself, and the agent—the small local man who found the fees demanded from the trade too heavy.

Mr. Rees, vice-president of the Mersey M.C., after heartily welcoming the A.C.U. delegates, also suggested a reduction in fees for the small agent and increased fees for the manufacturer, and went on to say that he considered that the "shamateur" question could not be solved.

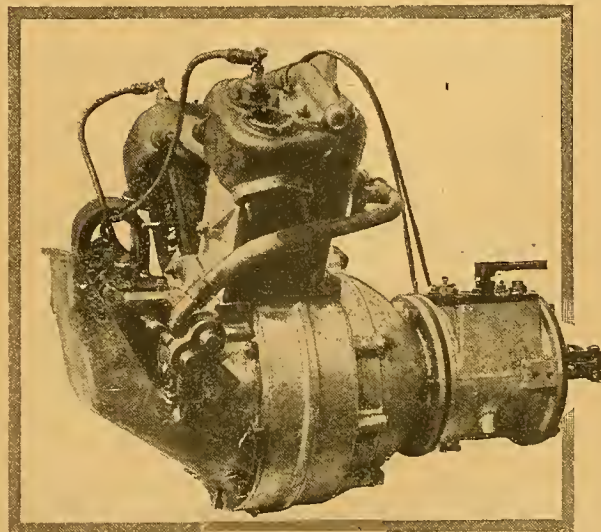
Mr. Campbell McGregor, S.A.C.U., said that Scotland was in a different position, there the real trouble was with the agent, who was assisted by the manufacturer and competed on the same terms as the amateur. He suggested dividing the latter class into tyros who had never won an event, and novices who had never won a speed test or hill-climb.

On being asked by Mr. Greenhill to state the views of the A.C.U. Committee, Mr. Loughborough, secretary A.C.U., dealt with the question in a particularly clear and able manner. The two points to consider, he said, were (1) the degeneration of competitions into purely trade affairs, and (2) "shamateurism." Competitions should be divided into two classes. Those run by the A.C.U. for the improvement of the machines, and those run by clubs, which should be of a purely sporting nature. Any definition of an

amateur was unfair, and it was better to divide competitors, trade or otherwise, into expert and novice classes. The winning of, say, two first prizes, or four second prizes in any consecutive open events in which there were not less than twelve starters in the class entered, should place a rider in the expert class. Permits should be in no way restricted if the expert be barred from certain classes. The arrangement to start at the beginning of 1913.

**The Formal Resolution.**

Finally, on the proposal of Mr. S. W. Philpot, seconded by Mr. Heaton, the following resolution was passed: "This meeting is of the opinion that the scheme, as outlined by the Secretary of the A.C.U., provides a basis for a more satisfactory classification of competition riders, subject to certain modifications, particularly as regards the local agents." The Secretary was instructed to circulate the proposal among the clubs and to ask their opinion on the matter. After the meeting the A.C.U. delegates were entertained to tea by the Mersey Motor Club.



The twin-cylinder V type Crouch engine, complete with gear box, magneto, and water circulation pump.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### The Date of the T.T. Race.

Sir,—I quite agree with your correspondents' views regarding the dates of this year's T.T. races. It has come as a surprise to the majority of North-country motor cyclists, especially Tynesiders, as the race week vacation comes just at the right time, namely, June 21st. I for one will be unable to go, and I am not the only one, as I know several motorists who are sorely disappointed, and fully agree with "Week-ender," who says petition the A.C.U.

FRED H. RYLANCE.

#### An Appeal to Car Drivers.

Sir,—Referring to the letters of "Medicus" and S. Jefford expressing their views on the difficulty of persuading drivers of cars, that motor bicycle drivers (particularly when a sidecar is attached to their machine) have a right to a fair share of the road, I have found that, at the approach of a car, instead of edging to the near side of the road, if one keep on the middle until the last moment, the car driver will invariably make room.

N. H. MACLEAN.

#### Water-proofing the Machine for Winter.

Sir,—I was greatly amused at "Oilskin's" letter re waterproofing machines with vaseline. This method has brought my once happy home very near to disruption. It spoilt quite a number of my wife's dresses. It is at best very antiquated and messy.

A friend of mine at Hendon gave me a few weeks ago a sample tin of a transparent metallic lacquer which they use for protecting the metal parts of aeroplanes. It dried as hard as steel, and the bright plated parts of the machine have not been affected by the damp atmosphere of an outside cycle house. Neither mud nor oil has any appreciable effect on the surface, and the greatest advantage seems to me that it is absolutely part and parcel of the frame, invisible to the human eye. The tin was marked "Dopon," for metal and wood and canvas. Jensen and Nicholson, Ltd." Could you kindly let me know where I could obtain it, as the above firm do not advertise it? REXIFE.  
[The address of Messrs. Jensen and Nicholson, Ltd., is Goswell Works, Stratford, E.—Ed.]

#### Tyre Bursts on Three Wheelers.

Sir,—I read with interest your contributor "Ixion's" remarks on "Tyre Bursts" in the issue of the 17th inst.

I have had considerable experience of burst tyres while travelling at speed on cars and motor cycles, and some experience of the same on cyclecars, and I quite agree with your contributor that in the case of a car there is no real danger. On the other hand, a burst in either tyre of a motor cycle travelling at over 30 m.p.h. is fraught with considerable danger, unless the rider be very expert.

With regard to the three-wheeler, I have driven a Morgan runabout about 3,000 miles and have had two burst tyres—one front and one back. When the front tyre burst I was travelling at about 30 m.p.h., and the effect on the steering was the same as it would be on a car. The back tyre burst whilst practising for the cyclecar race at Brooklands, doing 55 m.p.h. The car swerved a good deal, but at no time was it in the least degree out of control. This experience agreeably surprised me, as I had looked forward with trepidation to a burst in the driving tyre, whereas now I am convinced that a three-wheeled cyclecar is infinitely safer than a motor bicycle and very little different from a car in this respect.

A. W. LAMBERT.

E2S

#### A Rust-proof Machine.

Sir,—Re "Ixion's" remarks on the all-black motor cycle, I fancy that we must have something more substantial than a brittle enamel to keep the parts absolutely safe from rust.

Some years ago, in your columns, I advocated the galvanising process, and for the life of me I cannot see why this should not be adopted. Even the nuts and bolts could be treated and made rust-proof.

I only wish that I could have my 1913 mount completely galvanised. I would not even ask for any enamel to finish the job—only for the tank.

MUDLARK.

#### Amateur Police Traps.

Sir,—Your correspondent, Mr. J. Stuart White, seems to be labouring under a grievance, although I cannot see any justification for the tone of his remarks.

The Manchester District Association of the C.T.C. is endeavouring to put a stop to reckless driving by motorists in that district, and has adopted a simple and peaceable method of doing this.

Evidently Mr. Stuart White advocates the breaking of the law, and, what is more, wants everyone to know it.

The names of those members of the C.T.C. who are going to resign *en bloc* (according to Mr. J. Stuart White) because they are not to be permitted to choose their own speed on the road, should be noted.

CECIL W. COOKE.

[The C.T.C. disclaims official knowledge of the proposed amateur traps. Our correspondent is illogical in his inferences. It does not follow that because a motor cyclist objects to persecution, official or otherwise, he is a law-breaker. We all know how inaccurate timing over short distances is apt to be, and to what injustices it has led.—Ed.]

#### Large Variable Pulleys.

Sir,—I notice in your "Questions and Replies" column last week a suggestion that a wider range of gears could be obtained with a variable pulley gear if a large counter-shaft pulley is used. Though, of course, a lower gear can be obtained by gearing down the pulley the required amount, the range of gear is not increased; on the contrary, the larger the pulley the smaller the range of gear, unless the width of the belt be increased in proportion. For example, suppose a 1in. belt is used with a pulley 5in. diameter outside. With a 28° belt the depth of the V of the pulley is twice the width of the belt, i.e., 2in., so that the diameter of the pulley can be reduced to 1in. inside the belt, i.e., about 2in. to the neutral axis of the belt (taken to be about ½in. from the lower and ½in. from the upper surfaces of the belt). The maximum diameter to the axis of the belt is then 4½in. With an 18in. belt rim this gives gears from 4 to 1 to 9 to 1. But if a 10in. pulley, geared down 2 to 1, is used, the V remains the same depth, since it depends only on the width of the belt and the angle of the V. The inside diameter of the pulley is then 6in., and the extreme diameters to the axis of the belt are 9½in. and 7in., giving gears from 3½ to 1 to 5 1-7 to 1, a much smaller range than before. Of course, these ranges are increased slightly in the case of the Rudge by the use of a variable belt rim; also difficulties of construction make it difficult to get so low a gear as 9 to 1 with the direct drive; but the point is that no increased range is obtained with a larger pulley.

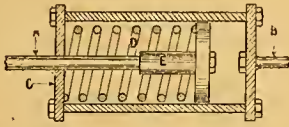
P. A. LEWIS.

[Theoretically our correspondent is quite correct, but what belt will stand a 2in. pulley?—Ed.]



**The Control of Clutches.**

Sir,—The following is a brief account of a new idea in clutch controls: A B is the rod leading from the clutch pedal to the clutch itself. When the pedal is depressed B moves towards the right. This draws the plate C forward, and so compresses the helical spring D, producing a tension in the rod A. This tension tends to press the clutch plates apart. The action then is as follows: When the clutch pedal is depressed the strength of the clutch spring is weakened, and slipping begins. The amount of slip increases as the pedal is further depressed, until finally the plates are separated and a free engine obtained. The amount of slip, therefore, depends on the position of the clutch pedal. This buffer spring can, of course, be placed anywhere on the clutch extracting mechanism, and the strength of the spring can be made adjustable. When the pedal is near the end of its stroke the plate C comes up against the sleeve E.



The idea is protected, and I should be glad to hear through *The Motor Cycle* of anyone anxious to buy the patent.

G.L.M.

**A Warning.**

Sir,—Will you kindly warn fellow motor cyclists through the medium of your paper? One mile on the London side of Brentwood on the main Colchester Road there is a ten-mile limit—about 300 yards long. As I was passing through it recently, I stopped and spoke to a friend of mine, who is a member of the Brentwood Bench. He informed me that he had just come from a meeting of the Bench at which the chief constable of the county had been specially requested to do all in his power to catch motors exceeding the limit on this piece of road, as at present very little attention is paid to the signs. While I was talking to him, several cars and motor cycles came through at about 25 m.p.h. There will certainly be a very strict police trap there shortly.

A. J. USBORNE.

**Cyclecar Design.**

Sir,—I cannot see why there should be all the bickering and agitation regarding the use of the term "cyclecar." After all, the vehicles which come under this name, whether they be water-cooled or air-cooled, shaft, chain, or belt-driven, three or four-wheeled, are not designed for freak performances in competitions, but for the general comfort of those who might be expected to purchase them. Provided their cylinder capacity is of or below the specified limit, does it not rest with their several manufacturers as to whether they consider such and such a refinement conducive to the efficiency of their own particular model?

Surely, a firm which turns out a smart shaft-driven water-cooled cyclecar can be credited with knowing its own mind and also that of the public it caters for just as well as the maker of the vehicle which does not possess these refinements. It is certainly not the place of the latter manufacturer to find it necessary to cavil at the outcome of the former's experience, even though the former may market a runabout £20 or £30 dearer.

CHACUN A SON GOUT.

**The Life of Epicyclic Hubs.**

Sir,—As a practical motor engineer in the trade, and having ridden most of the best makes of motors since their inception, I am perfectly satisfied that a two-speed free engine gear with a variable pulley is sufficient for all requirements.

My present mount is a 3½ h.p. B.S.A., two-speed, free engine model, which has covered over 6,000 miles since I got it in July. When I inform you that I let it out on hire to all classes of riders, you can judge the severe usage it gets from inexperienced riders. Up to date not a single part has been replaced, and on examining the gear I find it absolutely perfect. On two occasions I have been long journeys with two passengers averaging over twelve stones each and myself fifteen stones, and taken Lord Decies Hill, Lasswade, without a falter. This is a long, severe hill, rising about one in eight.

In my opinion, three speeds will cause a lot of trouble even to experienced riders, by the undue racing of the engine, and both agents and manufacturers will suffer through the serious engine complications that will arise.

- I fitted a three-speed hub to a customer's mount only seven weeks ago, and it is already burst up and returned to the makers for repairs. The argument that the extremely low gear is necessary in traffic does not help the cause of three-speeds in the slightest, as I can travel as slowly as I wish on my two-speed. For instance, I attended Musselburgh Races, near Edinburgh, on the 4th inst., and after the last race took two sergeants through all the traffic, obliged to follow in line behind cabs, pulling up, going on, and stopping, without the slightest trouble. With the free engine position I could stand still, leaving the engine running, and by letting the clutch gradually into the low gear I could glide away as slowly as I wished.

I hold no brief for the B.S.A. Co., but my experience with their two-speed gear is that it fulfils all requirements in a really efficient manner, and is absolutely reliable in every respect.

W. HUNTER.

[Other readers, P. Gately and H. Britton, state that they have done 12,000 and 4,000 miles respectively with sidecars on similar gears.—Ed.]

Sir,—"Ixion's" invitation for experiences of two or three-speed epicyclic gears over a prolonged period prompts me to send you mine.

Although I have not used three-speed gears for any length of time, I have for several years had two-speeders in use, and one of these, fitted with the Rex adapted Roe two-speed gear, has been in constant use for the last three years, during which time it has covered a distance of over 35,000 miles. Fully 30,000 of this has been with sidecar attached, and this, in conjunction with the fact that a great proportion of it has been traffic riding, will show that the low gear has been used very considerably.

Throughout all this period the only renewals I had to make to the gear were a pair of expanding arms and pin for holding high gear in (cost 4s. 6d.) and new low gear band brake (cost 12s.) The gear was frequently dismantled, and the gear wheels and pinions were always found to be in perfect condition with practically no sign of wear. These excellent wearing qualities, combined with the ease of manipulation of the Rex-Roc gear, give it a foremost place in my opinion, particularly as later models have been strengthened in the two parts I had to renew. All parts are of ample dimensions, and well up to the work required of them—a fact which hardly applies to some of the three-speed gears on the market—and to this I attribute the satisfactory results shown.

J. A. MASTERS.



A recent convert to the motor cycle, Miss M. A. Greaves, A.L.C.M., and her sister. Miss Greaves is now able to manage her 5 h.p. Vindec sidecar with ease, even in the busy thoroughfares of Leicester.



**Transmission.**

Sir,—I have been greatly interested by "Ixion's" vigorous defence of the belt drive, and by the correspondence which has followed. All seem, however, to have forgotten one point—the great value of the adjustable pulley.

I am rather surprised at some of your correspondents' experiences, as I have ridden in all weathers in a hilly district for two years, and have never had belt slip. My machine is a Triumph, and belt a  $\frac{7}{8}$  in. Dunlop. About twice a week I apply a very little Beltecum, which is most effective.

LITTLE JIMMY.

**Tyre Wear.**

Sir,—I note the letter of R. Haddock in reply to mine on the above subject. He seems to be one of those fortunately happy ones who obtain satisfactory service out of the present type of motor cycle tyre, and is the first I have come across.

I named no firms, nor any special brand of tyres, but may say that my own experience and that of many friends embrace the most noted as well as the less known brands, and all cause grumbles, especially with sidecar.

I maintain that about five hundred miles is the average useful life of special tyres on a combination rear wheel. Having a larger section tyre, say 2 $\frac{1}{2}$  in. or 3 in., which is practically no stronger, is in my opinion no improvement, as it is, if anything, more liable to gashes, bursts, and punctures. A thicker and stronger article is required.

Your contributor, Mr. B. H. Davies, in his recent article on tyres is surely supported in his statements by thousands of sidecar users in the British Isles. He puts 1,000 miles as the general run on a 3 $\frac{1}{2}$  h.p. solo rear wheel, and, as he says, and many know to their sorrow, one gash sounds the knell of your cover. His experience of extra heavy covers, which I have always used, appears to have been rather fortunate, and I strongly agree with him and think that butt-enders should be fitted as standard on all motor cycles.

Earnestly hoping there will be some stouter tyres, more on car lines, on the market next year, for which I predict a plentiful demand,

ROADSIDE SOLUTIONER.

[There are already thick heavy tyres on the market, and some sidecar makers fit them as standard. Sidecarists and purchasers of solo machines who intend occasionally to attach a sidecar should specify thicker rear covers, for which they must pay proportionately.—Ed.]

**Combined Chain and Belt Drive.**

Sir,—There seems to be a difference of opinion between some of your correspondents on the merits of the belt drive. Mr. E. K. Wyatt certainly had bad luck on his holiday with his belt. Others say practically that they have no belt troubles at all. In view of my own experience with belts—nearly 27,000 miles—I am very much inclined to discount these latter statements. My worse case of belt troubles was also on a tour of 450 miles with a sidecar, during which distance I had to adjust the belt either by shortening or closing the front pulley, both of which are adjustments, about six times, besides which it broke twice. The belt had run under 100 miles before the tour, and broke twice more in 120 miles after the tour, when it was discarded—a total of 670 miles. My best belt record is a mileage of 6,600 miles from one belt on a solo machine, with occasional sidecar jaunts. This belt I had to shorten about once in 180 miles. Both these belts were 1 in. rubber. Other belts have lasted between 1,000 and 3,000 miles.

Other readers who have probably had similar experience of belt drive will probably also say why am I not satisfied with belt drive—it is quite satisfactory. It is satisfactory to those who have tried nothing better. Now that the combined drive has come to the fore, with belts lasting up to 8,000 miles according to "Ixion," and only 5,000 according to Dr. Patterson (both on light machines), motor cyclists think they have found the most durable drive. It is a real novelty to have a belt last for all that distance. But what of the adjustments? Certainly they are fewer per 1,000 miles, but they are just as annoying. Before a belt is finally adjusted, there is a period of slip which gradually gets worse and worse until the rider's patience can stand it no longer, and so he adjusts the belt.

The longer he can put up with a slipping belt the fewer will be his adjustments, of course. It is this state of things

that the chain does not possess. It gradually gets slacker and slacker, but it does not slip even in wet weather. The necessity for adjustment is less frequent, and takes no longer than belt adjustments as a rule.

Dr. Patterson mentions that he does not know who I am. Well, I really think it makes no difference to the superiority of the chain drive who I may be! Perhaps I might mention that my experience with chain drive started seven years ago on a 2 $\frac{1}{2}$  h.p. Humber, P. and M. gear, which I rode 17,000 miles on one set of unprotected chains. In this distance I had one road stop due to chains. This was on a very wet day, and the mud ran from the mudguard right on to the back chain, causing very rapid stretching, and finally the chain came off the back wheel. In ten minutes' time I had readjusted the chain and altered the mudguard and was on my way.

About every 1,200 miles I used to adjust the chains. I had a Scott and had no trouble with the chains. I now ride a 6 h.p. Enfield with sidecar. To date I have ridden this 2,200 miles without chain trouble and only one chain adjustment at 1,600 miles. During the recent very wet weather I rode 1,062 miles in eight days of the wettest, and the chains never grumbled in the least.

I think Dr. Patterson is rather afraid of chains if he discards his chain after 5,000 miles just because they have stretched a little. They should run three times that distance on a Douglas without any trouble. The question of the slipping clutch I hope to be allowed to touch on in another letter.

THOMAS F. MAW.

**SUMMARY OF CORRESPONDENCE.**

Traveller writes: "A cyclecar weighing 4 cwt. with 5 h.p. twin engine, foot-operated clutch, two speeds, chain to counter-shaft, and two one inch belts from counter-shaft to driving wheels, can surely be sold for about £60. When will manufacturers ignore the speedman and cater for the thousands who want a machine like the above?"

"Godalming Motor Cyclist" referring to our reply to "E.M.N." advising a route through Munstead Heath and Peasmarsh to avoid Godalming says: "It is only motorists who exceed speeds between 14 $\frac{1}{2}$  and 18 m.p.h. who are summoned in connection with the Godalming speed limits."



IN PRAISE OF A LIGHTWEIGHT.

A well known surveyor and estate agent Mr. Robert R. Procktor, of Catford, on his Motosacoche; his machine is a 1909 model which has been in constant use since delivery and no trouble has been experienced with it otherwise than ordinary wear and tear. The nature of the rider's profession very often takes him far afield—and it is then that the motor cycle is invaluable. Frequent long journeys are undertaken to make surveys. In one week the machine compassed five non-stop runs to Southend-on-Sea.



# JUL ROVER

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Report

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# Question & Replie

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

## Aldershot to Holyhead.

Please give me your advice as to the best route to follow from Aldershot to Holyhead, so as to avoid large towns and bad hills, travelling on a  $3\frac{1}{2}$  h.p. New Hudson and sidecar; no passenger in sidecar, but carrying small amount of luggage.—R.W.V.K.

Your best route would be as follows: Aldershot, Odiham, Hook, Bath Road, Streatley, Wallingford, Oxford, Woodstock, Shipston-on-Stour, Stratford-on-Avon, Alcester, Headless Cross, Broms-grove, Kidderminster, Bridgnorth, Shrewsbury, Llangollen, Corwen, Pentre-Voelas, Bettws-y-Coed, Bangor, to Holyhead.

## Petrol Consumption.

I would like to ask a question relating to consumption of petrol in a 1912  $3\frac{1}{2}$  h.p. Precision engine and B. and B. carburetter. I get at present 70 m.p.g. with sidecar, and liquid petrol jumps out of the handle-bar controlled air inlet. If I fit a tube about 4in. long to this inlet, will I benefit therefrom in power and consumption?—G.W.T.

Perhaps the level of your petrol is a little too high in your jet. This would account for the high consumption and blowing back of petrol. Another cause may be too weak an inlet valve spring. If you fit a long tube to the inlet pipe you may get slightly increased efficiency.



## Choked Jet.

Quite recently I purchased a new 1912 Scott. I believe something is wrong with the carburetter, and would like to lay before you the following facts, and trust you will be good enough to answer them: The engine runs at speed perfectly, but with the throttle not more than one-third open, and the air lever in every conceivable position, I feel continual snatches on the chains, which, I conclude, are due to misfires. The action of closing the throttle lever has the effect of violently accelerating the machine for some twenty yards, unless the air lever is far advanced.—NOVICE.

We should say that the trouble is probably due to a partial obstruction in the carburetter jet. When using the Scott on which we followed the Six Days' Trials last year, the same symptoms occurred, and it was found that the jet was partially obstructed by grit, and when cleaned out the engine ran perfectly. You might inspect the transfer gauzes.

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects

## Exhaust Whistle.

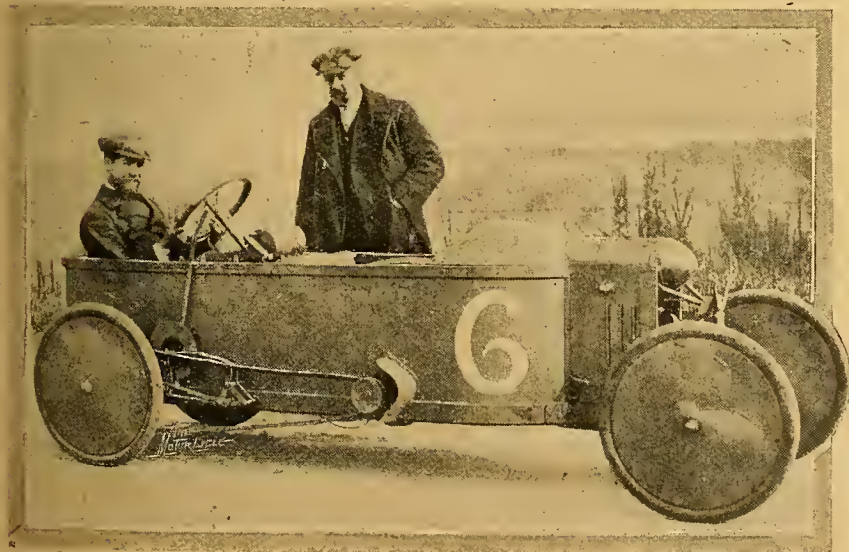
I should be obliged if you would inform me (1) if an exhaust whistle harms the engine in any way, carbonises it, or causes any loss of power. My machine is a  $3\frac{1}{2}$  h.p. model. (2.) If a piece of wire or a chain stretched across the tyre to catch thorns, etc., is bad for the tyre, or wears it out before its time.—D.S.

An exhaust whistle will not harm the engine in any way. Of course, it sets up a little back pressure when the whistle is actually being blown, and carbon eventually forms inside the whistle, but it will not carbonise the engine. No, a piece of wire just clearing the cover to catch the thorns, etc., is quite good.

## Reliability Trials.

As a constant reader of your valuable paper and a club member, I would thank you if you would kindly give me your opinion on the following reliability trial held recently. Entries are accepted from thirty-three club members. Twenty-four competitors start on a reliability trial from headquarters at 2 p.m. (one minute intervals), the last competitor leaving at 2.32 p.m., to a point fifty-two miles away and back. A control of one and a half hours is made at the aforesaid point, all competitors leaving to schedule time. On the way fog is encountered; two or three competitors meet with accidents. The first man checked in at headquarters fourteen minutes late, some eight or nine others completing the course within the hour late. Do you think the committee would be acting up to general club principles to declare the competition void on account of the fog? Further, if a secret checker wait the time appointed after the last man is due at his check, and having checked some eight or nine competitors, should the check stand in defining the winners? Also what is the general custom in penalising a competitor who passes through after the check has ceased working?—C.B.

We should say that, under the circumstances, it would be right to render the competition void on account of the fog. If the checker wait until the maximum time has expired for the last man, the check should naturally stand. Anybody arriving after time, of course, cannot qualify for an award. In the case of fogs, floods, etc., either special allowances must be made or the competition should be rendered void. A competitor who passes through after the check has ceased working usually loses the maximum number of marks for that section.



A BROOKLANDS BEDELIA.

Mr. Robt. Bourbeau on the racing Bedelia with disc wheels, with which he finished second in the last cyclecar race at Brooklands. Mr L. N. Palmer, the British agent for Bedelias, is standing beside the vehicle.



## Starting a Sidecar.

My 1912 T.T. roadster Triumph Montgomery sidecar I am able to start with passenger seated on the level and jump into saddle, and now I am thinking of ordering a 1913 Rex-Jap 6 h.p. standard twin. Do you think I shall be able to start this with Canoelet sidecar in the same manner, or will the weight be too heavy? I do not want to go to the expense of a free-engine and two speeds. Do you consider that the machine will give me satisfaction and climb hills of 1 in 5 with sidecar and passenger, geared 4½ to 1, my weight thirteen stones?—V.B.

No, you will not be able to start this machine on any gradient with a passenger and sidecar, and we should advise you to invest in a similar model with change-speed gear. The machine should be satisfactory, but it would hardly climb 1 in 5 singly geared.

## 3½ h.p. Sidecar in India.

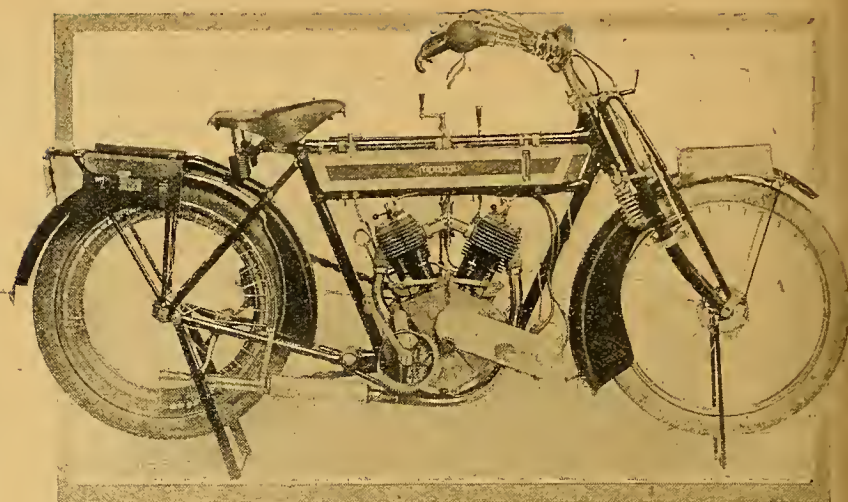
My machine is a 3½ h.p. 1912 Triumph with free engine. I intend to take it out next month to a part of India where the country, for hundreds of miles round, is dead flat. The roads are good, there is no speed limit, and no traffic riding. (1.) Can you please tell me if you think that the use of a sidecar, with passenger up to twelve stones, would strain the engine, etc.? (2.) Supposing that you consider the engine would suffer from this, what parts exactly would be affected? (3.) Would the life of the engine be appreciably shorter than if the machine were used only without sidecar?—S.D.V.

(1.) The machine would take a sidecar satisfactorily under such conditions. (2.) If the machine is driven carefully, it should not damage it in the slightest degree, but you must be careful not to over drive it. Possibly the hot climate in which you reside, combined with use of sidecar, will increase the risk of overheating, and the combination would shorten the life of the engine.

## Weight of Piston.

Not long ago I broke my piston. I ride a 3½ h.p. 1910 Triumph. A local firm here (India) cast me another, and as far as I can see it works very well indeed. I have, however, managed to secure a Triumph piston, and find that the one made for me by the local firm is slightly heavier than the Triumph. Is there any harm in this? Of course a light piston means more speed. Is there any harm in using the heavier piston besides a small diminution in speed? I did a run of ninety-five miles recently with the heavier piston and never had any trouble, the engine being surprisingly cool at the end of the journey. I should deem it a favour if you would kindly give me your advice on this point.—R.P.

Yes, we should advise you to use the Triumph piston, as this is lighter, and the lighter piston gives greater speed. We do not know that there is any actual harm in the heavier piston, beyond the fact that it must upset the balance slightly, and thus strain the bearings.



1913 model twin-cylinder Clyde-Jap with kick starter and N.S.U. two-speed gear.

## Bad Knock in New Engine.

I have a new 2½ h.p. machine on which I have covered about 350 miles. From about 10 to 20 m.p.h. there is a clanking noise in the engine, giving a metallic ring. If the pulley is rocked sharply to and fro I can feel a knock; in fact, it can be felt by holding almost any part of the machine as well as being audible. It occurs in all positions of the piston, and is unaffected by the positions of the cams. It is more pronounced with the compression cock shut. The engine is the product of a well-known firm, and, on consulting them, they say that it is a cylinder knock caused by the piston rocking about the gudgeon pin. They say that they make their pistons a slack fit and rely on the rings entirely for compression. The clearance between piston and cylinder must be of generous proportions to give such a knock, and I should think conducive to rapid wear. Is it bad workmanship?—W.B.S.

We should say that the cause of the knock is either bad design or some mechanical defect. The engine should be taken down and put right by the firm, so that there is no knock noticeable.

## Runs Badly on Top Speed.

Under the proposed new rate of taxation: (1.) Would a 3½ Triumph be liable to an increased tax? Will a sidecar be taxed no matter what the power of engine may be? (2.) My 3½ will fire freely on 8 to 1 gear, but seems to have not much power on 4½ to 1, and will often choke and stop on the slightest gradient. I have cleaned out everything and had magneto thoroughly overhauled by maker. My tank has had a bruise near oil partition. Would oil getting through cause this bad running on top gear? Sometimes engine runs well on top gear, but always runs well on low gear.—H.M.

(1.) The proposed tax will not affect single-cylinders up to 89 mm. bore with or without sidecar. (2.) Oil leaking into petrol tank would very likely cause the trouble you mention, if it occurred on both speeds. It would alter the float

chamber level, decrease the efficiency of the mixture, and possibly soot the plug temporarily. We should, however, advise you to check petrol level and look to the compression.

## EXPERIENCES WANTED.

"C.E.H." (London).—Binks two-jet or any other carburettor which improves hill-climbing of 1912 four-cylinder two-speed F.N.

"W.J.D." (Dumfries).—Two-speed and free engine Bradbury and James motor cycles, solo and sidecar, as to reliability, hill-climbing, and petrol consumption.

"J.J.B." (Bayswater).—2½ h.p. Levis touring model, especially as regards cooling and petrol consumption.

"P.J.D." (Ilford).—Kerry-Abingdon two-speed gear control.

"P.C." (Norwich).—Levis motor cycles, particularly lady's model.

"A.L." (Bradford).—Twin Zenith and sidecar. Belt wear in hilly country, speed and petrol consumption.

"W.M.M." (Carlisle).—Brampton variable gear.

"J.C.E." (Newton-le-Willows).—Turner's sidecar, comfort and power for haulage. 8 h.p. water-cooled Williamson, and 3½ h.p. water-cooled Green-Precision.

"A.W.G.M." (Amersham).—6 h.p. 1912 Speed King Rex, hill-climbing, speed, and reliability.

"A. Barnes." (Wellingborough).—1910 Standard Triumph fitted with Mabon variable, Bowden two-speed, or any other change-speed gear for sidecar.

"L.H.C." (Streatham).—1912 model K Douglas, particularly as regards slow running.

## "The Motor Cycle" Photographs.

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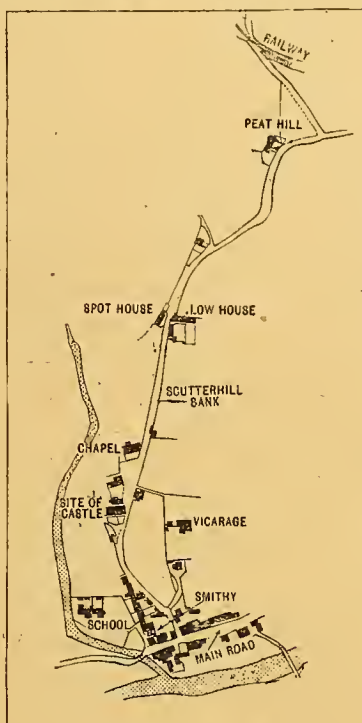
## Three Precipitous Northern Test Hills.

By B. H. DAVIES.

EVERY year when I ride north for the Scottish Trials some sporting friends of mine in County Durham are prepared with two or three "unclimbable" hills. They have yet to find one I cannot get up, but this year they unearthed two magnificent test climbs, worse than anything on the Scottish 1,000 miles so far as gradient goes, and I failed four times on one of them before getting up, and at the fifth time of asking I had to trail my feet to keep upright. Messrs. Rutter Bros. at the smithy in Langley Park, five miles out of Durham on the Lanchester Road, will direct any interested riders to the hills, if the directions given below are insufficient.

### Holmside Hill.

Holmside Hill is distinctly the more severe of the two. I made the first solo ascent of it at the fifth attempt, and I believe it has yet to be climbed by a sidecar. It is reached by going to Witton Gilbert (five miles out of Durham on the Lanchester Road), and at the west end of the village take the road to Acron Close; at the first fork avoid the road through a gate, which goes to Burnhope, and proceed straight on down Holmside Hill. The hill is a mile long, and very rough, but the upper stretches are negligible. The gradient and the surface and the fierce corners are at the bottom. I will not attempt to estimate the gradient, for the real difficulty consists rather in sur-



How to reach Peat Hill.

face and corners. I was riding a Triumph (three-speed Armstrong), and for the first 200 yards the machine and myself were oftener in the air than on the ground. I failed once owing to belt slip, and three times owing to my thigh knocking the gear lever out of its notch. The fifth time I bounced up somehow. So far as I know, no motor of any sort has ever got up before; a car once came down, and nearly demolished the house at the bottom.

### Peat Hill, Westgate-in-Weardale.

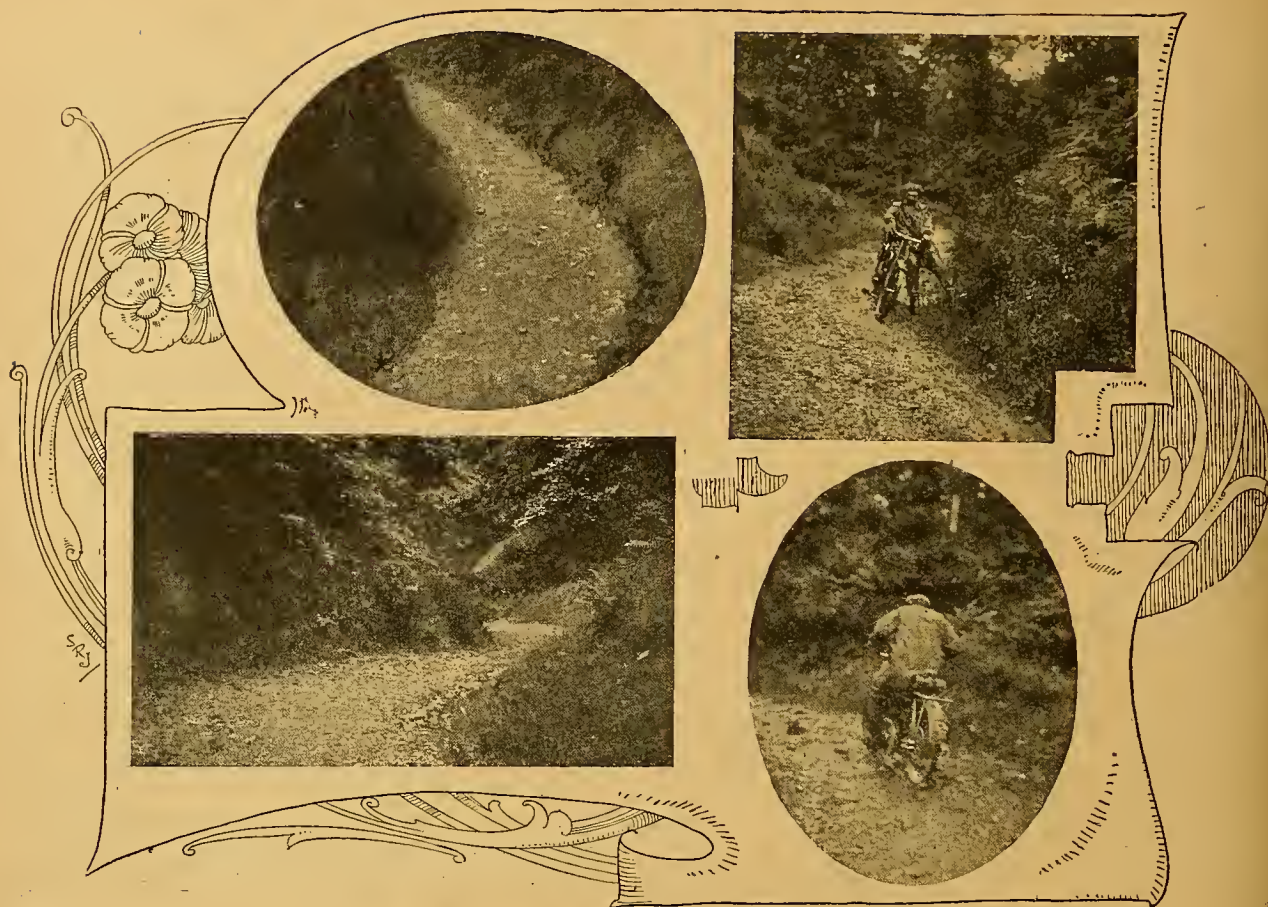
Peat Hill turns at right angles out of the village of Westgate, twenty-seven miles from Durham on the Durham-Alston road, and is an ideal test hill, having excellent surface, and no bad bends until most of the gradient is surmounted. I never venture to make precise statements about the grade of unsurveyed climbs, but local riders are confident that it contains 200 yards of 1 in 3 and a fraction; while I think this is a slight exaggeration, I admit it is a perfect gradient test. The natives say one Triumph had gone up prior to our visit. I climbed it at the first

attempt with my Armstrong Triumph, but my three companions, riding two-speeded P. and M. machines

(1) J. W. Rutter, with passenger, on the second corner of Peat Hill, Westgate. (2) The steepest portion of the hill, gradient 1 in 3.

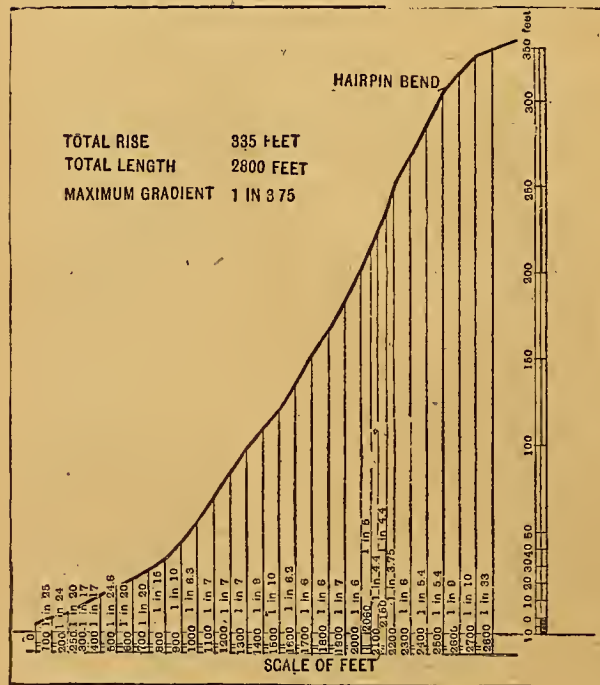






#### VIEWS OF HOLMSIDE HILL—A DURHAM COUNTY ACCLIVITY.

- (1) Showing top bend, gradient 1 in 3½. Note the surface of hill. (2) Bird's-eye view of hill showing the bends. (3) J. W. Rutter coming down hill without brakes. (4) Rutter stops on the top corner.



CONTOUR SECTION OF PEAT HILL.

and a two-speed N.S.U., all stuck low down. Since my visit Mr. J. W. Rutter has made the first sidecar ascent with a two-speeded 1912 Clyno, carrying 24 st. He was successful at the third attempt, after inserting larger jets in his Binks carburetter. The photographs do not convey a correct idea of the steepness of this hill.

#### Softley Bank for Corner Practice.

Riders desiring some hairpin practice should enquire in Stanhope for a very pretty little hill named Softley Bank, close to the village (five miles nearer Durham on this same road), which includes five Amulree corners in half a mile, plenty of single figure gradient, and a decent surface, composed of small stones which entail no bouncing, but induce an inclination to dry skids at the bends. Any machine which can make sure of these three climbs is in good order.

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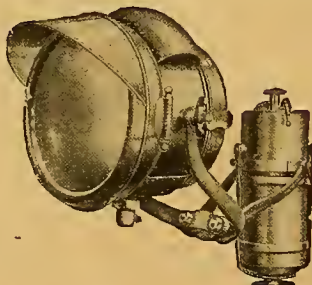
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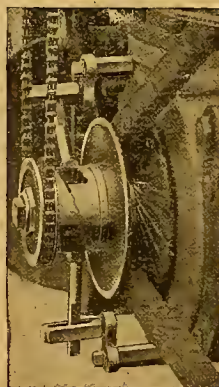
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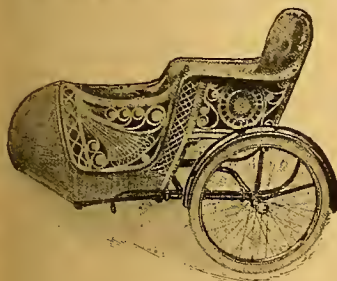
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All Coronet sidecars are fitted with these joints, enabling sidecar to be attached or detached in one minute.  
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SOLE Manchester Agent for the great Douglas and Williamson machines, Gourlay, Fallowfield, Manchester. [X9763]

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OFFERS Wanted for the following new and 2nd-hand machines:

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MULTI Rudge; list £60.

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NEW Hudson, 3½ h.p., 3-speed, J.A.P. engine; £59/17.

THE Latest 1913 Model Williamson-Douglas, 8 h.p., water-cooled, 2-speed gear, chain drive, and special Canoelet sidecar, built to suit same, with luggage carrier, wind screen, apron, and other special fittings, the finest combination ever made; list price £98.

NO Reasonable Offer Refused.

WE Have Several 2nd-hand 1912 Ridges, Douglas (ladies and gents), 1911 Ridges, J.A.P.'s, etc., Triumphs, Rexes, Lincoln Elks, N.S.U., etc., etc., all up-to-date mag. machines.

WRITE, call, or 'phone 488 at once if you require a machine at your own price.

HEBDEN'S Motor Mart, Burnley. [0171]

BAT, 1912, 7-8 h.p., 2-speed, kick starter, etc., demonstration machine, little used; £62.

BAT, 1911, 7-8 h.p., P. and M. 2-speed; £42.

A.J.S., 2½ h.p., 1912, 2-speed, not done 300 miles; £38.

L. F. HARVEY and Co., 227, Deansgate, Manchester. [7517]

SCOTT, 1912, Jaly, condition almost as new, Palmers; £47/10.—Timberlake, Wigan. [X9838]

STOCK of Shop-soiled Motor Cycles, consisting Rudge, Rover, Humphers, New Hudsons, Enfield light weights, etc., etc., to be cleared; offers invited.—Timberlake, Wigan. [X9840]

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1912 New Hudson, 3-speed gear, 3½ h.p., only been 50 miles, as new; reason for this sacrifice is customer has bought a car; will accept £52.—Ewbank and Co., Aire St., Castleford. [7046]

3½ h.p. Rover, late 1911, free engine model, perfect order; £35, bargain.—Dyson, Church St., Barrow. [X9935]

2 h.p. Hummer, new Aug., 1912; £28.—Dyson, Church St., Barrow. [X9936]

BARGAIN.—2 h.p. 1911 Singer, splendid condition; 22 gas.—Particulars, Vaulkhard, Arcade, Lancaster. [7388]

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We specialize in these and can make the best allowance for your machine. We can give quick delivery. We can supply the 3½ h.p. model fitted with the countershaft 2-speed gear, or Armstrong latest 3-speed, enabling engine to be started while machine is at rest on the ground.

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3½ h.p. REX, 1908, spring forks, mageto ..	£16 10

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3½ h.p. N.S.U., 1908, M.O.V., magneto ..	£13 10
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1912 RUDGE, 3½ h.p., Multi gear	£55
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HUMBER, 1912, 3½ h.p., 2-speeds, condition as new	£44
F.N., 1911, 5-6 h.p. model, free engine, just as new	£35
REX, 3½ h.p., 1905 model, very good order	£11
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RUDGE, 3½ h.p., 1912, clutch model, only used for trials	£46
MOTOSACOCHE, 2 h.p. motor, mag. free eng.	£15
HUMBER, 3½ h.p., 1910 model, 2-speeds, magneto	£32
REX, 6 h.p., 1911, de luxe, brand new, List price 60 gns	£54
REX, 6 h.p. 1912 sidette, only done 500 miles, and as new. Bargain	£56
A.C., Sociable, 1912 de luxe model, hood, screen. All lamps. Like new	£85
INDIAN, 7/8 h.p. 1911, 2-speeds, and 8/8 o sidcar	£60
ENFIELD, 1912, 2½ h.p., 2-speed twin	£38
REX, 6 h.p., 1912, sidette, complete, a bargain	£52
ARIEL, 2½ h.p., handlebar control, 26in. wheels	£12
A.J.S., 2½ h.p., twin, just been overhauled and re-enamelled	£24
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MILLFORD, castor wheel, fits Rex	£4 0 0
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HUMBER, 1912, 3½ h.p., free engine, 2-speed, Whittle, newly overhauled; £41.-12, Ayondale Place, Halifax. [X9315]

1912 Enfield, 2-speed, 2½ h.p. lightweight, new Aug. with sidcar; £38.-126, Stockport Rd., Leyburn, Hullma. [X9810]

1911 Free Engine Triumph; urgent sale; nearest £36, bargain.—Tomlinson, Welcome Hotel Marton, Blackpool. [7440]

3½ h.p. Free Engine Rover, run 800 miles, in splendid condition, 1912 machine; £45.—Bainforth, Ormskirk. [X9713]

RUDGE Multi, delivered August, absolutely new; price for quick sale £52.—West Yorkshire Garage, Settle. [X9749]

1912 Rudge, standard, bought September, done 500 miles, like new; £38.—Clarkson, 5, Savile Terrace, Halifax. [X9751]

PRESTON.—1912 Scott, £62/10; 1912 6 h.p. Enfield and sidcar, not done 2,000 miles, £75; exchanges entertained.

PRESTON.—1911 Bradbury and sidcar, £29/10; 1911 Rudge, £31; 1912 3½ h.p. Singer, practically new, £37; many others, all at bargain prices.—The Motor Cycle House, 82, Fishergate, Preston. [X9823]

SINGER, 3½ h.p., 1912 model, Armstrong 3-speed gear; list price £58/15; shop-soiled, equal to new; accept £50.—Below.

SINGER, 3½ h.p., free engine, 1912, in perfect condition, Lucas lamp, horn, watch, Reflex light, £45, or nearest offer; also 3½ h.p. Premier, in splendid running order; £27.—Timms and Co., Stafford St., Barrow-in-Furness. [7319]

HUMBER, early 1910, 2 speeds, and free engine; £25 cash; exchange or deferred terms arranged.—Hitchen's, Morecambe. [7274]

KERRY, B. and B. carburettor, running order, footboards, mag. ignition; £10 cash; exchange, or deferred terms arranged.—Hitchen's, Morecambe. [7275]

N.S.U., mag. ignition, h.b.c. carburettor, running order; £10 cash; exchange, or deferred terms arranged.—Hitchen's, Morecambe. [7276]

MOTOSACOCHE, in want of overhaul, mag. ignition, Whittle belt, spring forks; £8; no swaps or deferred.—Hitchen's, Morecambe. [7277]

INDIAN, 1912, new 7 h.p., 2-speed; listed £75, £70 cash will purchase; exchange, or deferred terms arranged.—Hitchen's, Morecambe. [7279]

PHOENIX and Moores, Colonial models, £65; ordinary models £60 cash; exchange or deferred terms arranged.—Hitchen's, Morecambe. [7280]

DOUGLAS, Model K, listed £50, will clear a few at £45; the same allowance off J's; no swaps or deferred at these prices.—Hitchen's, Morecambe. [7281]

SCOTT, 1912, just come in; £65 cash; exchange or deferred terms arranged.—Hitchen's, Morecambe. [7282]

A FEW Accumulator Machines at prices about £5; write for particulars. All the thirty-five bob motor cycles are sold, please note.—Hitchen's, Morecambe. [7282]

HALIFAX.—1912 Rex models from stock; offers wanted for cash, exchange, or easy payments.—Motor Exchange, Westgate, Halifax. [7521]

HALIFAX.—1912 Rexes at very special allowances; 1908 Rexes urgently wanted.—Motor Exchange, Westgate, Halifax. [7522]

1912 New Hudson, 3-speed and free, not done 200 miles, no time to ride; £35.-73, Granville Rd., Grangetown, York. [X27]

TRIUMPH, 1912, standard, new Palmer back, new condition, horn, spares, guaranteed; 35 gns.—Leech, Wallgate, Wigan. [X9826]

1906 Twin Rex, 5 h.p., tyres and engine fine condition, 1912 carburettor; £10.—Riley, c/o Stevens, Wellington Rd Dewsbury. [X9724]

1912 New Hudson, 2½ h.p., 3-speed, free engine, new in August, not soiled; £42.—W. Bragg, 61, Crofton St., Moss Side, Manchester. [7253]

RED Indian, 5 h.p., 1910 twin, not ridden 4,000 miles, in excellent condition, many spares, horn, etc.; £28.—Openshaw, Brooklands, Bury. [X9745]

BRADBURY, 2-speed, free engine, spare inner tube, and all tools, condition as new; bargain, £38.—Clymer, 98, King St., Manchester. [X9929]

DOUGLAS, late 1911, 2-speed gear, new Avon tyres, horn, etc., running perfectly, deliver 50 miles; £29/10.—Bowling, Sefton Av., Leeds. [X28]

BRADBURY, 1912, 3½ h.p., Sturme 3-speed, splendid order, £51/10; with luxurious cane sidcar, £59/15.—327, Skiroat Green Rd., Halifax. [7524]

3½ h.p. rover, B. and B., h.b.c., newly enamelled and plated, new belt, horn, lamp, capital order; £10, or offers.—Richards, 125 High St., Bolton. [7498]

DOUGLAS, December, 1911, 2-speed, free engine, new back tyre, perfect condition, complete with accessories; £32.—Turner, Finchwood, Leigh, Lancs. [X9761]

B.S.A., 1912, 3½ h.p., F.E., Cowey, lamp, accessories, etc., perfect, little used; cost £65; reasonable offer, wanted.—Smith, Thornleigh, Greenmount, Bury. [X9739]

## THE PORTLAND SIDCAR

### AGENTS NOTE.

We are during the coming Season granting **SOLE DISTRICT AGENTS** for the 1913 "Portland Sidcar." We allow agents profitable margin and "Protect rigidly his district." We not get into touch with us. We can make you money.



### MODEL "DE LUXE No. 4."

A closed model introduced to meet the demand for a closed car at a nominal price. In wicker.

£7 17s. 6d.

#### OTHER MODELS:

£6 6 0	£7 7 0
£8 8 0	£9 9 0
£11 11 0	£12 12 0

SEND FOR LIST.

## 1913.

### Book your orders NOW.

So great has been the rush on one popular type of motor cycle that we have already sold one-third of our output for 1913.

Why not book early, £2 0 0 deposit secures

### ANY MACHINE. ANY DELIVERY:

or, why not let us have your present machine (it is worth more to-day than 6 months hence) as deposit, and reserve for you any specified date for delivery.

### SPECIALITIES:

1913 MATCHLESS.	
1913 REX SIDETTES.	
1913 SCOTTS.	
1913 DOUGLAS.	
1913 NEW HUDSONS.	
1913 ENFIELDS.	
1913 RUDGES.	

THINK IT OVER.

## MAUDES MOTOR MART. 136 GREAT PORTLAND STREET. LONDON W.

Telephone 552, Mayfair  
Telegrams "Abdicate" London

(LISTS POST FREE)



The Halifax Motor Exchange

Largest Rex Dealers,  
16, WESTGATE, HALIFAX.

'Phone: 766. Telegrams: "Perfection."

Until the demand is satisfied we are prepared to offer unprecedented allowance for ALL TYPES of second-hand machines in part payment for these:

NEW REX BARGAINS.  
FROM STOCK.

Maker's Price. Our Price.		
1911-12 3½ h.p. 2-sp. de Luxe	£59 17	46 guineas.
1911-12 5 h.p. 2-sp. Twin de Luxe, special price	51 Gns	
1912 2½ h.p. 2-speed Rex Junior de Luxe	..	£45 0
1912 4 h.p. Tourist, 8½ bore x 95 stroke	..	£46 0
1912 4 h.p. Rex Speed King	..	£46 0
1912 4 h.p. 2-speed de Luxe, handle starting	..	£56 0
1912 6 h.p. 2-speed Twin de Luxe	..	£62 10
1912 6 h.p. Twin de Luxe, chain drive	..	£70 0
1912 6 h.p. 2-speed Sidette de Luxe	..	£75 0

Offers wanted.  
SOLD UNDER MAKER'S GUARANTEE.

SECOND-HAND REXES.

REX, 1912, 4 h.p., Tourist, nearly new	£36 10
REX, 1912, 2-speed, Junior, 100 miles	£29 10
REX, 5 h.p., Tourist, magneto and sidecar	£25 10
REX, 1912, Twin, 2-speed, de Luxe	£49 10
REX, 5½ h.p., Twin, spring forks	£15 10
REX, 1912, 4 h.p., Tourist, done 200 miles	£38 10
REX, 3½ h.p., magneto, 1909	£22 10
REX, 3½ h.p., magneto, spring forks	£19 19
REX, 2½ h.p., magneto, lightweight, h.b. con.	£16 10
REX, 1911, 5 h.p., 2-speed, Rex de Luxe	£38 10
REX, 5½ h.p., free engine, h.b. control	£18 10
REX, 3½ h.p., light and low, h.b. control	£14 10

EASY PAYMENTS QUOTED AT KEEN RATES.

MISCELLANEOUS MACHINES.

PRECISION (Ivy), Druids	£32 10
1910, 6 h.p. 2 speed N.S.U. & CHATER-LEA, sidecar	£38 10
TRIUMPH, 1910, clutch, splendid	£35 0
ROVER, 1911, clutch model; cost £55	£39 10
BRADBURY, 1912, 2-speed	£44 10
ROC, 4 h.p., 2 speeds, handle starting	£23 10
ROYAL ENFIELD, twin, lightweight, mag.	£19 10
ANTOINE, 6 h.p., magneto, Saxon forks	£21 10
ROC, 5 h.p., 2-speed, handle starting	£26 10
4½ h.p. twin MINERVA, h.b.c., spring forks	£16 10
GLOBE, 3½ h.p., h.b. control, cash bargain	£5 19
EXCELSIOR, 3½ h.p., cash bargain	£5 19
2-speed HUMBER Tricar	£13 10
2-speed Magneto PHOENIX Tricar	£15 10

Easy Payments quoted on any machine.

1912 SIDECARS.

Illustrated List on application.

"Exchange," with Continental tyre	£5 5
"De Luxe," with best tyre, aaron, footpat	£6 6
"De Luxe," with reversible child's seat	£7 7
"De Luxe," with best coach-built body	£7 12
Improved quick-detachable joints, cranked extra strong back axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexas, Triumphs, N.S.U.'s, Indians, and any other make.	

Discount to trade. Exchanges entertained.

SUNDRIES.

1912 Armstrong 3-speed Gear, new and complete	£5 19 6
Lycett's Large Size Motor Saddle, new	9 6
New 800ft. F.R.S. Lamp, grid generator	35/-
Phoenix Forecar, less tyres	17/3
Wicker Sidecar Body	10/-
1912 Bradbury 2-speed Gear, NEW	£7 0
26 x 2 new Avon non-skid Covers, Druid model	17/6
26 x 2 new 3 Spire Covers, 15/6; 26 x 2½, 19/6	
24 x 2½ Clipper Covers, 10/6; Tubes	5/9
12 12s. Montgomery Sidecar, almost new	£6 6
Myers' Motor Cycle Stand	3/3
Miller's 20-amp. Accumulators, NEW	11/9

MOTOR BICYCLES FOR SALE.

CLYNO, 1911, 6h.p., fitted with 1912 gear, in perfect order, all complete, and including best Milford sidecar, many extras; £45.—Eric S. Myers Bradford. [X9816]  
CLYNO, 1912, 6h.p., with coach-built sidecar, hardly been used, as new; to clear £55 the lot, great bargain.—Eric S. Myers, 52 and 62, Manningham Lane, Bradford. [X9817]  
POWERFUL 5-6h.p. Dot-Jap, Whittle belt, new tyres, plating and enamel perfect; trial; £26.—Anderson, 846, Chester Rd., Stretford, Manchester. [X9894]  
SCOTT, Nov. 1911, just overhauled, complete with torpedo engine sidecar, trip speedometer, spare tanks, etc.; no reasonable offer refused.—Simpson, Wynd, Bedale. [X9328]  
TRIUMPH, 1910 engine, mag., carburetter, tyres, tubes, and belt almost new, full spares; exchange lightweight, or small car; sell £25.—W. T. Powell, Bedale. [X9329]

BARGAIN of the Week.—3h.p. N.S.U., mag., Amac, h.b.c., Whittle, low, fast, powerful, excellent condition, except back tyre: must sell. £9.—Cowsill, photographer, Chorley. [7503]  
1912 8h.p. Bat, only ridden 1,800 miles, with Bat 2-speed gear, foot starter, Jones speedometer, Lucas lamp and generator, spares, as new; £62.—Openshaw, Brooklands, Bury. [X9746]  
1912 Free Engine Triumph, run 1,000 miles, £47/10; 1911 free engine Triumph, run 4,000 miles, £43; both in splendid condition.—Gregory and Norbury, Gateage, Heaton Moor, Stockport. [X9786]  
1912 P. and M., 2 speeds, free, Kempshall, Hutchinson, butted tubes, 1 spare tube, adjustable back rest, Rex whistle, Veedol, P. and H. lamp; £50.—Peters, Wilfred Rd., Bolton. [7496]

SCOTT, late 1910 model, 3½h.p., in splendid condition, newly overhauled, tyres good, will mount any hill; on fullest approval to bona-fide buyer; bargain, £35.—Perkins, 22, Buxton Lane, Frizinghall, Bradford. [7508]  
1910 Triumph, free engine, splendid condition, new tyres, Kempshall back lamp, generator, horn, Cowey speedometer, mirror, Whittle belt, tools; £38.—Halton, 288, Warrington Rd., Pemberton, Wigan. [X9776]

QUADRANT, 4h.p., 1911 engine, everything else latest 1912, No. 9 frame, Saxon forks, front wheel stand, all accessories, spares, brand new condition throughout; expert examination; £27, or near offer.—16, Deepdale Rd., Preston. [7299]  
1912 Rudge Multi, new, shop-soiled, £49; 1912 Rudge, free engine, £44; 1912 B.S.A., free engine, new, shop-soiled, £45/10; only these three left, carefully packed, absolutely new, never been out of depot; room wanted.—Carrs, Knowsley St., Bury. [X9334]

CLEARANCE Sale of one or two machines.—Mag. Moto-scooter, say 1910, £9/10; Simms, mag. ignition, about 3h.p., running order, £8/10; accumulator, Hobart, about 2h.p., £6/10; these prices are: deferred or exchange terms arranged.—Hitchens, Ltd., Morecambe. [7320]

1912 6h.p. T.T. Bat-Jap, side by side valves, special timing, 24in. tyres, telescopic mudguards, spring forks, etc., etc., not done 1,500 miles, tools, spares, etc., guaranteed perfect throughout, any speed from 10 to 70 m.p.h.; cost over £70, offers; ordered next year's model.—Box L335, The Motor Cycle Offices, 20, Tudor St., E.C. [7548]

MAGNIFICENT 3½h.p. T.T. Motor Cycle, extra quality throughout, spring forks, mudguards, 2 brakes, Bosch mag., special Binks engine, overhead included valves, Binks 2-jet carburetter, will run from 6 m.p.h. to about 70 on level, demon hill-climber, done about 1,000 miles, practically equal to new; accept £40.—Leslie Binks, 67, Snowdon Rd., Eccles. [7271]  
GREAT Sale 2nd-hand Motor Bikes, must be sold.—2½h.p. J.A.P., £8/10; 2½h.p. Rex, mag., £12; 3½h.p. Triumph, mag., £17; 2h.p. Moto-Reve, free engine, 1910, £14/10; 2½h.p. 4-cyl. F.N., with 2-speed gear, £18/18; 1910 Triumph, new condition, £26; 1909 P. and M., 3½h.p., with 2-speed and sidecar, new condition, £36; 1910 Douglas, £26; 1910 Rex, with 2-speed gear, £20; 1912 Rex and Sidecar, practically new, £50.—Motor Cycle Exchange, 160 Young St., Sheffield. [0100]

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION III.

PLEASE Note New Address: The North Wales Motor Exchange, Holt St. Wrexham. Tel.: 283.

1912 8h.p. Matchless, 2-speed gear, all complete, with £22 Gloria sidecar, travelling case, etc., a magnificent turnout, just like new, £75; two Rudge multi, beautiful condition, £55 each; 1911 standard Triumph, appearance and running like new, £38; 1911 5h.p. Indian and sidecar, £42/10; 1911 free engine 3½h.p. Singer, £35; 1911 3½h.p. L.M.C. 2 speeds and free engine, all complete, a beauty, footboard starting, £36; 1909 Triumph, just been overhauled, £27; 5½h.p. Rex, 1910, Speed King, French grey, a beauty, £28; 1913 Premier, 2½h.p., drop frame, a little beauty, uncracked, £36; we have one T.T. model 1913 Douglas left for December delivery, now don't cruse; 5h.p. N.S.U., mag., B.B., spring forks, good tyres, monotonously reliable, a bargain, £16. We are now booking for 1913 delivery, exchanges a speciality, place your order with a reliable firm and get satisfaction. Our Mr. Jones will be at Olympia Show, make an appointment, we can help you. [X9829]

REY

THE NAME WITH A REPUTATION. (Established 1900.)

5, HEATH HAMPSTEAD, N.W.  
Close to Hampstead Tube Station.

Tel.: "Rey, Hampstead." Tel.: 2678, P.O., Hampstead.

FOR CASH ONLY

1912 SHOP-SOILED MACHINES, otherwise new.

BRADBURY, F.E. Model	£43
RUDGE T.T. Roadster	£39
ZENITH, 6 h.p.	£58
TRIUMPH, F.E. Model	
DOUGLAS, Model H	£42
CLYNO, 5-6 h.p., 2-speed	£59
A.C., Standard Model	£80
BAT, 5-6 h.p., 2-speed, chain drive	£62 10
HUMBER, 3½ h.p., 2-speed	£44
RUDGE, 2-speed	£46
RUDGE, free engine	£46

Compare our prices with others.

EXTENDED PAYMENTS.

NO EXTRA CHARGE  
on LIST AS UNDER—

BRADBURY'S, BATS, RUDGES, MATCHLESS, CLYNOS, ZENITHS, SINGERS, DOUGLAS, HUMBERS, ENFIELD, NEW HUDSON, PREMIER, TRIUMPH.

ALL NEW 1912 MODELS, until further notice.

1 DOWN. BALANCE TWELVE EQUAL 4 MONTHLY PAYMENTS.

SECOND-HAND.

225. F.N., 4-cylinder, 5-6 h.p.	1911
225. F.N., 4-cylinder, 5-6 h.p.	1910
226. F.N., 4-cylinder, 5-6 h.p., with clutch	1910
238. RUDGE, T.T. Roadster	1912
237. REX, 6 h.p., clutch, speedometer and sidecar	1911
239. BRADBURY, 3½ h.p., as new	1912
239. SCOTT, splendid order	1911
235. TRIUMPH, 3½ h.p. T.T.	1911
212. MINERVA, 3½ h.p., low	1909
229. PREMIER, 3½ h.p. T.T., as new	1912
228. JAP-CHATER, 4 h.p.	1912
223. REX, Twin, 4 h.p., T.T.	1910
28. MILLFORD Radial clutch cane sidecar	1911
22 10s. 1912 MABON CLUTCH.	
2280. F.N. Car, 10-14 h.p., as new	1912

All Accessories included on S.H. at the price advertised.

IMMEDIATE DELIVERY

OF 1912 MACHINES, OVER 30 IN STOCK OF LEADING MAKES, INCLUDING P. & M.'s, SCOTT, MORGAN RUNABOUTS, A.C.'s, G. & N.'s, AND G.W.K.'s.

TRADE SUPPLIED WITH  
INCLUDING SIDECARS AND CYCLECARS.  
LIBERAL DISCOUNT.

THE FAMOUS "REY" SIDECARS.

£6 5s. £5 5s.  
Side-entrance Models, Wicker, £7. Coach-built, £9 10s.  
2 Elegant Cane Models, Side-entrance, £10 10s.  
All complete with Hutchinson or Michelin 26 x 2½in. tube and tyre, and quick detachable joints.  
LIBERAL DISCOUNTS TO THE TRADE.

ORDER NOW FOR EARLY DELIVERY.

We are now Booking Orders for 1913 MACHINES and RUNABOUTS, now is your time to Book with THE ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

Sole LONDON Wholesale Agents for LINCOLN ELK.

On: 5, HEATH  
Address: REY, STREET,  
HAMPSTEAD.



## ALL OUR SIDECARS ARE GUARANTEED 12 MONTHS



MODEL D, LUXE,  
£6 5s.

MODEL C,  
with Cane Body, £7.



MODEL E,  
with Reversible and  
Detachable Child's Seat,  
£7 5s.

MODEL D,  
with Coach Built Body,  
£8.

## OUR REED CANE BODIES

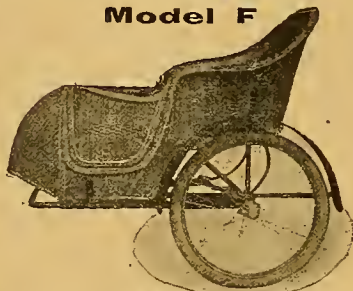
have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wickerwork, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

### Model G



£7 10s.  
Model F



£8 8s.

### All our Sidecars are supplied

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for List.

### MISCELLANEOUS BARGAINS.

3 1/2 h.p. Rex Engine, like new	£4 0
2 1/2 h.p. De Dion, Variable Pulley	£2 0
2 1/2 h.p. Antoine Engine, good	30/-
New Rubber-studded Covers, 26 x 2 1/2, beaded	17/6
Small Tricar Radiator	5/-
Triumph pattern Handlebar, new	6/6
New Prested Accumulators	7/6
New Prested Trembler Coil	15/-
Lycett's "Top Tube" Toolhags	7/-
Albion Clutch, fits Triumph	35/-
New Screw-cutting Lathe, 4in. centres	£6 10

## Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane.

**HALIFAX** (Two minutes from G.P.O.)

Telephone 919.

## MOTOR BICYCLES FOR SALE.

1911 Free Engine Triumph, Lucas 50/- lamp, Garner whistle, watch, spare butted; £39.-21, Market St., Leek. [X9852]

INDIAN, 5h.p., red, too fast for owner; £35, or exchange good change gear model.—Coates, Oakmoor, Staffordshire. [X9887]

TRIUMPH, free engine, 1912, new July, perfect condition; accept £45.—Normanton House, South Normanton, Derbyshire. [X9889]

£8.—F.N., 2 1/2 h.p., splendid running order, recently cost £5 to overhaul, new B. and B., h.b.c., low; must sell; bargain.—Mitchell, Wem. [X9338]

1912 T.T. Rudge, racing and touring bars, not ridden 500 miles, as new; £37, or nearest offer.—Madeley, High St., Newcastle, Staffs. [X9868]

RUDGE Multi, lamp, horn, Palmer tyres, Burbury car, done 100 miles, like new; £56, or exchange for cyclear.—John O. Jones, Llangollen. [X9830]

OFFERS wanted for 4h.p. motor cycle, Roe gear, being built; specification on application.—Box L333, The Motor Cycle Offices, 20, Tudor St., E.C. [7543]

1909 Triumph, splendid condition, new Dunlop belt, only ridden fine Saturdays; £27/10, including spares, bargain.—Shaw, 5, Mount Cannel, Derby. [X9710]

1912 F.E. Triumph, brand new, just delivered, best offer; also 1911 F.E. Triumph, equal to new, little ridden, with canoelet sidecar, £50.—Bradford House, Cradley Heath. [7486]

HUMBER Motor Cycle, 3 1/2 h.p., mag. (Simms), machine splendid condition; £12: exchange entered, musical.—Colclough, Eric House, Stone Rd., Longton, Staffs. [X9939]

1912 Bradbury, only done 600 miles, as new, X'Fall saddle, will sell £33; also 1912 2 1/2 h.p. Brown, Precision engine, perfect condition, £24; any trial.—Fox, Whittington Barracks, Lichfield. [X9958]

3 1/2 h.p. N.S.U., 2-speed, free engine, new belt, nearly 32 new tyres, splendid condition, £25; 1910 2 1/2 h.p. P.N., shaft drive, 2-speed, free engine, new tyres, perfect, £22, offers.—Cycle Depot, Blaenau Ffestiniog. [X9843]

RUDGE, 1911, free engine, excellent condition, new piston and cyl. recently fitted by makers, new 2 1/2 combination Roun rear, Garner whistle, Lucas Motor, new toolbags, all spares and valves, £33; with Lucas lamp and Cowey speedometer (run 2,000), £35/10.—Squarey, 45, Derrington Av., Crewe. [X9831]

## SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

2 1/2 h.p. De Dion, in good condition; a bargain, £26.—24 Townell, Boston Rd., Spilsby. [X9948]

2 h.p. Peugeot, h.b.c., re-bored and re-bushed, wants pulley; £8, offers.—130, Nicholls St., Coventry. [X9737]

REX, 1912, 6h.p. de luxe, slightly soiled; £52/10.—The Premier Motor Co., Aston Rd., Birmingham. [0185]

SCOTT, latest 1912 model (soiled); £60.—The Premier Motor Co., Aston Rd., Birmingham. [0186]

PREMIER, latest 1912 3 1/2 h.p. 3-speed model, Druid forks (soiled); £42.—The Premier Motor Co., Aston Rd., Birmingham. [0187]

TRIUMPHS.—2nd-hand 1912 free engine, £45; 1911 free engine, £38; 1909 standard, £24; 1909 standard, £22.—The Premier Motor Co., Aston Rd., Birmingham. [0188]

INDIAN, 7h.p., clutch model, 1911, with 1912 improvements; £45.—Williamson, St. George's Sq., Stamford. [X9945]

JAMES, nearly new, delivered July, perfect order, spare tyre, belt; £33.—Chesterfield, 15, Church St., Rugby. [X9743]

TRIUMPH Motor Cycle, 3 1/2 h.p., mag., in perfect order; £17/10.—Dalton, whip manufacturer, Pershore St., Birmingham. [X9835]

BRADBURY, 3 1/2 h.p., 1911, splendid order, new Palmer cord, 2 belts; £27.—Lloyd, Victoria Terrace, Leamington. [X9967]

TRIUMPH, 3 1/2 h.p. B. and B., Bosch, in splendid order; £21.—McDowell, 7, Lavender Rd., Winchester Av., Leicester. [7481]

REX de Luxe, 1912, standard model, 6h.p., 2 speeds, perfect, not run 200 miles; must sell; what offers?—159, Leam Terrace, Leamington. [X9968]

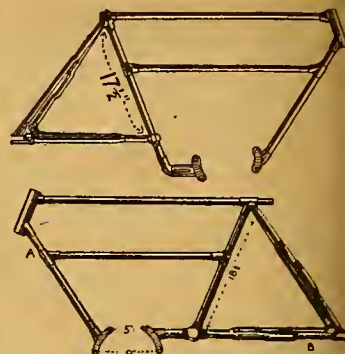
B.S.A., 1912, latest model, free engine, 2-speed, 2 1/2 h.p., tyres, bottled tubes, inch belt, drip feed, as new; £50.—Whitehouse, Swan Hotel, Studley. [X9882]

DOUGLAS, 1912 Model G, perfect condition, ridden under 1,500 miles, tyres unpunctured, all accessories; £33.—Pears, Limes, Wyde Green, Warwickshire. [7343]

3 1/2 h.p. Free Engine Triumph Motor Cycle, condition perfect, 5,500 registered mileage; no offer entertained under £38.—T. Duxbury, 73, Church Gate, Leicester. [X9748]

LADY'S 3 1/2 h.p. Motor Cycle, 2-speed and free engine, chain drive, very low, in perfect order and condition, with large lamp and horn; £35.—Lewin, 11, High St., Kettering. [X22]

1912 Matchless, 3 1/2 h.p., 2-speed and free engine motor cycle, equal to new, 38 gns.; sidecar, £5.—Lewin, 12, High St., Kettering. [X23]



## MOTOR CYCLE FRAMES

We have a quantity of frames by well-known makers. Two styles to choose from.

PRICE 32/6 EACH.

Rigid forks; 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

## NOTHING EXTRA FOR EASY PAYMENTS.

We are prepared to supply almost any make of New 1912 Motor Cycles for

**1/4 DOWN**

Balance in 12 Equal Monthly Payments

### THIS WEEK'S BARGAINS.

1911 3 1/2 h.p. HUMBER, like new	£28 0
3 1/2 h.p. PREMIER, 2 speeds, new	£46 0
4 1/2 h.p. N.S.U., 2 speeds, Bosch, Druids	£24 0
1912 6 h.p. REX DE LUXE, 2 speeds, chain drive	£45 0
1910 5-6 h.p. REX DE LUXE, 2 speeds, M.O.V.	£30 0
1907 3 1/2 h.p. TRIUMPH, extra good	£25 0
1912 2 1/2 h.p. NEW HUDSON, 3 speeds, new	£46 0
1911 3 1/2 h.p. PREMIER, 3 speeds, new	£42 0
1912 8 h.p. MORGAN RUNABOUT, new	£5 0
1910 SCOTT, a beauty	£32 0
3 1/2 h.p. TRIUMPH, 1907, magneto	£24 0
4 h.p. 1911 QUADRANT, Roc, 2 speeds	£33 0
3 1/2 h.p. 1910 L.M.C., Bosch, h-b. control	£22 0
3 1/2 h.p. 1910 TRIUMPH, beautiful order	£23 0
3 1/2 h.p. HUMBER, 2-speed model, Bosch	£39 0
1911 (Nov.) 3 1/2 h.p. RUDGE, free engine	£23 0
2 h.p. WOLF, magneto	£15 0
1911 Lady's HOBART, Armstrong 3-speed	£32 0
3 1/2 h.p. Twin PREMIER, fine machine	£25 0

### SINGLE-CYLINDER REXES.

3 1/2 h.p. 1908 Tourist, 1909 engine	£23 0
3 1/2 h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

### TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£20 0
5-6 h.p. Bosch, Lloyd's variable gear	£22 0
5-6 h.p. De Luxe, 1908, 2-speed model	£25 0

### SIDECAR COMBINATIONS.

1911 3 1/2 h.p. HUMBER, Millford sidecar	£32 0
Brond new 3 1/2 h.p. 2-speed PREMIER and new 18 guineas sidecar	£55 0
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 UNITED STATES.—The International News Agency, New York.  
 CANADA.—Gordon and Gotch, Ltd., 132, Bay Street, Toronto.  
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## National Road Guards.

IT must not be supposed that we are entirely hostile to the control of motorists by Liverpool amateur police, or that we are out of sympathy with all the users of the king's highway except motorists; for such is not the case. In fact, if the National Road Guards simply proposed to put down the road hog, who, though a *rara avis* compared with the number of motorists on the roads, undoubtedly does exist, and is, we fear, fairly common in certain districts, they would have our entire support.

No reasonable man can object to cases of dangerous driving being reported to the police and action taken to put a stop to this reprehensible practice. We notice that such steps are being taken by the Birmingham police, and we are glad of it: for these practices are not only objectionable in themselves, but they bring discredit upon the whole body of motorists, and are often the cause of complaints, unnecessary restrictions, and police activity. Then the innocent are likely to suffer with the guilty.

What we do object to, however, is the very evident animus and ill-feeling displayed by the instigator and his followers, who have threatened to take action against all motorists who exceed a bare 20 m.p.h., as timed by inexperienced timers, and possibly with watches that cannot be relied upon. There is already too much of this sort of thing done by the police, who, instead of regulating the traffic, horse as well as motor, in towns and villages, at dangerous corners and cross roads, and in other places where special care is necessary, lie in wait in the very places where a fast speed is perfectly safe and exceeding the legal limit then becomes simply a technical offence, and this with the object of extorting money to relieve the local rates, as is proved by the ferocity of the fines, which in some counties—Surrey, Sussex, Lancashire, and lately Huntingdonshire—are out of all proportion to the offence. In fact, the sport of wife-beating and assaults on the police can be indulged in more cheaply than riding a motor bicycle if the rider has chanced to leave his licence in the pocket of another coat.

If the National Road Guards will confine their attention to putting down the road hog and stopping really dangerous driving we should be only too glad to give them our support. It is not, however, fair to blame all motorists for the faults of a few. What is wanted is a little more consideration all round and a stricter observance of the rules of the road.

## Silencers.

THE interesting and instructive article on silencers recently published comes at an opportune time when the Local Government Board is about to issue fresh regulations regarding the use of cut-outs on motor cycle engines. It will be noted that our able contributor confirms the statements made on several occasions in this journal, viz., that to secure reasonable silence it is necessary to have a fairly large expansion chamber, and that without a certain cubical capacity in a given length of piping in which to allow for expansion and to permit cooling to take place quietness of running cannot be expected. Motor cycle engines have for long enough suffered from a lack of adequate means of quietening the explosions, and manufacturers have not cared to spoil the graceful outline of what is recognised as the *beau idéal* of motor cycle design by fitting what must inevitably be a somewhat cumbersome box. On May 30th, 1904, an excellent article contributed to this journal by a Continental writer, Dr. Wood McMurtry, showed that he had spent a considerable amount of his leisure in experimental work in connection with the silencing of the exhaust of motor cycle engines. Various trials were made with exhaust boxes of small dimensions, but they were all finally abandoned in favour of long pipes leading from an expansion chamber. This writer recommended two or more pipes to be led from the expansion pot towards the rear of the machine. The total area of these pipes in the case of his experimental models equalled the area of the exhaust port, and they were wound in one case round and round the chain stays of the bicycle frame. The flattening of the pipe ends was not suggested, but the writer proved that it was possible to silence an engine to such a degree by the above method that the noise of the expanding exhaust gases was scarcely audible.

We shall welcome the regulation of the Local Government Board if it really render a motor cycle more silent, by the prohibition of a cut-out, because by the abuse of it a certain class of motor cyclist has made himself an intolerable nuisance. The L.G.B., however, should not overlook the fact that there is no real necessity to legislate in the direction of the cut-out, because it has already a remedy in its own hands. The law says that no motor cyclist or any driver of a motor vehicle shall cause an undue noise which can be construed as a nuisance to others.





# OCCASIONAL COMMENTS

by "IXION"



## Hosing Down.

I believe that, within a year or two, it will have become the custom for the ostler of any hotel we stop at to touch his cap with the query, "Hose your machine down, sir?" The novel attention paid to weather-proofing seems to point in that direction.

Really, there is not a great deal to be done to render this millennium possible. Some plating has still to be eliminated from the lower portion of the machine; many controls are far from waterproof (*e.g.*, the handle-bar control of magnetos, the small frame spindles incorporated in steel rod control gears, etc.); many frame bearings still admit water; many carburettors would soon rust their slides under the hose; and so forth. In the old days we had to clean the largest cars down by hand, and the coachwork was the only part adapted to hosing. Such a state of affairs would be intolerable to-day, and the motor cycling public will not long tolerate the abominable dilemma of having to ride a filthy mount, or of going carefully over each detail with a hand rag, a bristle brush, and paraffin.

## Cyclecars and Small Cars.

It is abundantly obvious that the "cyclecar" designers are sure that they have got hold of a surviving proposition in the light three or four wheeler, and the high prices listed by some of the innovators, which exceed the list prices of many a small car proper, show that the cyclecar is thought to possess marked advantages over the genuine small car. The future of the cyclecar will depend upon the reality of these alleged advantages. The cyclecar's most obvious scoop consists of its higher speed and greater hill-climbing capacity, but these may probably be balanced by its inferior comfort. The greater weight and the more luxurious upholstery of the genuine car afford a degree of comfort which will not easily be obtained on the lighter chassis with its high speed engine and faster road travel. Hence, it is probable that the survival of the cyclecar depends on low upkeep charges.

Taxicab experience shows that a small car proper cannot be run for less than 4½d. a mile, even when the economies of cheap petrol, skilled attention, and giant organisation are available. The practical question of 1913 may therefore be as follows: *Can a single-handed amateur run a cyclecar for 2d., 3d., or 4d. per mile?* The final answer should certainly be affirmative. Some of the comparatively experimental chassis may be far more expensive for a year or two, but when the new designs have had time to settle down, cyclecar upkeep should be distinctly economical.

A light well-made chassis should cost little for mechanical attention and replacements. In all motor-ing upkeeps tyres are easily the heaviest item, and the cyclecar in its simpler forms should have a lower tyre bill than a heavy motor bicycle and sidecar. A pair of good back tyres can accomplish extraordinary mile-ages on the rear wheels of a light quadricycle, if the

clutch and brakes are sensibly handled, and if the rider be content to accelerate slowly. Banging the clutch in on full throttle to effect sensational dashaways is what peels off rubber treads.

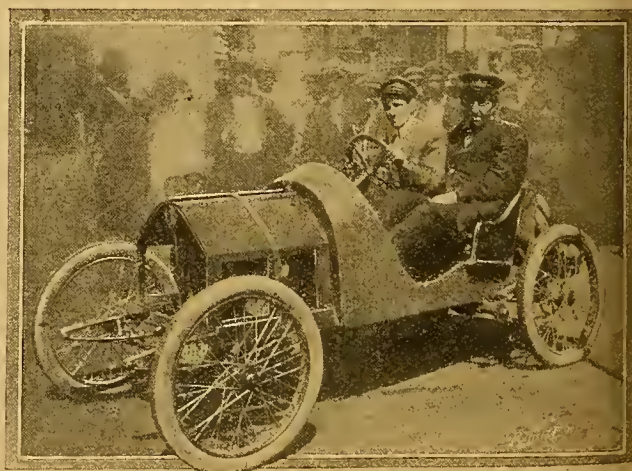
## Cheap Covers.

Some controversy has been excited by a diatribe on the alleged short life of the 35s. type of cover. Personally I should estimate there is a considerable variation in the quality of different samples. Several years have elapsed since I managed to secure a mileage of over 1,000 from one of these covers; but I perfectly recall obtaining nearly 4,000 miles from a cheap ribbed Clincher in the year 1906, and during the interim I have come across samples which have performed almost equally well. Only last week a rider showed me a 35s. cover on his back wheel, which had done 2,800 miles; true, the lozenges had completely disappeared, and the tread had become a mere "plain round"; but it was free from cuts and cracks, and still carried plenty of rubber along the business contour.

If it had been mine, I should have got a fresh studded tread vulcanised to it, and transferred it to the front wheel, on which I should expect a further 2,000 miles or so.

The last two or three 1,000 mile trials have provided numerous cases in which a single rider has used up two, three, four, and even five of these covers within a week, owing to hard riding over bad roads. It is probably advisable to fit a stronger cover on any back wheel which is not readily removable.

In the 1912 Taunton Trials very few of the best riders trusted to standard 2¼in. covers on their back wheels; and it is possible that a few leading makers will standardise the medium heavy covers for 1913.



An American runabout propelled by a twin-cylinder V type engine rated at 8½ h.p. The drive is by chain throughout, first through a counter-shaft and again to each rear wheel. The wheelbase is 72in., and the track 42in., and the total weight is 550 lbs. The makers, the C. V. Stahl Motor Co. of Philadelphia, now have in hand a four-cylinder engine to fit this cyclecar.



## THREE ON A CYCLECAR. THROUGH DARKNESS AND RAIN ON A G.W.K.

It was raining, literally pouring, when we set out from Kendal for Coventry on a G.W.K. at the beginning of last week. The vehicle was the one on which R. G. Mundy accomplished a non-stop run in the autumn trial; it had been driven down from London by road, and up to that point the run had been without incident. It was arranged that we should drive it to the Midlands, and our arrival necessitated a shuffling of positions, H. P. Beasley, the assistant secretary of the A.C.U., being perched on the engine cover.

Three on a cyclecar is perhaps expecting too much, specially as a heavy portmanteau was carried in addition, but from our viewpoint the test was more complete. The 180 miles trip was not exactly a run of unending pleasure, but that was due to no fault of the gallant little G.W.K., which answered all requirements and gave no trouble. The car had been hurriedly prepared, and no food and screen were provided, so we may be excused for raiding a motor agent's shop on a Sunday and bedecking ourselves in oilskins and sou'-westers. We finally got away from Kendal at 11.15 a.m., and were soon cutting out the pace for Lancaster and Preston, the sporting little machine being as nimbly as a 20 h.p. five-seater car of which we have lately had experience.

### The Handling of the Machine

One needs no special tuition in the handling of a G.W.K.; there are no levers on the steering wheel, an accelerator pedal being the only form of control. Depressing the pedal, which is the usual clutch pedal, disengages the friction wheel from the central disc, further pressure bringing the brake into action. The worm and sector steering is delightfully easy, without play, and yet not too sensitive. Gear changing is easy after getting accustomed to the friction drive. The clutch pedal is depressed and the gear lever put into the position desired as usual, but the pedal must then be released before touching the accelerator. To race the engine before releasing the clutch pedal would in time have the effect of grinding "flat" on the friction wheel.

Though a friction gear provides an infinitely variable ratio between the low and the high limits, five notches are formed on the quadrant as an indication to the driver. With a long journey before us, and owing to the late start, we hurried along at a fine bat, the engine seldom calling for a lower ratio than the top (4 to 1), though for that matter a 5 to 1 would increase the speed on gradual ascents. The engine is effectively silenced, and the friction drive emits but a slight hum. Beasley, who at first hung on to his insecure seat anxiously, was not long in discovering that he had the firmest seat of the party, the engine being directly under him. The wind was dead against us and blowing

with tremendous fury. After about twenty miles we watched for the water to boil, but the pump was doing its work too well.

Nearing Lancaster, the look-out man observed the Hutchinson tyre 20 h.p. Belsize on our heels, which, of course, meant extra throttle opening, but the bigger car was three or four miles an hour faster on the level, yet we covered nearly five miles before the party was out of sight. We stopped for a moment or two to offer assistance to a stranded cyclecar driver outside Lancaster, and then began to make up lost time.

### More Rain on the Lancashire Cobbles.

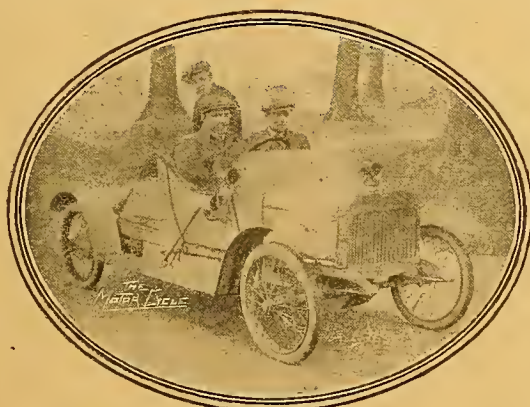
At Preston our average was 25 m.p.h., despite the strong wind, but then we struck the cobbles and tramlines, the memories of which are always associated with Lancashire in any casual reference to the district. To make matters worse, the clouds broke and the

rain poured down with doubled fury. It was well-nigh impossible to see, and our pace was reduced to 18 m.p.h., and soon we were sitting in a pool of water. For nearly ten miles these discomforting conditions prevailed, and we elected to stop at Wigan for a snack. The rain ceased here, and after half an hour's delay we pushed on again as fast as the stone setts would allow. We must be forgiven for feeling thankful that we were mounted on four wheels, two would have been a nightmare on such a network of greasy tramlines, a sidecar an improvement, though a

rather exposed position for the driver, but we were snug on the four-wheeler and protected from the elements. Nearing Warrington the good engine commenced to dot and carry one—no petrol left. By strategy in running with the off side wheels low in the gutter, we scraped along another two miles, but the engine finally gave up in sight of Warrington—not a drop of the precious spirit left. A passing cyclist took a message to a sporting cycle agent, who at once jumped on his bicycle and pedalled his hardest. We crossed the Manchester Ship Canal by the swing bridge, and struck out for Knutsford.

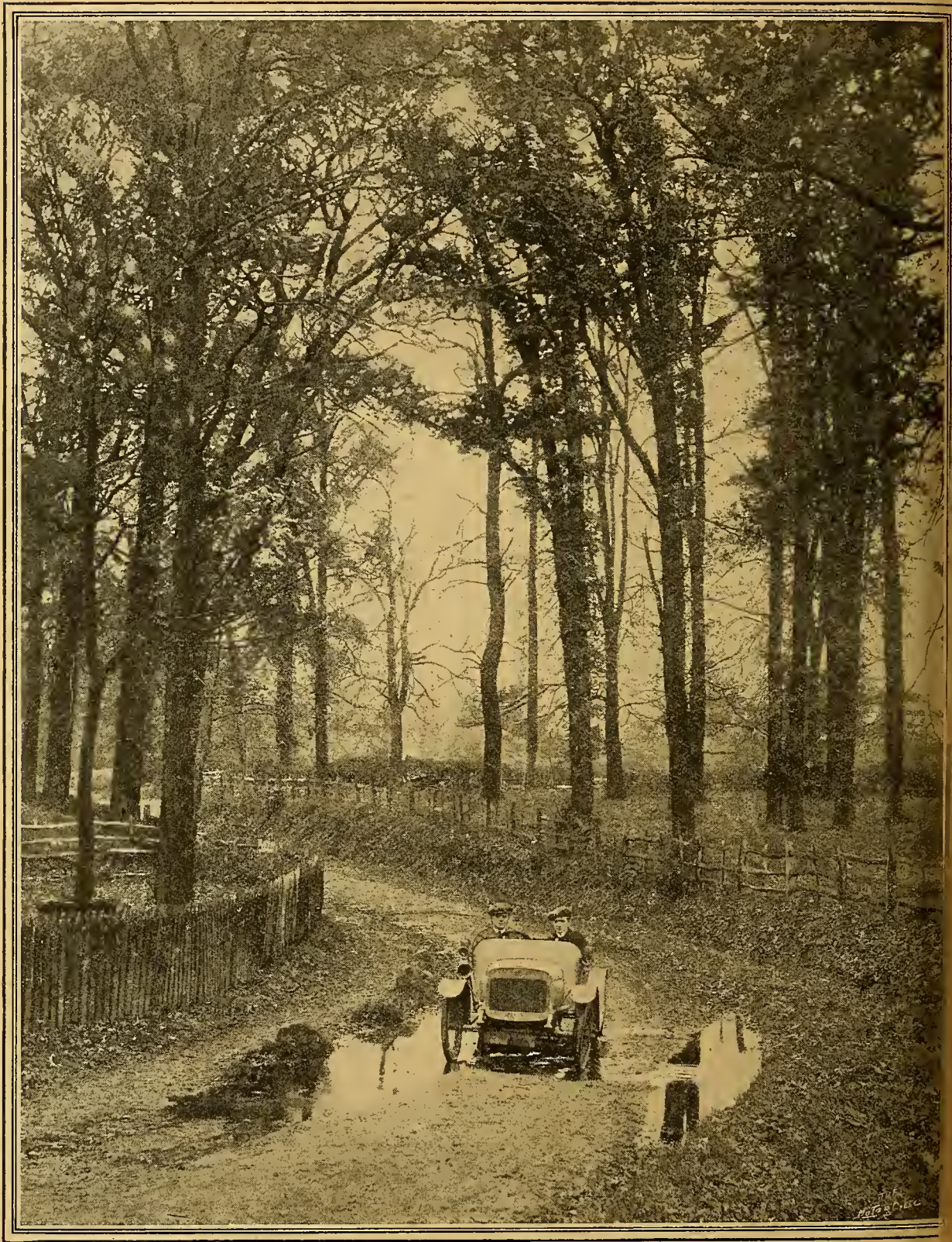
### The Conditions Improved.

We revelled in the Cheshire roads, not that the little G.W.K. was uncomfortable on any surface, and we were able to show much bigger cars how to shoot up hills. Through Holmes Chapel and Newcastle-under-Lyme the going was without incident—it had stopped raining for a time—and we finally reached Stone, Staffs., just before dark, our average throughout being just 20 m.p.h. After dinner at the Crown Hotel we set out into the inky darkness with two miserable little oil lamps to light our path. Luckily we knew the road, which added 5 m.p.h. to our speed, and caused Mundy and Beasley several times



The G.W.K. on which three passengers travelled 180 miles in a day at legal limit speed.





## AUTUMN.

*"Leaf after leaf, day after day  
Were massed into the common clay."—SHELLEY.*



## There is a Cyclecar.

to press imaginary clutch and brake pedal, as at turnings a black wall suddenly loomed ahead. We had not done with the rain yet: it pelted down and cut our faces like sharp stones. Lichfield looked dismal enough, but outside the city the conditions were miserable to a degree. Large pools of surface water reflected our weak lights, and somehow we managed to take the left turn for Tamworth instead of right to Coleshill.

So much rain had fallen that water stretched across the road, and more than once we tashed through it unawares at legal limit and sent a big wave over the dashboard. The incessant wet had but one effect on the vehicle, and that was to render the gear-changing mechanism stiff. This was especially noticeable on the ascent through the main street of Coleshill. The

road between this place and Stonebridge should be avoided if it means twenty miles added to one's route. It is terrible, and there is no such thing as dodging the pot-holes, even in daylight. Another watersplash taken all out in the dark was the last recollection of this moist run.

It will be observed that no reference has been made to skidding, simply because there was no suspicion of such a thing. The low build combined with the Stelastic tyres, which had only just begun to show the steel coils through the tread, contributed to the stability of the car.

We like the G.W.K. very much. The twin engine only makes its presence felt at slow speeds, there is ample leg room, a comfortable reclining position, and if only the brakes were more powerful it is difficult to imagine a more sporting little four-wheeler.

## Cyclecars.

## A DISSERTATION ON DESIGN.

A CORRESPONDENT signing himself "A.M.I.C.E." has written a letter on "Cyclecar Design" to our contemporary, *Internal Combustion Engineering*. The letter is obviously written by one who understands the design and construction of motor vehicles, and we think it of such a practical nature that we reproduce it for the benefit of our readers. We do not agree with all the opinions of "A.M.I.C.E.," but many of his arguments are very sound.

Sir,—I see that many designers of cyclecars are falling into some fundamental errors.

Assuming that the machine is to be a comfortable all-weather vehicle for ladies and luggage as well as for men, rather than a "sporting affair," may I suggest the following points as correct in principle.

Without correct principles failure in the end is assured.

Following the reference above to a "sporting affair" there are such different ideas as to "sport."

In the case of the most "sporting" machines of all, it is 10 times essential for them to be pushed up greasy hills in the midst of trams and lorries. I have seen this with a cyclecar which had no reverse.

My remarks will appeal mostly to those who refuse to do this sort of thing at any price. They will not appeal to the man who must cut the first cost down to the minimum and be prepared for some discomfort. He will put up with the "sporting affair."

## Points Considered Desirable.

1. Seats abreast, not tandem. (The unsociability of the car helped its doom materially.)

2. A differential and four wheels. (The differential gear would give as little trouble as any part of the machine.)

The tri-car form of three-wheeler is unsuitable owing to tyre wear and instability; the weight is wanted on the driving wheel and also low down and well inside the wheel-base; these three things are not obtained, as a rule, with the tri-car form, especially with the seats abreast. There is also no difficulty of steering if the back tyre bursts at speed.

Of three-wheelers there remains the tricycle form. This is not so bad, but you have a differential and three tracks, and it is better all round to add another front wheel and make it a cyclecar. As regards the separate drive by one belt to each wheel instead of a differential, in this the belts are asked to slip for going round corners, and to grip for driving, and to do both at once going uphill round corners, and such agreeable belts have not yet been made. If they do not slip going round corners, the back tyre will be wearing. A differential gear should be less trouble all the time and cheaper in the end.

There is a form of differential action combined with V belt

drive and infinitely variable gear, which should be cheap to make, but is not yet on the market.

Each back wheel is driven by a belt running over a pair of variable pulleys, one of which closes by centrifugal force when the speed rises, thus raising the gear, and *vice versa*; at the same time the other pulley opens against a spring owing to the pull on the belt increasing and *vice versa*.

By using a suitable chain or other gear reduction, the pulleys can all be kept large enough to suit a belt and small enough to put in a case. The life of a V belt running over large pulleys and protected in a case should be quite different from that to which we have been accustomed.

3. Seat midway between the wheels, for comfort, and very low.

4. Engine and gears behind seat, to get weight on driving wheels, and plenty of room for legs in front. About 8 to 10 h.p., three speeds and reverse.

The position of the engine behind the seat makes water-cooling advisable, and there is room between the two seats for the control rods or wires and for the pipes to come up to the radiator in front.

5. Wheels and tyres as large as possible within limits. The extra cost is soon saved in money, not to count the comfort.

6. Body. Weight and money can be economised here.

It might run to a carefully designed wind screen, but a hood, though very useful when standing still, is a terrible h.p. absorber on the move if put up. There is plenty of room for luggage over the engine.

7. Appearance. I especially suggest that too much attention should not be paid to convention in appearance.

"Looks" are a matter of opinion and of usage. Nothing "looked" more ridiculous than the pneumatic tyre when it first came in.

## Luxury Not Essential.

I should also point out that in many fundamentals there need be no difference in aim between the designs of the open two-seater car and the cyclecar. This may appear quite a heresy, but it will bear looking into. Other things being equal, no one wants an open two-seater car to be dear or heavy, and no one wants a cyclecar to be uncomfortable or unable to carry luggage, which it will be so long as the seats are placed over the back wheel or tandem.

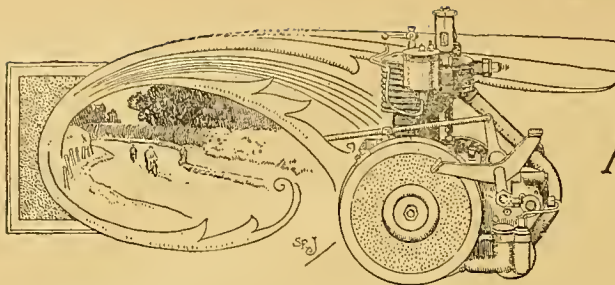
People only want a vehicle which can be relied upon to take them and their luggage over comparatively bad roads in a cheap, comfortable, and speedy manner.

They buy the small car because there is nothing else at present to do what they want. The cyclecar is speedy and cheap now. Make it, by suitable design, a comfortable, reliable luggage-carrying vehicle, and it will fill the small car's place without the latter's high price.

I make a difference between comfort and luxury. The luxury found on large cars nowadays is not for the open car at all.

A.M.I.C.E.





## An Open Letter to the Motor Cycle Trade.

By B. H. DAVIES.

**G**ENTLEMEN.—In the name of thousands of grateful riders we have to thank you for the courteous efficiency with which you have provided for our pleasures during the year 1912. The memory of the motor cycling community is stored with a blurred panorama covering millions of miles of road, ridden with an unparalleled minimum of compulsory stoppages, disfigured by exceptionally few heavy repair bills, and marred only by what Mr. Mantalini felicitously described as "demnition dampness," for which you were not in the least responsible. You have added to the gaiety of nations, and you have done even more for the public health than either Mr. Lloyd George or the British Medical Association. We trust that in return you have reaped reasonable dividends, and that the whole of your staff, from the principal scrip-holder down to the newest office boy, will share in the prosperity of your business.

### Spring Frames.

And now we are turning to you in sanguine anticipation of the 1913 season, trusting you will not think us wholly ungrateful if we respectfully mention a few minor matters which are dear to our hearts. There is that matter of springing, you know. British roads are not materially improving. We do not know which sub-section of the traffic is mainly responsible for the indescribable pot-holiness of many once velvety highways; it cannot be the motors; perhaps the odium must be shared by the perambulating scouts and peelers who watch us so narrowly. The sad thing is that, while roads are deteriorating, your springing remains stationary. Four or five years ago you introduced some spring fork designs, which were admirable, regarded as temporary expedients, but which frankly did not deserve to be eternalised, as we fear you are inclined to eternalise them. We recognise your handicaps; rigidity, lightness, and complete insulation appear as irreconcilable as oil and water; but we trust your ingenuity, and we remind you that your oldest clients are not chickens, *i.e.*, we do not grow tougher with each passing year, and many an involuntary curse has escaped our lips as your bucking bronchos humped us over rude pot-holes in this year of grace and floods.

### Really Sound Tyres.

We would further request that you should deal faithfully with your henchmen, the tyre manufacturers. We never relished those cheap covers for which you have evinced so strong a penchant. They puncture often, they gash readily, they are soon worn out. Now that in response to our clamour for variable gears you have hemmed in our back wheels with a thousand twiddly bits, and made tyre changing a weariness in

the flesh, we are compelled to put you in a dilemma. Will you be pleased either to invent new methods of wheel detachment, or alternatively to fit a 3,000 mile cover to the rear wheel of every machine with a hub gear?

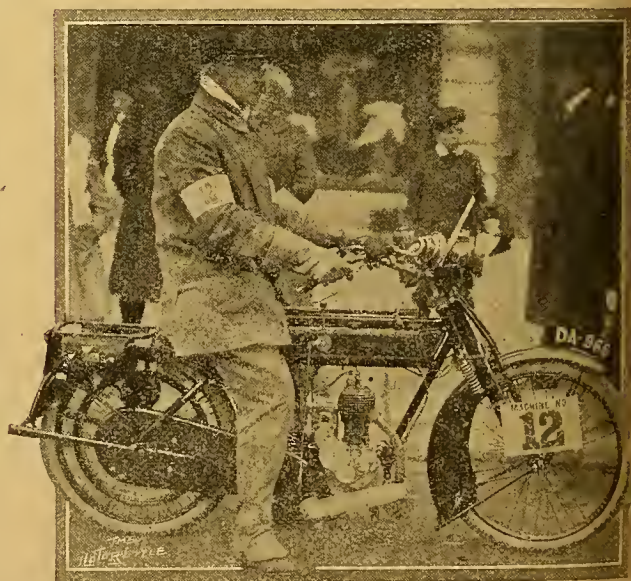
Some of us who exceed the allotted span in stature would be grateful if you provided better accommodation for our inches. Your taller clients encounter no little difficulty in stowing themselves away on your short frames, and you surely do not wish to emulate the classic hotel keeper, who kept but one bed in his hostelry, and either lopped or elongated all his guests until they fitted it?

### Belts and Gears.

We are particularly grateful for the magnificent assortment of variable gears which you have provided, but we would hint that in these days of sidecars and Porlocks we have no earthly use for any design which has a bottom ratio of not more than 7 to 1.

We think that the belt makers represent a section of your satellites who have done their manful best, and as the best belt is not too satisfactory on a 1912 design, we hope you are all offering us two-step drives for 1913. Otherwise we think that the chain drive with some form of spring or slipping clutch device, is likely to be forced upon you.

We hope you have devised some better method of carrying tools than the small, inconvenient and rattle



First appearance of the Sunbeam in competition. The machine is of 2½ h.p. with two-speed gear and oil bath chain cases. The rider is J. E. Greenwood, one of the non-stop competitors in the A.C.U. Autumn Trial in Lakeland.



**An Open Letter to the Motor Cycle Trade.—**

some pannier bags, on which you lavished a somewhat misguided affection last autumn. We fancy that a top tube bag, of decent dimensions, mounted on brazed lugs, has distinct possibilities.

If we had time to favour each of you with a representative deputation, we could display a varied assortment of excoriated knuckles. Surely it is high time that control clips were made without a multitude of sharp corners and projections, and nuts made more conveniently accessible!

We implore you to keep a statesmanlike watch on the cyclecar movement. We believe that if it is sanely directed it may open a vista of new delights for us motor cyclists; but we regard many hasty designs as uncomfortable, expensive, and even unsafe, while we think it grossly unfair that a miniature Rolls-Royce should be allowed to compete with motor cycles on even terms. We remember, too, how the early tricar was killed by over-elaboration, and we trust you to keep designs light, simple, and cheap.

**Prices and Discounts.**

We are perhaps exceeding our province when we suggest that the time has come for established makers to reduce their catalogue prices by a distinct percentage. At one time the agent who sold a motor cycle laid a train of trouble for himself. To-day he sells a certain advertisement, and starts a permanent source of increased income; he neither needs nor deserves so large a commission as was once his due. You yourselves will, of course, be inclined to grasp all the profit you can realise, just as we on our side have nostrils that dilate at the chance of discount. But there is no denying the fact that established firms make handsome profits; and we fear that envious foreign rivals will interfere before long, and com-

mandeer a good slice of your business, unless selling price soon assumes a fairer ratio to the cost of production. We would further hint that certain very costly avenues of advertisement, connected with track racing, have ceased to interest the majority of your clients.

In the name of the many duffers we number in our ranks we beg to compliment you on the high efficiency achieved by some of your automatic carburettors; and to remind you that simplification of control and maintenance of power in prolonged use are the factors which weigh most heavily with a majority among us. The open exhaust, dropped bar "knot" is distinctly over-articulate.

**Belt and Cylinder Guards.**

In respect of cleanliness we are not too fastidious; we are accustomed to removing dust and mud. When semi-charred oil is freely mingled with the aforesaid commodities, a most loathsome compound is produced, and it is distinctly loth to be removed from a profusely carved crank case. Wherefore it is not ungracious to mention that there is seldom a really sound crank case joint or tappet-guide-oil-trap among the lot of you. In this connection we may add that the lower run of your belts earns many a pound for the vendors of leg-overalls, and that the hot cylinder flanges on the far side normally assist the belt in its lethal work. If a new pair of leggings do not split on their first ride, they come home with the right knee burnt through, and the left ankle slit to ribbons. Furthermore, a rider of several leading makes can always be identified by the fact that his left boot will never take another polish in this life.

As the motor cyclist's year dates from Olympia, we take this opportunity of wishing you all, with genuine gratitude, a very happy New Year.

**A MODERNISED DE DION QUAD.**

A DE DION quad that is still in regular use must be accounted as somewhat of a rarity. The photograph shows one that is owned and regularly used by Mr. Charles Newbury, J.P., of Greenwich, a member of the Greenwich Borough Council



Mr. Chas. Newbury, J.P. mounted on his quad.

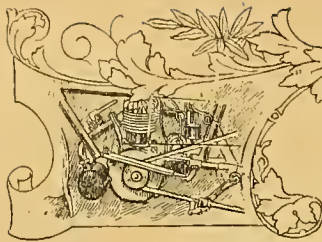
and former mayor. He finds the machine very useful for journeying to and from his country residence at Hextable, Kent.

Under the platform he has fitted a large box cross-ways for carrying fruit and garden produce from his large gardens. As evidence that the machine can still travel, it climbed Footscray Hill on top gear, whilst the other day its rider was cautioned by a police trapper on the Maidstone Road.

Various improvements have been effected by its present owner since he acquired the machine four years back from a Plumstead motor cyclist. In place of the water-cooled De Dion engine and direct drive by small pinion is a neat two-speed gear box with quadrant change and Roc type of clutch. A White and Poppe water-cooled engine removed from a tricar proved more powerful, and fifteen feet of coiled copper tubing replaced the small gilled radiator. The original frame, wheels, and tanks are used, but the large circular tank at the back is made to serve for water and oil only, and carries over three gallons. The frame tank is used for petrol, and carries two gallons.

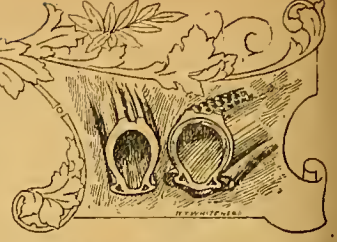
Palmer Cord tyres are used, and a set fitted eighteen months ago are still in good order. The passenger states that the chair is better sprung and more comfortable than sidecars that she has ridden in.





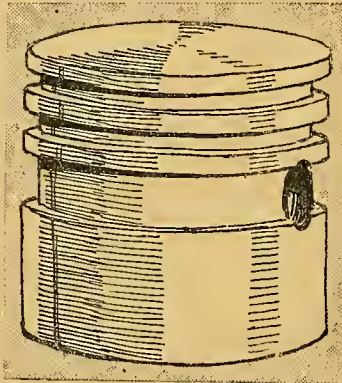
## 1913 MODELS.

Advance Details and Illustrations of  
New Model Motor Cycles.



### NEXT YEAR'S JAMES MACHINES.

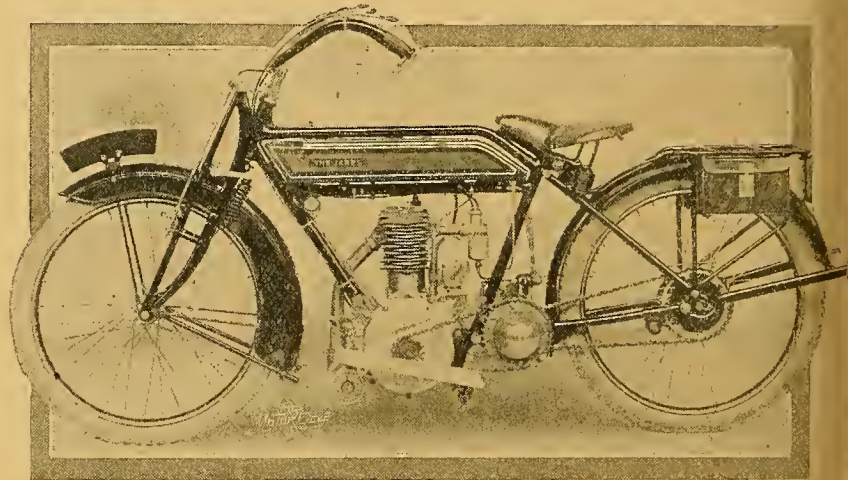
**T**HE James Cycle Co., Ltd., of Greet, Birmingham, have a very complete range of models for 1913, including two and three-speed chain-driven mounts and three-speed, free engine, and T.T. roadster belt-driven types. Of these, the three-speed chain-driven machine is the latest production, and shows great care in design. The engine is the same in all cases, and has a bore and stroke of 86 x 96 mm. It is now constructed entirely at the James Co.'s own works, and we were impressed by the construc-



Three-ring piston of the new James.

tional and testing methods and by the fine finish on all working parts. All cylinders are now tested under working conditions up to a water pressure of 500 lbs. per square inch, and an electrical brake testing plant is in process

of construction. The distinctive arrangement of radiator fins is retained, and the engine throughout is on the same lines as the 1912 type, but is now fitted with a very simple form of decompressor, which operates as follows: The exhaust cam is fitted with a small cam opposite the usual cam face, and the exhaust valve lifter is fitted with a



Chain side of 1913 James The grease bath chain cases have been removed for the purpose of the photograph.

toe. On moving the exhaust valve lifter laterally on its supporting pin, this toe is brought into engagement with the auxiliary cam, thus allowing a proportion of the gases to escape on the compression stroke. The cylinder head and valve ports are now machined all over, and the pistons and connecting rods are machined to a dead weight.

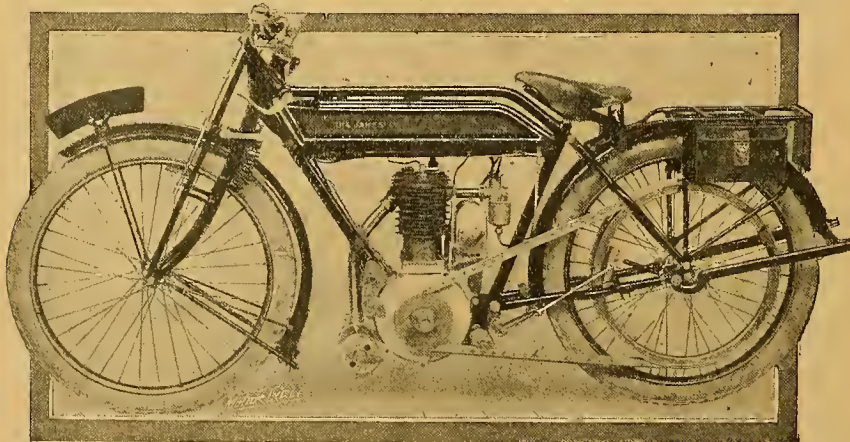
### The Three-speed Chain Driver.

Taking the three-speed chain-driver model first, we find that the drive is conveyed by a carefully enclosed chain to a three-speed counter-shaft gear which was described in detail in our issue of October 31st. This gear box is quite easily detachable from the frame, and has a very simple adjustment for

the chain tension, as it lies in a cradle which is machined in a jig, and consequently fits the gear box accurately. By this means it is impossible to get the gear box out of line or twisted. The gears are operated by a substantial lever, but have a compensating spring buffer arranged in the control rod, so as to render it almost impossible to damage the gears by careless changing. The rear driving chain is now entirely enclosed in a dust-proof case. Turning to frame details, we find that black celluloid-covered handle-bars are now standard on all James models. The tank has rounded corners, one seam only, and is supported from the bottom by lugs brazed to the frame. The magneto is controlled from the handle-bar. All wheels are now fitted with wide hubs, which are very strongly constructed and are of the disc adjusting type. The front guard is fitted with side flaps for its entire length, while the rear guard, which is detachable



James stand clip.



The T.T. James is belt-driven.

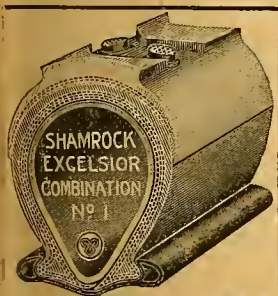


# re-tyre ... or ... retire

The choice is one of obvious necessity. When your tyres have carried you over thousands of miles of roads during the time which has elapsed since the season opened, it is surely wise to examine them carefully, inside as well as outside, and consider whether it would not be better **now**, before trouble comes, to replace those which have done the hard work.

Here are two favourite patterns of

## S-E TYRES



26 x 2½ in., per cover, 52/6



26 x 2½ in., per cover, 70/-

They can be relied upon to give good service on the heaviest machines, and their non-skidding properties enable you to laugh at greasy surfaces and the thick tread renders them extremely puncture-proof.

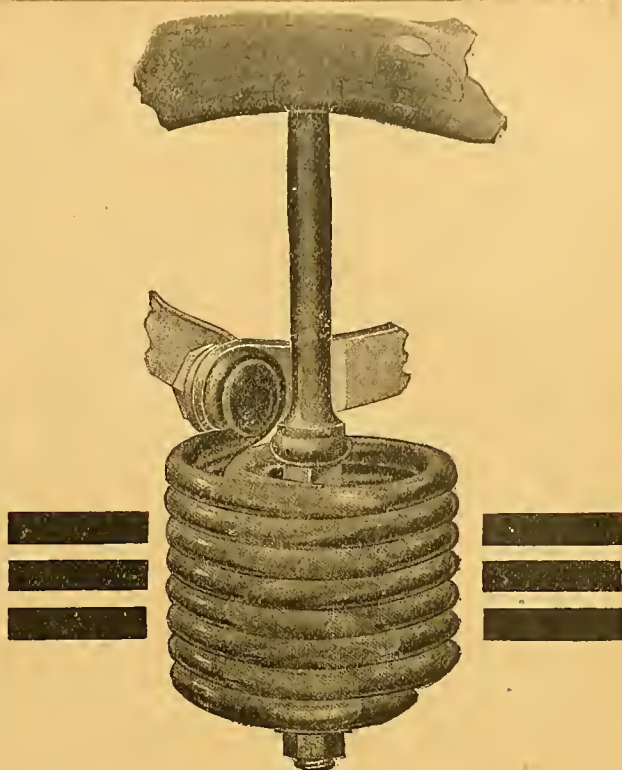
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## S-G BELTS

won GOLD MEDAL in the  
SCOTTISH SIX DAYS'  
TRIALS.



## —and the secret is the Spring.

To the man who has ridden other Saddles the first experience of a

## BROOKS

is a revelation in comfort-giving qualities.

And he naturally wonders "why"—

WHY this sensation of unlimited elasticity?—

WHY this total absence of that usual and irritating bounce?—WHY so superlatively comfortable?

"And the secret is the Spring"—THE BROOKS PATENT COMPOUND SPRING—the spring we illustrate above—the only spring which can entirely absorb vibration, and, at the same time, by its perfect compensating action, ensure an absolute immunity from bounce.

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**J. B. BROOKS & CO., LIMITED,**  
49, Criterion Works, Birmingham.

Note that a full range of the BROOKS Cycle and Motor Cycle Specialities may also be seen at our London Showrooms—Criterion House, 11, Grape St., Shaftesbury Avenue, W.C. (Oxford Street end.)

*In answering these advertisements it is desirable to mention "The Motor Cycle."*



# THE **3 $\frac{1}{2}$ H.P. ROVER**

## Stand 86, Olympia.

### Full of practical improvements.

WE SHALL BE SHOWING :

The **3 $\frac{1}{2}$  ROVER**, with Fixed engine . . . . . **£48-15**

The **3 $\frac{1}{2}$  ROVER**, T.T. Model . . . . . **£48-15**

The **3 $\frac{1}{2}$  ROVER**, with Free engine . . . . . **£55 - 0**

The **3 $\frac{1}{2}$  ROVER**, with 3-speed gear and  $2\frac{3}{8}$  Dunlop tyres, **£58 - 0**

And a **3 $\frac{1}{2}$  ROVER**, with 3-speed gear, fitted with a coach-built sidecar of our own manufacture, finished equal to the best cars. The chassis, made in our own works, is fitted with a brake on the side wheel, easily coupled up to the bicycle pedal brake—

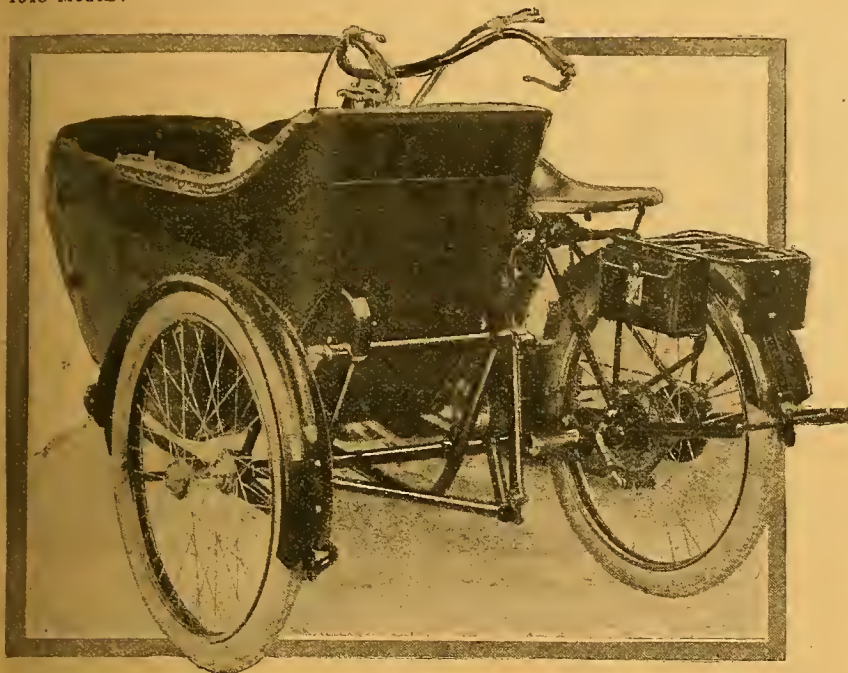
**Price, complete, £73-15**

*Catalogues free from :*

**The ROVER Co., Ltd.,**  
**COVENTRY.**



1913 Models. —



Three-quarter rear view of 1913 model three-speed James sidecar combination, showing the triangulated sidecar stays. The sidecar is a 1913 pattern Canoelet.

from the back stays, has side flaps at the front end, and is of extra width to prevent mud throwing up. The pannier toolbags are protected from mud by steel covers. Footboards are fitted, and these will probably be sprung at the rear ends. The kick starter is attached to the gear box, and all its gear is enclosed. The toothed starting quadrant has a loose tooth to ensure easy engagement.

#### Chain and Belt-driven Mounts.

The two-speed model is a replica of last year's type, with the exception of the frame fittings mentioned above, which will be standard on all the 1913 models. Both the chain-driven types are now fitted with a neat internal expanding rear brake. This is thoroughly mudproof, and yet does not cause the rear wheel to be difficult of detachment. The belt-driven models will be fitted with (1) the Sturmey-Archer three-speed gear, (2) the Villiers free engine, or fixed gear. In detail work these machines follow out the construction of the machines already described, except, of course, that the T.T. mounts will not be fitted with footboards.

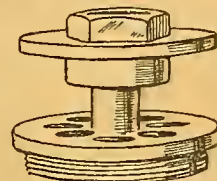
The James Co. are now manufacturing the Canoelet sidecar under licence, and in a form which is particularly suitable to their machines. The chief variation from the standard Canoelet is the triangulated rear frame, which enables a straight tie rod to be used. If desired, a large silencer can be supplied with the sidecar, which is connected to the expansion chamber by flexible tubing. This additional silencer renders the machine almost noiseless, and it may be recalled that we made this suggestion some months ago, naturally we are gratified to see it adopted.

#### THE NEW HOBARTS.

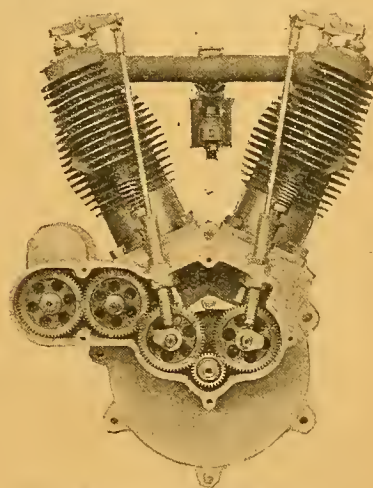
Messrs. Hobart Bird and Co., Ltd., are making the following machines for next season: Tourist Trophy model with long-stroke  $2\frac{3}{4}$  h.p. engine; this is a very fast lightweight solo mount. 4 h.p. twin  $68 \times 76$  mm. (552 c.c.), with Armstrong 1913 free engine and three-speed gear, starting from the ground. Brooks pan seat, large tank, with auto-drip oil feed; this model is intended for sidecar use.  $3\frac{1}{2}$  h.p.  $85.5 \times 85$  J.A.P. engine.  $2\frac{1}{2}$  h.p. with  $70 \times 76$  mm. (292 c.c.) vertical engine for ladies' use, Sturmey-Archer three-speed gear, very low frame; and a similar machine for men's use. The  $2\frac{1}{2}$  h.p. machines are fitted with Eisemann enclosed magnetos, the others with the new Bosch. All have Druid forks. The new models will be described and illustrated in our Show numbers.

#### NEW QUADRANT ENGINE.

The Quadrant Co., of Lawley Street, Birmingham, are manufacturing a large twin-cylinder engine for passenger work. It has the cylinders set at  $50^\circ$  and a bore and stroke of  $87 \times 95$  mm. respectively. The inlet valves are placed over the exhaust and are particularly simple to remove. The design of the engine is characterised by its simplicity and strength. The operation of the valve gear will be observed from the illustration reproduced. A straight induction pipe is used with the carburetter, placed exactly central.



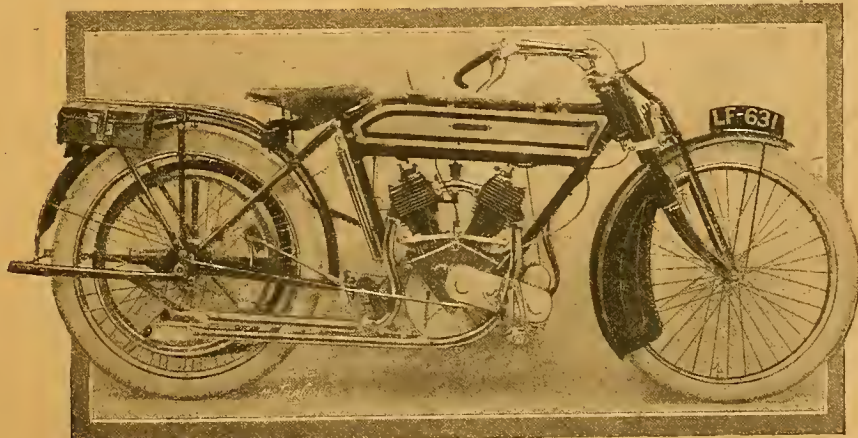
Quadrant inlet valve dome.



New Quadrant twin-cylinder engine. It is described on this page.

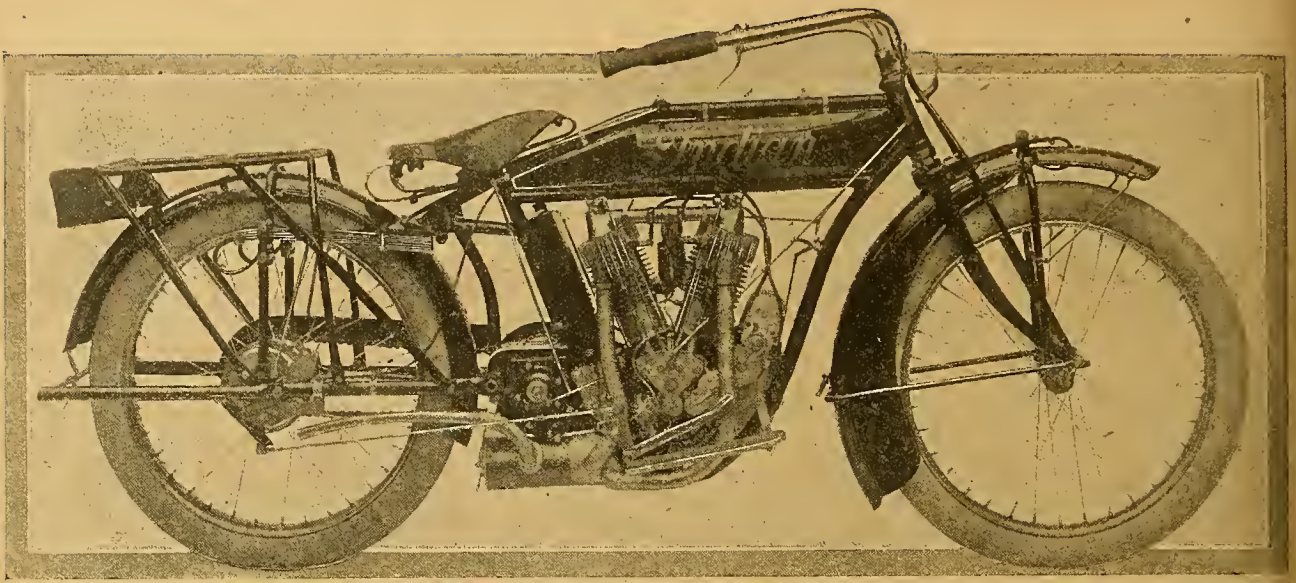
This new engine is to be fitted to a chain-driven bicycle with change speed gear, and should then make a fine machine for passenger work.

The original Quadrant Co. was one of the first firms in this country to take up the manufacture of motor cycles, and it is pleasing to note that, despite vicissitudes, the name Quadrant is still to the fore.



1913 model 6 h.p. Martin-Jap three-speed machine.



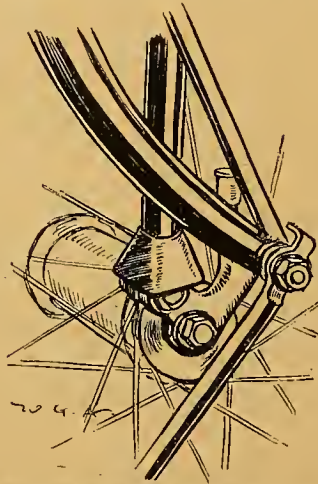


New design 7 h.p. two-speed Indian. Observe the rear springing, which is now standard.

## SPRING FRAME INDIANS.

THE latest pattern Indian is a distinctly handsome machine. The chief novelty lies in the springing of the rear portion, which is clearly shown in the accompanying sketch. There is a substantial lug at the rearward portion of the frame, which is further stayed by an additional saddle tube. To the lug referred to is bolted a seven-ply laminated spring. The chain stays are hinged at the bottom of the supplementary saddle tube, as we have termed it, and are free to move in a hardened steel bush, while there is a further movement of the vertical stay surrounding the rear mudguard and bolted to the after end of the chain stay. A further improvement is the fitting of the gear box. This is now held in the reverse position to what it was in last year's models, and is suspended in a slotted bracket immediately behind the saddle tube proper. Over the slotted bracket are plates which prevent the ingress of wet and grit. The fixing is particularly neatly carried out. It also

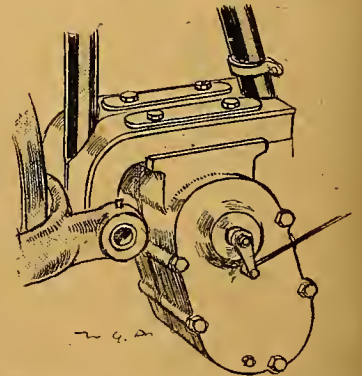
has the advantage of allowing the chains to be easily adjusted when occasion demands.



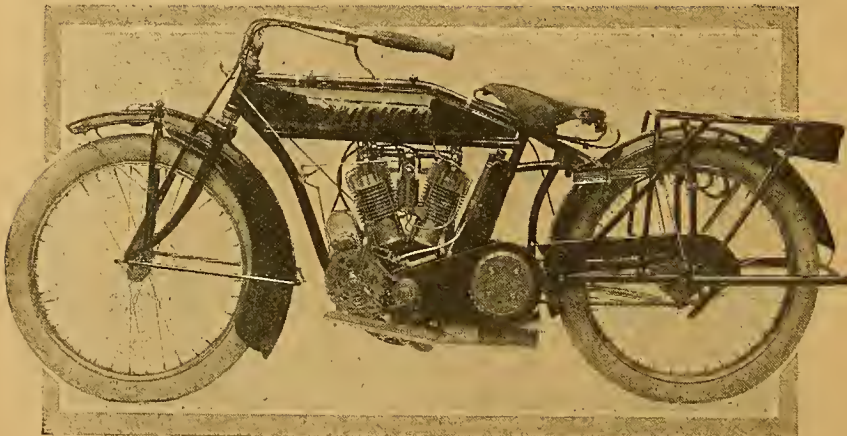
Indian front hub showing attachment of stand. Also observe mudshield over pivot.

## The Low Saddle Position.

Referring to the frame, it will be noticed that the saddle position is extremely low; in fact, the top of the saddle is considerably lower than the level of the top tube. The engine remains unaltered, except that the big ends are provided with roller bearings. The carburetter, spring forks, etc., remain as before. The silencer, however, is now fitted with a tapered exhaust tube. There is nothing in the silencer to retard the flow of the gas, and yet its velocity is so far reduced that the



Indian gear box showing the slide rails with covered-in slots.



Chain side of the 1913 pattern 7 h.p. twin-cylinder Indian.

exhaust is almost inaudible. Reference to the illustrations will show the extremely long pedals fitted to the brake on one side and to the clutch on the other. These allow enormous braking power and very easy withdrawal of the clutch. The foot-operated brake is of the internal expanding type, and that controlled by hand by the lever on the long handle-bar of the external type, one brake being fitted outside the other. Folding footboards are fitted. It will also be noticed that the chains are very efficiently guarded in the 1913 model. Particular attention has been devoted to mudguarding, the guards measuring 4 in.



**Olympia Cycle Show, STAND 94 (GROUND FLOOR).**

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**Suitable for all climates.**



## TRICAR.

24in., 26in., and 28in. diams.  
24in. .. .. 40/-  
24in. .. .. 42/6  
24in. to fit 24in. rim .. 45/-  
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Covers in this Pattern  
650x65, with voitturette beads .. 60/-

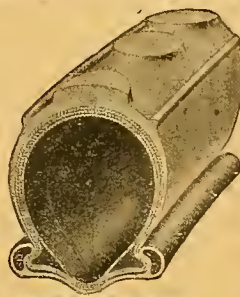


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26in. only.  
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24in. .. 50/-  
Made by our new Electro-Hydraulic process, which ensures uniformity in casing and tread, and produces a superb finish.

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24in. .. .. 32/6  
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Suitable for 3 1/2 in. to 5-6 h.p. machine.



## STONEHENGE.

24in., 26in., and 28in. diams.  
2in. .. .. 25/-  
24in. .. .. 26/9  
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24in. to fit 24in. rim .. 31/-  
Extra strong casing.

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AVON Quality (Red).		NOVA Quality (Red).	
1 1/2 in. .. ..	8/-	1 1/2 in. .. ..	6/9
2 in. .. ..	8/9	2 in. .. ..	7/6
2 1/2 in. .. ..	9/6	2 1/2 in. .. ..	8/3
2 1/2 in. .. ..	10/3	2 1/2 in. .. ..	9/-

All motorcycle tubes can be fitted with the Avon Dome Ends at 2/- each extra.

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24in., 26in., and 28in. diams.  
2in. .. .. 21/-  
24in. .. .. 22/9  
Also 26in. x 1 1/2 in. .. 19/3  
Suitable for 2 1/2 to 3 1/2 h.p. and Sidecar wheels.



## Lightweight A.

24in., 26in., and 28in. diams.  
2ins. .. .. 17/9  
24in. .. .. 19/-  
Also 26in. x 1 1/2 in. .. 16/9  
As a cheap cover this cannot be beaten.

## AVON DOME ENDS.



Easily fitted. Easily detached.  
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A special grade at a special price.



## COMBINATION.

24in., 26in., and 28in. diams.  
2in. .. .. 42/3  
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24in. .. .. 45/9  
3in. .. .. 49/3  
Steel and rubber studs: an ideal all-weather non-skid.

## AVON MOTORCYCLE BELTS.

1/2 in. .. ..	1/4 per foot.	1/2 in. .. ..	1/10 per foot.
1 in. .. ..	1/7 " "	1 in. .. ..	2/2 " "
1 1/2 in. .. ..	2/7 per foot.		

## RETREADING (any make of Cover).

26in. or 28in. x 2in., 2 1/2 in., or 3 in.  
Extra heavy tread, Round Stud or 7-ridge pattern .. .. 12/6  
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Steel-studded tread .. .. 28/-

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24in., 26in., and 28in. diams.  
2in. .. .. 45/9  
24in. .. .. 47/9  
24in. .. .. 49/3  
3in. .. .. 52/9  
Specially constructed studs, large base.



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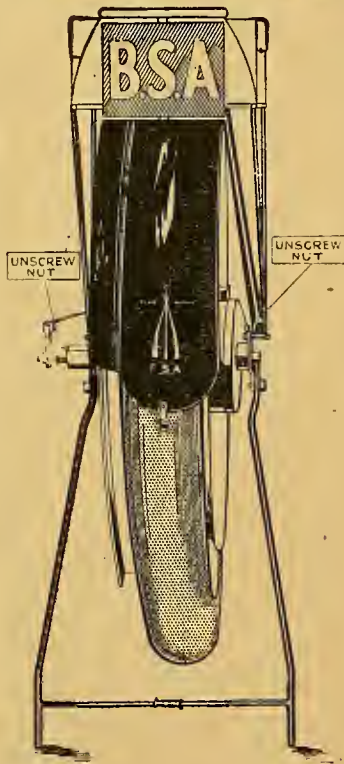


*Easy Detachability of Rear Wheel*  
*another advantage of the*

# B.S.A. MOTOR BICYCLE

FITTED WITH THE

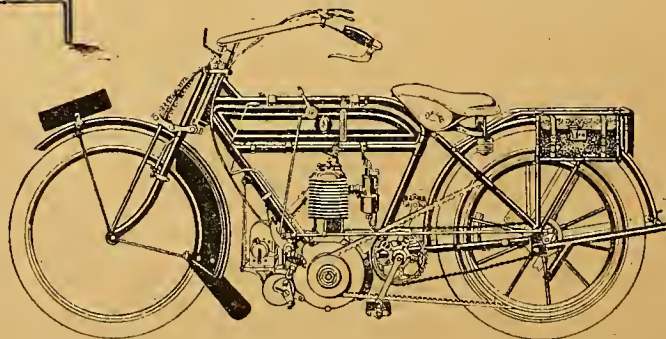
## B.S.A. Two-Speed Free Engine Hub



To detach the rear wheel of the B.S.A. Motor Bicycle, fitted with the B.S.A. Two-Speed Free Engine Hub, is practically as simple an operation as removing a wheel with ordinary hub. There are only two additional nuts, both easy of access, one on friction arm and one on actuating lever as illustrated. The latter nut releases the control, which being fitted **ON ONE SIDE ONLY**, greatly simplifies detaching or replacing the wheel. The adjustment of hub and control is not affected.

The B.S.A. Motor Bicycle, fitted with the B.S.A. Two-Speed, is the ideal combination for solo and side-car work. Starting away from the free engine position, which is **perfectly free from friction**, the movement of a single clutch operating both gears, takes up the drive with silent smoothness. The B.S.A. Two-Speed is the simplest, most efficient, therefore best change speed hub on the market.

B.S.A.  
 TWO-SPEED  
 FREE ENGINE  
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 £60.



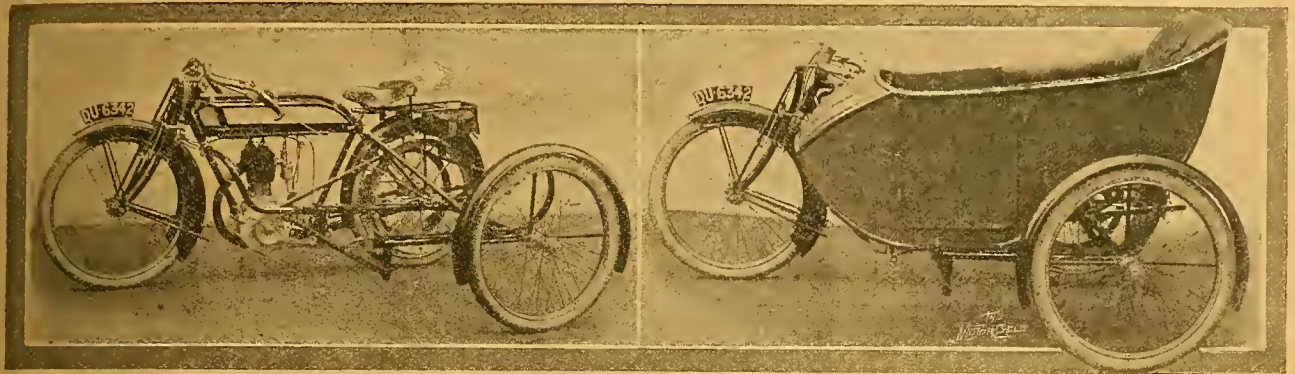
B.S.A.  
 MOTOR  
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**The Birmingham Small Arms Company Limited,**  
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*Mr. H. Perry, Uttoxeter, writes:—"I use B.S.A. Cylinder Oil solely, and have a great opinion of same for cool running and preserving engine."*





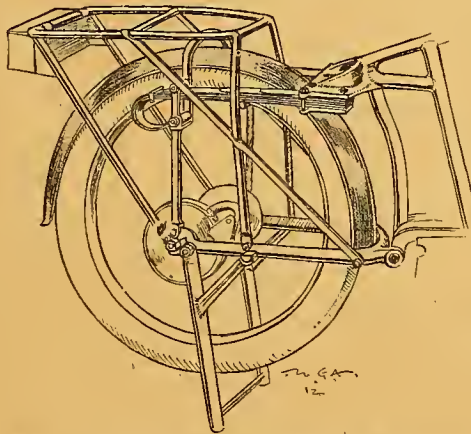
#### THE HUMBER SIDECAR.

Humber, Limited, have decided to add a sidecar to their range of 1913 models. Our photographs show—(1) The chassis design and (2) the complete sidecar attached to a three-speed bicycle.

across, a far greater width than usual. An extremely strong lamp bracket is now supplied. The method of carrying the toolbag at the rear of the carrier, which is now rigidly and independently fastened to the frame, is well worthy of attention. Immediately below it the number plate can be carried. The tyres are of ample dimensions, being almost 3in. Altogether the machine has an extremely handsome appearance, and should be ideal for sidecar work. The only other model to be listed for 1913 is the 3½ h.p., which in the main closely resembles the 7 h.p. we have just described.

#### ENCLOSED DRIVE BRADBURY'S.

We recently inspected two Bradbury machines with enclosed drive. One was a chain-driven model with both chains enclosed, and the other a belt-driven machine with a guard running completely round the belt and between the wheel and belt rim. These guards are the work of the Coventry Plating and Presswork Co., which firm also showed us a guard constructed for the Bradbury belt-cum-chain model, in which the chain is entirely enclosed and the belt is enclosed all but the outside. All these guards are easily detachable and are made of tin with the exception of the inspection doors on the chain-driven types, which



Rear portion of 1913 Indian showing the laminated rear springs and arrangement of carrier.

are aluminium spinnings neatly hinged to the guard.

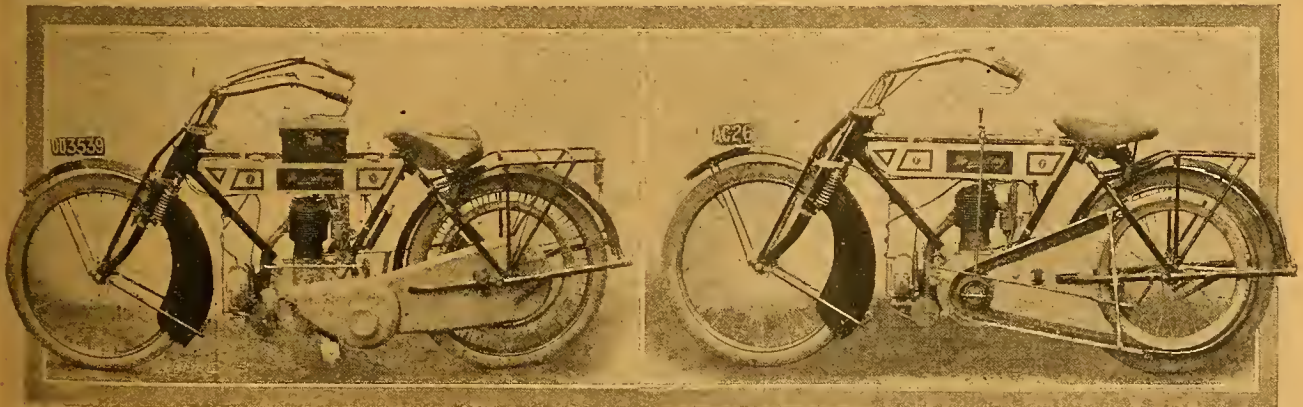
#### ROC THREE-WHEELERS.

A call at the Roc works proved a revelation as to the number of three-wheelers being turned out by the firm. A large number of these are light delivery vans; and when we say that they have been sent to such far away spots as St.

Petersburg, Melbourne, San Paulo, Bombay, and Corea, it gives a fair idea of their popularity. We saw one of these machines, fitted with a twin 6 h.p. engine, which will be on view at Olympia, but there are only to be detail alterations to the machine, which has proved very satisfactory. The chief of these refinements will be the fitting of a hand brake, which acts on the belt rim in a similar fashion to the usual motor cycle foot brake.

#### THE NEW TRIUMPHS.

We inspected the 1913 Triumphs last week, but our illustrated description must remain over until next Thursday. There is but little change in this highly successful mount, though improvements in detail work are noticeable. The silencer has a long pipe extending to the rear, and is minus a cut-out. From experience we know this arrangement to be highly efficient. The three-speed model has a new form of changing mechanism, somewhat similar to the long lever used on the T.T. machines. It is attached to the tank tube immediately behind the engine. A new design front mudguard has been adopted, rendering the shield over the magneto unnecessary. A decompressor may also be expected as standard on 1913 Triumphs.



Chain-driven Bradbury with entirely enclosed transmission.

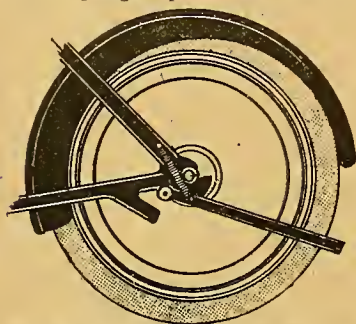
A Bradbury with complete belt shield by the Coventry Plating Co.



## NORTON.

THE frame of the 1913 Norton has the ball head, top and bottom lugs made in one piece. The frame tube from engine to ball head passes right through the bottom lug and mitres against the socket tube; flush joints to the top and bottom tubes make a neat appearance, and a flush joint is also used at the seat tube. The fork ends shown in the annexed sketch have been so made that when refitting the rear wheel with three-speed hub the spindle may be lodged on the projection of the fork end, and so facilitate reassembling.

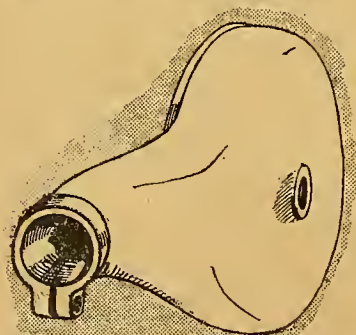
The stand is of the spring-up type, i.e., when the machine is wheeled off the stand it springs up without the rider



Spring-up stand new fork end and rear guard fitted to 1913 Norton's.

bending down to lift it or fasten it in position. The front fork on the sidcar model has been considerably widened at the struts, but they narrow to the usual width at the front wheel spindle. Side extensions to the mudguards have been added. We illustrate the rear guard with side wings or extensions, which are so designed as to keep mud and water off the belt.

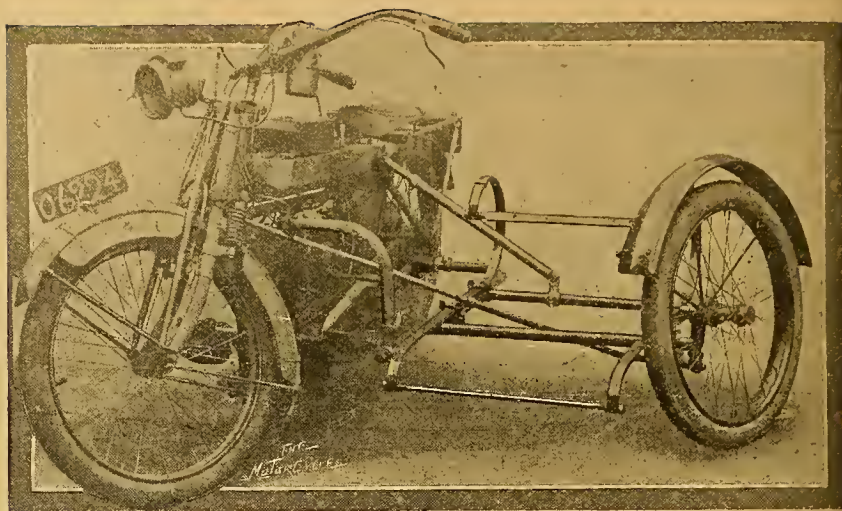
The aluminium footboards are now placed above the engine pulley, and are attached to one of the crank case bolts



Expansion chamber fitted to the right side of Norton silencer.

nearest to the cylinder. The standard model will in future be fitted with an expansion chamber on the silencer. We illustrate this. From the expansion chamber a long tube leads to the rear of the machine, and is clipped to the mouth of the expansion chamber by means of a cross pin, the end of the expansion chamber being split for the purpose.

The 1913 Norton cylinder has an air-cooled passage cast between the combustion and valve chambers, radiators being cast on both sides of the passage. The standard piston has been lightened and webbed and now weighs only 16 ozs.



A patent duplex steering sidcar attached to a Clyno. The sidcar wheel, as will be noticed, is connected to the handle-bars of the bicycle. It will be exhibited at Olympia.

One piston ring only will be used in conjunction with the Norton oil grooves, and the connecting rod has been improved by rounding off the I section in such a manner that it approximates nearer to a solid rod. The chain cover for the magneto, instead of being of stamped brass, is now cast in aluminium, and presents a very neat appearance. Mr. Norton is engaged on a new sidcar with semi-streamline shaped body; the body will be made of wood and hung on long shackles between C leaf springs, which are inverted both front and back. This should provide a very fast form of springing.

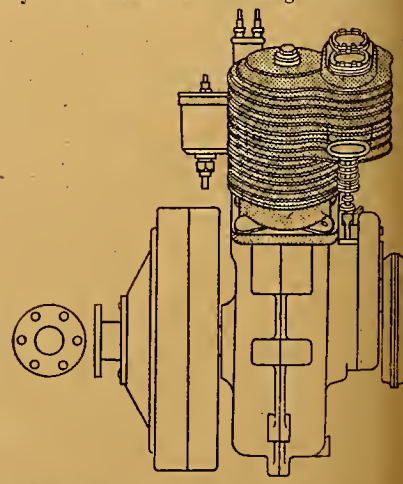
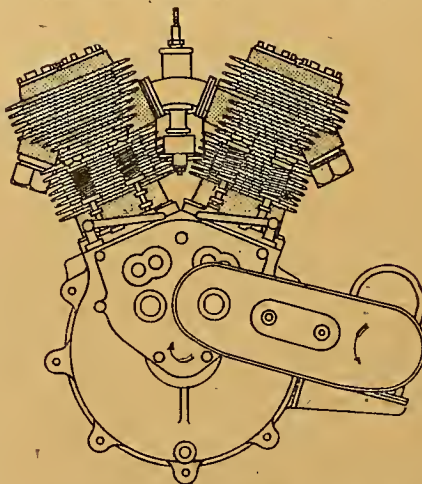
## FAFNIR ENGINES.

The principal Fafnir model for 1913 will be the twin 84×88 mm. engine, which will be known as the "682" 8 h.p. type. It is externally practically the same as the old 6 h.p. twin engine, 70×80 mm., except that the magneto is chain driven. Also a cyclecar engine, which is similar to the above, except that it is provided with a leather-faced cone clutch, and is suitable for cyclecars with shaft trans-

mission, in which case the engine is set longitudinally in the frame. If, however, the engine be fixed transversely in the frame, the clutch is not used, but in its stead a large outside flywheel is fitted. The 3½ h.p. type, 85×88 mm., is also retained. All Fafnir engines will be fitted with Bosch magnetos, and the new type of B. and B. carburetter; the Fafnir two-speed gear is also made adaptable to all these engines. This gear is a highly practicable and well-tried type and really deserves to be better known. The pulley is driven by enclosed gears from the engine-shaft, and the gear incorporates a free engine clutch and two speeds, the change being effected by means of dog clutches. All models will be fitted with adjustable tappets.

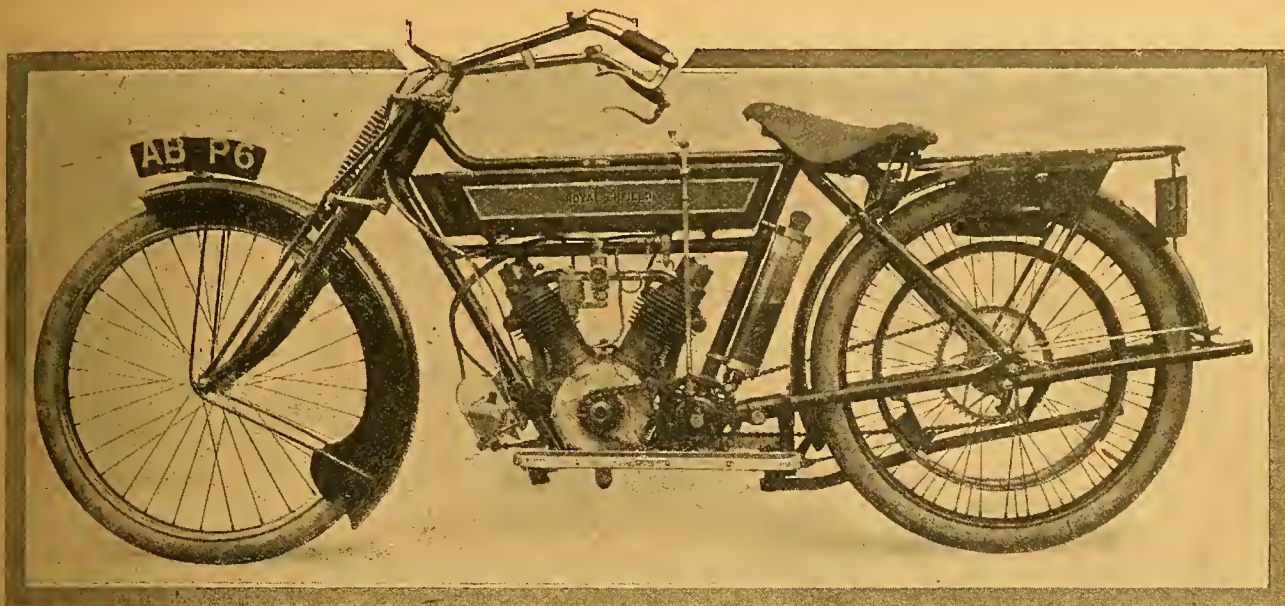
## A.S.L.

A new design two-speed gear will be introduced on the 1913 model 3½ h.p. A.S.L. It is placed in front of the engine, whence the drive is by belt from a 6in. pulley to a 14in. belt rim. The drive between the engine and gear box is by an enclosed chain running in oil.



Side and end views of the "682" 8 h.p. twin-cylinder Fafnir cyclecar engine, showing magneto drive and leather faced cone clutch.





The new design 3 h.p. twin-cylinder Enfield for 1913.

## ENFIELD.

THE principal new model Enfield for next year is the 3 h.p. chain-driven twin. This machine has a V engine with cylinders at  $60^\circ$ , bore and stroke  $60 \times 75$  mm. = 425 c.c. The cylinders are held to the crank case by a double dog in the centre and a separate dog on each side. The usual bolts and nuts used to fasten the cylinders to the base are done away with, and all that is necessary to remove the cylinders is to undo three nuts, which are easily accessible, one to the central dog and the others to the side dogs. This arrangement greatly facilitates the removal of the cylinders and the cleaning of combustion heads.

The inlet valves are mechanically operated by overhead rockers and long tappet rods, the mechanism on combustion head being covered by a dome. This dome has a bayonet joint, and when the valve cage is screwed down to its seat the dome is inserted, turned through about one-eighth of its diameter and locked upwards. The dome forms a complete cover for the inlet valve and its mechanism, and on it is cast a union for the induction pipe which connects to the two-lever Amac carburetter, placed between the cylinders.

A new feature of the 3 h.p. engine, which, by the way, is made throughout by the Enfield Cycle Co., Ltd., at their Hunt End Works, is the mechanically forced lubrication. This is effected by means of a gear pump fixed to the side of the crank case and driven off one of the timing wheels. At the rear of the seat tube is a cylindrical glass oil tank, the glass being practically unbreakable owing to its thickness—a quarter of an inch. The tank holds sufficient oil for a considerable distance; in fact the same oil is used over and over again until its viscosity be destroyed, when, of course, it should be renewed. Oil is pumped from the glass tank and conveyed in a tube to a hole in the main shaft, through this it passes and on through a web in

the flywheel to the connecting rod big end bearing. Channels are cut in the sides of the bushes and the connecting rod bearing to allow the oil to overflow into the crank case sump, whence it is pumped back to the oil barrel through a tube which stands up in the centre of the glass tank and is bent over near the top.

When the engine is running, a continual flow of oil from this tube acts as a tell-tale and enables the rider to verify the lubrication and also the quantity of oil that is delivered to the bearings. The supply is governed by a needle valve with a knurled top.

The air release is fitted at the back of the crank case and communicates with the timing gear case, the cover for which is the whole diameter of the crank case. There is a partition cast between the flywheels and the timing gear. To remove the timing gear cover it is only necessary to undo a few nuts, when the cover can be lifted off with the pump and magneto drive *in situ*.

The silencer is fitted longitudinally below and just to one side of the crank case, the exhaust pipes leading into the top of it at each end. This exhaust box acts as an expansion chamber, and the taper silencer pipe extends from the rear end of the box to a point close to the rear wheel axle. We append a diagram of the mechanically forced lubrication showing the path of the oil from the tank through engine to the sump and back to tank.

The engine is a particularly well-made and well-finished job and looks very workmanlike. Its running on the track at the rear of the works proved it to be well balanced and capable of good speed.

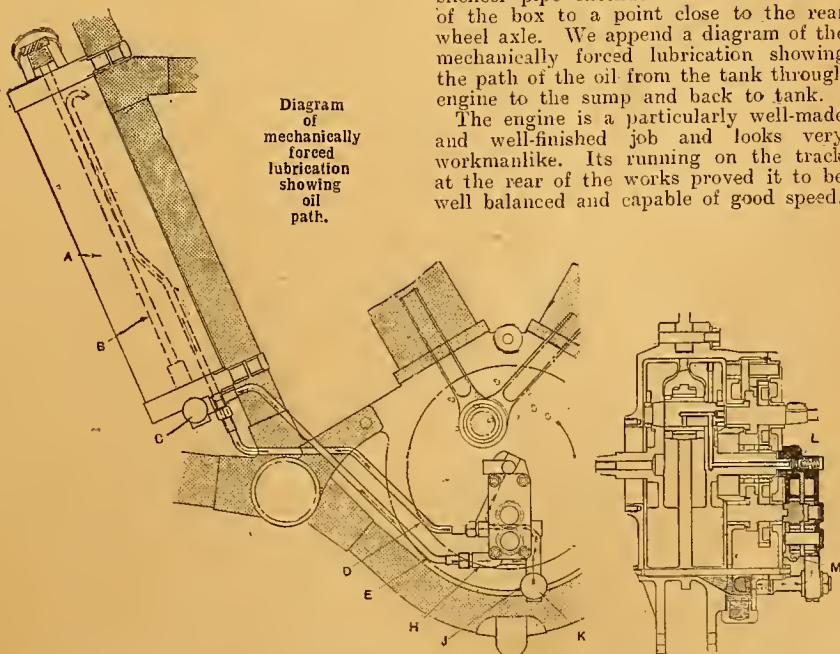


Diagram of mechanically forced lubrication showing oil path.

- A. Glass barrel.
- B. Regulating needle valve.
- C. Filter.
- D. Return pipe engine to tank.

- E. Suction pipe tank to engine.
- H. Induction pump.
- J. Expulsion pump.

- K. Suction from sump to return pipe.
- L. Oil entrance in crankshaft.
- M. Oil entrance in pump front tank.



## 1913 Models.—

The new model 3 h.p. Enfield is provided with a kick starter. The mechanism of this has no ratchets, pawls, or other parts to get out of order, and is made on the same principle, so far as the free-wheel portion is concerned, as the 1912 free-wheel pedalling gear.

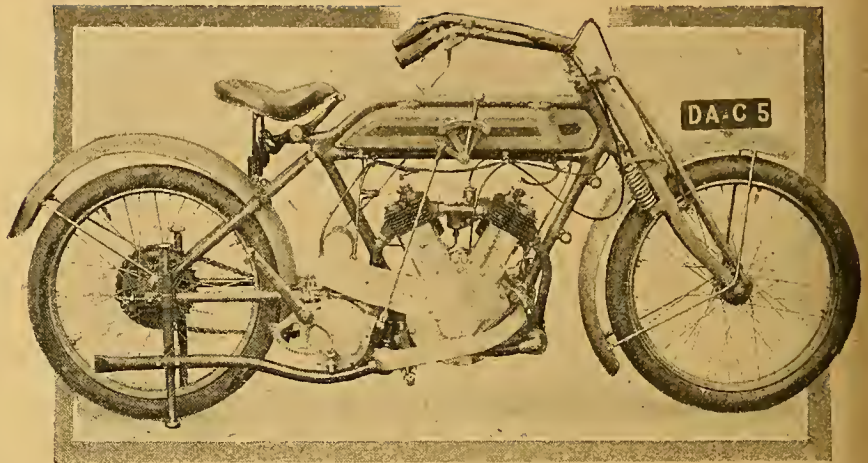
**The 6 h.p. Sidecar.**

Over 700 of these machines have been sold this year, and it is not surprising to hear that, owing to the great success of the combination, only minor detail improvements have been found necessary. A new 6 h.p. J.A.P. engine fitted with a decompressor and timing gear, which is said to be quite silent, will be used, also an enlarged petrol tank holding just over two gallons. This latter is readily detachable.

Three stands are now employed on the 1913 sidecar model, viz., rear and front stands for the bicycle and a sidecar Readers will remember that the Enfield sidecar is specially attached to the bicycle in such a manner that when attaching or detaching it is impossible to get the sidecar out of alignment. This sidecar has only been sold so far as a complete combination; next year the bicycle will be supplied as a solo mount.

At Redditch we inspected parts of an experimental vehicle which Mr. R. W. Smith has designed with a view to meeting the demand for cyclecars. The Enfield Co. are no new firm to cyclecar construction. As far back as 1899 the first Enfield quadricycle was exhibited at the Stanley Show, and some are still running. The firm still have one of these Quadricycles, fitted with a 2½ h.p. De Dion engine and two-speed gear, in good running order.

Although the company is not thinking of marketing the sociable seated Enfield Auto-Quad just at present, experiments are being made with a cyclecar, which will be running about in a few days, and we had the pleasure of examining the first of these machines. Mr. Smith is ever-willing to be ready for a public demand, and is making preparations to cope with it. The Auto-Quad will be made on motor cycle lines, and many



Valve side of next year's model 6 h.p. Clyno.

parts used on the sidecar model will be employed in its construction. The general lines on which experiments are being made are: Enfield 4 h.p. water-cooled twin V-engine in front under a bonnet; the Enfield two-speed gear with chains to a counter-shaft and balance gear carried in ball bearings on the frame, the final drive being by chain from each end of the balance geared axle to the road wheels.

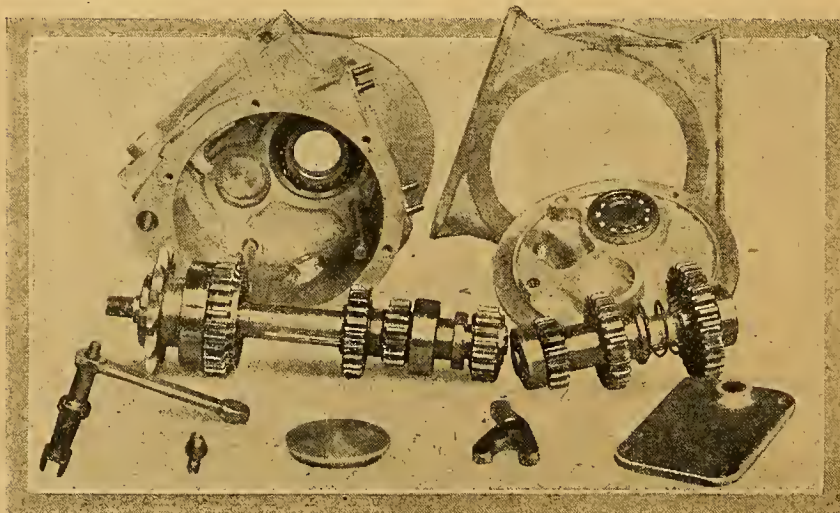
The total weight of the vehicle will not exceed 4 cwt. There is no intention of exhibiting the machine or taking orders for it until it is proved to be thoroughly reliable, and readers should not write concerning it until further announcements appear in *The Motor Cycle*.

**CLYNO.**

**A** CALL at the Clyno's new works at Wolverhampton proved to us that the firm have no intention of being left in the lurch during the coming season. The new model has, with the exception of the engine, been entirely redesigned by Mr. W. Comery, the company's consulting engineer. The only points which have been altered on

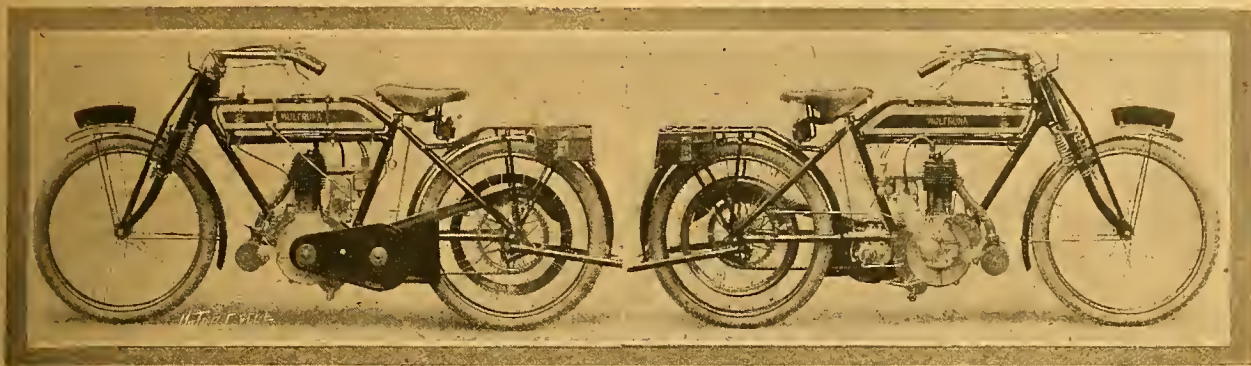
the 76×82 mm. twin engine are the valve ports, which are somewhat more free, and the release valve to the crank case, which has been made larger and exhausts through a pipe on to the front engine chain. The clutch two-speed gear has been superseded by a substantial counter-shaft three-speed in combination with a multiple plate clutch. A fourteen tooth sprocket is mounted on the engine-shaft, and driven by means of coil springs which absorb the shock; it is connected to a clutch member on the counter-shaft by a special ¾ in. Hans Renold chain. The clutch itself is a very neat piece of work, and has forty plates of alternate phosphor bronze and pen steel; these are enclosed and run in oil, and may be dismantled without disturbing the clutch spring. The operation is by foot on the near side, the pedal being connected to the actuating bar by a stout wire cable running over a pulley; a light spring keeps the bar from wearing the push rod when the clutch is engaged. The gear box is of the sliding type, and is carried by four bolts under a slotted platform which is built into the frame. To adjust the front chain, it is only necessary to slack the nuts, which are very accessible, and rotate a specially made screw which forces the gear box in the required direction without the possibility of it getting out of line. The gears are of the sliding type and provide ratios of 4½ to 1, 8½ to 1, and 14½ to 1, and are designed in an unusual manner, as the sliding portion consists of one gear wheel and one dog only. To obtain the high gear, the gear wheel is meshed with an internally cut wheel in the mainshaft constant wheel, and when this gear is in action the layshaft is disengaged, thereby saving a certain amount of friction. For the middle ratio, first the constant wheel is engaged, and then the sliding gear wheel meshes with a corresponding wheel on the layshaft (this by one motion of the striking gear). For the low speed the dog engages with a similar device. The gearshafts are mounted on ball bearings throughout. From the box, power is transmitted through a single ¾ in. chain to the rear wheel.

It is here to be mentioned that both chains and clutch gear are totally enclosed



The new Clyno three-speed gear dissected.





(1) Chain side and (2) valve side of the latest two-speed Wulfruna.

by roomy but neat aluminium cases which may be detached fairly easily, though this should be seldom necessary, as will be judged from the fact that the wheels are of the detachable type. These wheels are manufactured by the Clyno Co., under the patents of Mr. McGhie Lamb, whose device has been illustrated in this journal. It will be remembered that

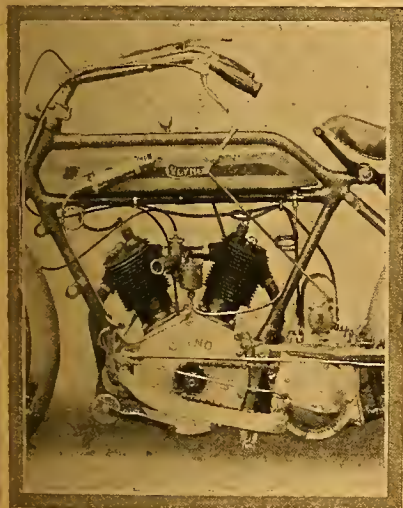
its adjustment is not affected when the front chain is tightened. As the new Clyno is essentially a sidecar machine, all sidecar lugs are made with the frame, as are the carrier lugs. This is a commendable point of design.

The tank is now carried on three lugs brazed to the lower bar, the central one forming a support for the gear striking quadrant. The oil tank will be circular and let into the main tank, the oil being fed by air pressure through a sight feed drip. Straight clutch and brake pedals will be used, so that they may be conveniently operated from the long metal footboards. The latter have holes drilled at their lowest point to allow water to escape. 26in. x 2½in. tyres are fitted as standard, but the guards and forks are constructed to take 3in. tyres, which the firm strongly recommend, and will fit, to order, as an extra. The front mud-guard has useful side wings, and the rear guard is detachable from the back stays. An automatic carburetter will supply the gas. Two levers will be placed on the handle-bar in the usual way, but the upper will control the magneto and the lower the

carburetter. The 1912 silencers will be replaced by aluminium castings, and a long pipe will extend to the rear. Unfortunately, the very latest model was not in its complete form, but we are able to illustrate the experimental vehicle, which embodies most of the alterations, also the unfinished parts. The sidecar chassis has been strengthened, and a new body is fitted, otherwise the alterations in this part are insignificant. An unusual feature, however, is the inclusion (as an extra) of an internal expanding brake for the sidecar wheel, to be actuated either by the driver or passenger.

The knuckle joints throughout the machine are neatly rounded off. This adds greatly to the general finish, and appearance.

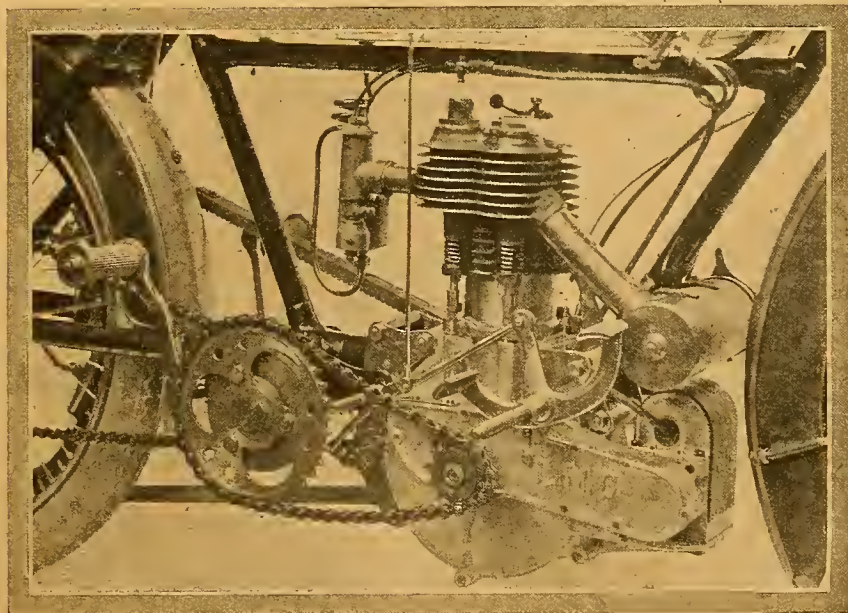
While in the works we inspected an interesting experimental frame (which will not be marketed), in which the frame tubes are used as oil reservoirs, leaving the main tank for petrol only. The advantages of this construction are, however, said to be counterbalanced by its disadvantages.



Clyno power unit, also showing the three-speed counter-shaft gear.

they run on ball bearings separate from the sprocket, and may be detached by merely withdrawing a central bolt. The chief alteration to the device as described is that the driving jaws are now on one side only, a distance piece being mounted on the off side. The wheels are quite interchangeable. The adjustment for the rear chain is on cycle lines, but the jaw on the near side, which takes the greater part of the driving strain, is carried right round so as to give extra strength. A powerful internal expanding brake is now fitted to the rear wheel and operated by a pedal on the off side.

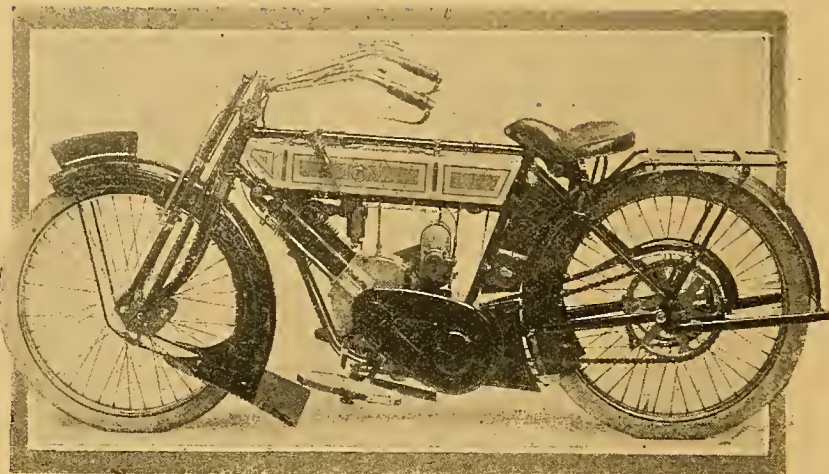
To suit the improved construction the frame has been considerably modified. A front wheel stand has been added. A dropped top tube is now standard, and the bottom bracket is a large casting which forms the rear part of the engine cradle, and also a carrier for the gear box and magneto. The kick starter has been brought to the off side and is now partially enclosed; it is mounted with the gear box so that



Chain side of the 1913 two-speed belt and chain-driven L.M.C., showing the kick starter.



## 1913 model P. &amp; M. Engine increased in capacity. Detail improvements.



Chain side of the 1913 P. and M. Observe the new drip feed lubricator and tank with rounded edges.

**A**T a casual glance it would be hard to say where these new models have been altered, the general design being the same; but a careful examination soon reveals that little things have been added here and there, all which go to make the P. and M. what the makers claim, namely, a clean, reliable, and comfortable mount combined with speed and quietness.

As the P. and M. is so much used for sidecar work, the makers decided to strengthen up the frame, to fit a somewhat stronger stem to the handle-bars, and to use an extra pair of girders to the spring forks, at the same time allowing a bigger movement to the fork blades; the back hub has also been strengthened at the point where the sprocket wheel is fixed, and the engine will now be 499 c.c. as against 465 c.c. in 1912, this increase in cubic capacity being obtained by enlarging the bore.

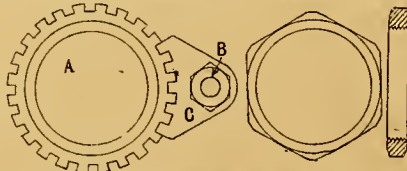
The mudguarding problem has received special attention, and channels are being fitted to prevent splash and to allow liquid to drip back to the road. The back mudguard has an extension to below the chain, and is of peculiar formation to allow the new pattern saddle, which is specially made for the P. and M. by Lycetts, to carry out its proper function without fear of any bumps or jars. The saddle itself is of the padded pan shape, being exceptionally comfortable. The saddle-pillar lug is now brazed to the frame in a lower position, and thereby an exceedingly low seat is obtained.

### Engine and Gear Details.

The only alteration to the well-tried two-speed gear is the substitution of a new type of four-point thrust bearing, made by Hoffmann, and for which the following advantages are claimed: still more foolproof, sweeter in action, and less attention to lubrication needed. The carburetter float chamber is deeper, and the drain tap, instead of being fitted to the tank, is now placed directly under the jet, thus, by removing the tap, the jet is also removed, and, if necessary, to clean the jet, all one need do is to insert a piece of fine wire through the tap and thus up the jet hole.

The valve cams have been redesigned and now open and close quicker, and

although the actual duration of the movement is the same, the valves remain open at the fullest extent for a longer period. The valve box is a trifle bigger and the valve gear bushes longer, the reason for this being to obtain an absolutely clean engine, no oil now being able to escape. The exhaust valve lifter fulcrum will be placed on the inlet valve



The gear locking device.

tappet guide, and thus a much bigger movement to the exhaust valve is obtained.

An entirely new silencer is fitted, and whilst giving exceptional silence it is said to cause no back pressure.

The old style lamp bracket is now discarded, and in its place special lugs are brazed to the forks, lamp fittings being easily obtained from the various makers.

The foot starter has been redesigned, a stronger sprocket and chain being fitted, the chain having an adjustment by means

of a drawbolt; there is also a special adjustment for the engaging block and a spring buffer to relieve the return of the starter. The back pedal brake lever is fitted in a more accessible position, and the gear changing lever is now placed further forward.

The driving chains remain the same, but the short chains are now practically enclosed, the cover fitting close up to the engine and is not cut away as before; an extension of the cover is carried over the top of the long chain.

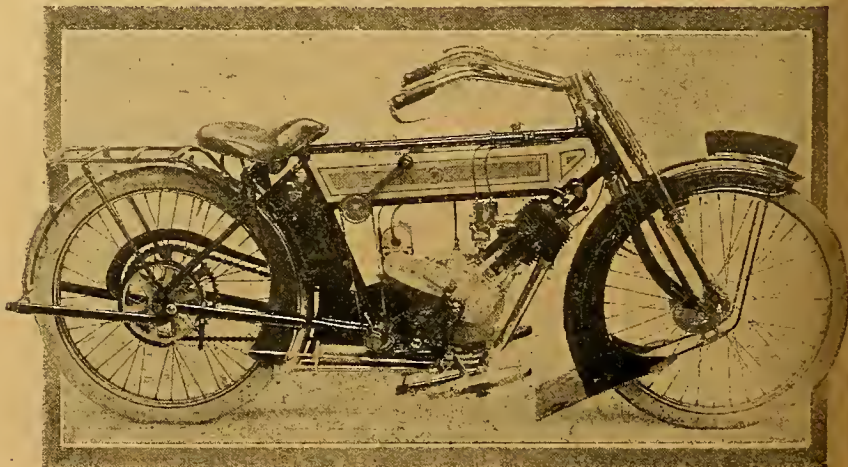
The eccentric shell whereby adjustments of the chains are obtained has been altered, and it is now an easy matter to make the adjustments to a nicety. The tank is much neater being cut away at the front and having rounded edges. Spring filler caps are fitted, and in place of the old style oil pump a Best and Lloyd semi-automatic drip feed pump is used. The tank is now supported on lugs brazed to the tube, leather washers being placed between the lugs and the tank.

### The New Locking Device.

In previous years when the chains on the P. and M. required adjusting it was necessary to loosen the eccentric by means of a hammer and chisel, make the adjustments, and obtain the help of another person to keep the adjustment correct while you again hammered up the locking ring. Now, however, a complete shell has been fitted into the bracket, and at one end of the shell is a toothed circle, fig. 1A, which is locked by means of the nut, fig. 2. When an adjustment is required all that is now necessary is to undo nut fig. 2, then nut B fig. 1, pull away the part C, and revolve A to position required, replace C, tighten up nut B, and finally locking nut fig. 2, and the adjustment is made with ease.

### 1913 P. and M. Sidecar.

Messrs. Phelon and Moore, Ltd., have designed a new style of chassis which is being built for them by Messrs. Mills-Fulford. The main points are lightness, strength, and comfort. Mud-guarding has received especial attention. The springing is by means of underslung cee springs, which make it exceptionally comfortable. The weight, with coach-built body, was given as about 76 lbs.



Valve side of 1913 P. and M. the engine of which is 85 x 88 mm.

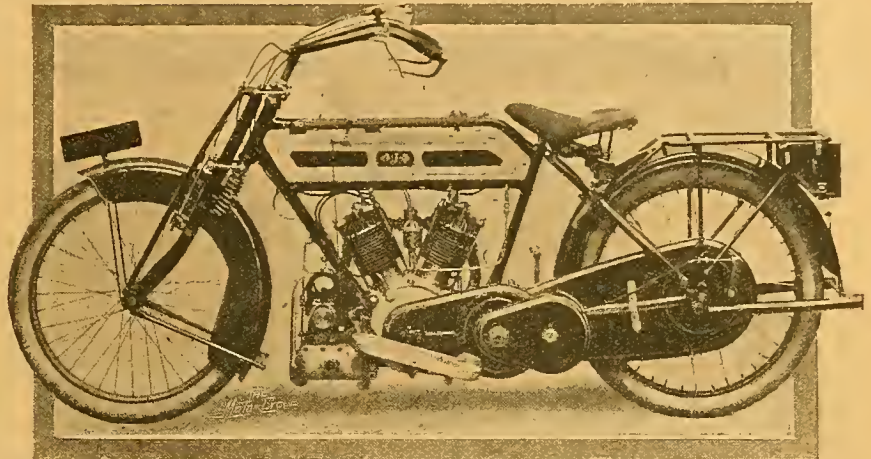


## A.J.S.

**M**ESSRS. A. J. Stevens and Co. will confine themselves to two models during next year—a 6 h.p. twin and a  $2\frac{3}{4}$  h.p. single. As the 6 h.p. model is almost a twin-cylinder replica of the  $2\frac{3}{4}$ , a description of it will suit both types.

The engine has a bore of 74 mm. and stroke of 81 mm., the cylinders being set at an angle of  $50^\circ$ .

A steel piston is now employed having two top rings and a broad spring steel ring to retain the gudgeon pin; this pin is hollow and is prevented from rotating in the piston boss by a set pin. Although the new piston is both of greater diameter and length than last year's, it is considerably lighter. Adjustable tappets are fitted as standard. To render the machine quieter a smaller valve lift is given, but the valves have been greatly enlarged so as to give an even freer port opening. Heavier flywheels are fitted so as to give very smooth running. A chain transmits the power to a clutch on the counter-shaft. This clutch is of the plate type, having cork insets. In the 1912 models it will be remembered that the sprocket



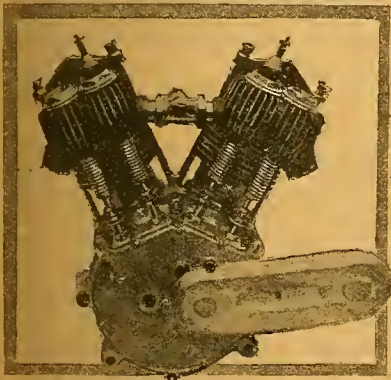
New 6 h.p. A.J.S. passenger model with three-speed bottom bracket gear and enclosed chains.

avoiding the unsightly mess which is only too common on counter-shaft gears.

The clutch is operated from the handlebar and the gears by a lever on the top tube. The gear ratios obtainable are  $4\frac{1}{2}$ ,  $7\frac{1}{2}$ , and  $12\frac{1}{2}$  to 1. A single chain drives the rear wheel, and both this and the engine chain are entirely and effectively guarded. Silence has been studied in an unusual degree, and to prevent any sound from the chains the cases are made of two layers of metal with packing interposed, and to dismantle either gear box, or clutch, or chains it is not necessary to remove the main portion of these cases. The kick starter is also enclosed, and its adjustment is not affected by the position of the gear box. A powerful internal expanding brake is fitted to the rear wheel, and is carefully mudproofed. Amac carburetters and chain-driven U.H. waterproof magnetos are used. Disc-adjusting hubs are now fitted.

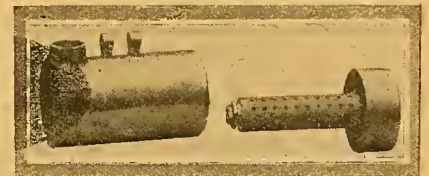
The tank, which as a capacity of two and a quarter gallons, has rounded edges, and is held from below, a glass-topped filler cap taking the place of the usual petrol gauge. Both front and rear wheel stands are supplied, and the tool bag is covered with sheet metal. All the carrier joints are welded. Comfortable footrests are supplied having good sized heel plates. All wheels are shod with  $650 \times 65$  mm. tyres, and a large aluminium silencer is placed under the magneto platform. The  $2\frac{3}{4}$  h.p. type, as has already been mentioned, is on the same lines as the twin, but has only one cylinder. On this model a slipping clutch is mounted on the

engine-shaft, and a neat spring compensating device is fitted to the gear control rod to avoid damage to the gears. Either a two or three-speed gear can be supplied with this model.



Valve side of the 6 h.p. 1913 A.J.S. engine, showing method of holding down cylinders.

carried the insets, and was gripped between two plates, but in the new model the number of plates has been doubled. The gear box provides three speeds and is a particularly neat piece of work; the sliding member consists of a single gear wheel and two dogs, and provides a direct drive on top. Both gearshafts are mounted on ball bearings, an oil catcher is fitted round the open end of the shaft which leads any leakage down an overflow pipe to the base of the box, thus



New design silencer on the 1913  $4\frac{1}{2}$  h.p. engine.

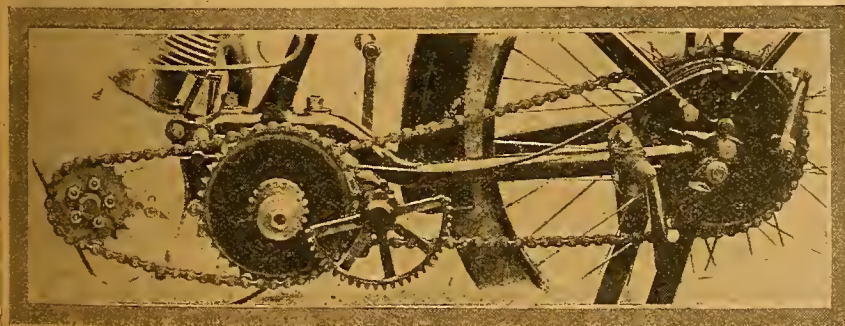
## L.M.C.

**T**HE following models will constitute the L.M.C. group for 1913:  $3\frac{1}{2}$  h.p. L.M.C., two-speed, chain and belt gear;  $5\frac{1}{2}$  h.p., Auto Varia gear; 4 h.p., Stumey-Archer gear; 4 h.p., Roc gear; and the  $3\frac{1}{2}$  h.p. T.T. model. The engine sizes are:  $3\frac{1}{2}$  h.p.,  $85 \times 88$  mm.; 4 h.p.,  $89 \times 92$  mm. Improvements are in detail only.

The L.M.C. chain and belt two-speed gear will be provided with a new control, and the chains, instead of being on opposite sides, will be both on one side, with the belt drive on the other.

Mr. W. J. Lloyd has designed a new half-compression device; the lever for operating this is attached to the top rail. New pattern side wing, mudguards have also been adopted.

The Auto-Varia gear has been improved by fitting the coil springs in holes bored in the solid part of the pulley instead of using a separate cage as this year. The front fork has been redesigned, and will have coil and recoil springs instead of the springs being in tension alone. The exhaust valve lifter, which is of the outside type, will be so fitted that the cylinder will be easily removable. A hinged rear mudguard will enable the rear tyre to be easily manipulated in the case of tyre repairs, and a kick starter is an addition. The tank has been improved by the fitting of larger filler caps. The new kick-starter and other details are shown in the illustration on page 1261.

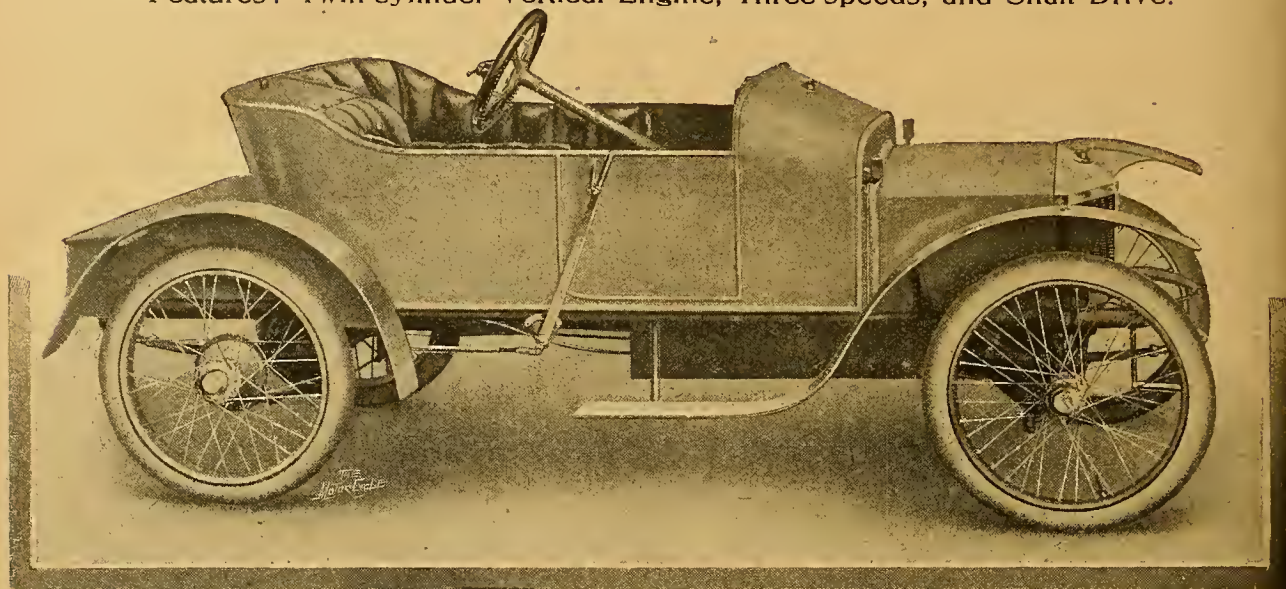


The A.J.S. method of transmission, showing kick starter and internal expanding brake on back wheel.



## NEW SWIFT CYCLECAR.

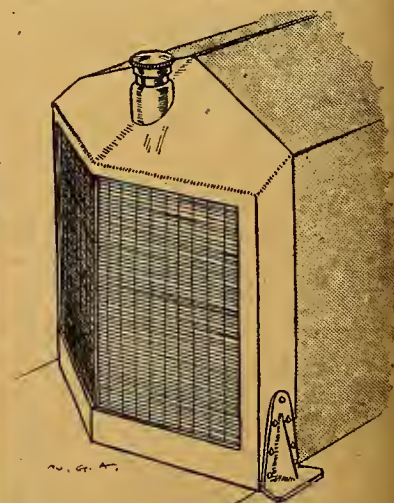
Features: Twin-cylinder Vertical Engine, Three-speeds, and Shaft Drive.



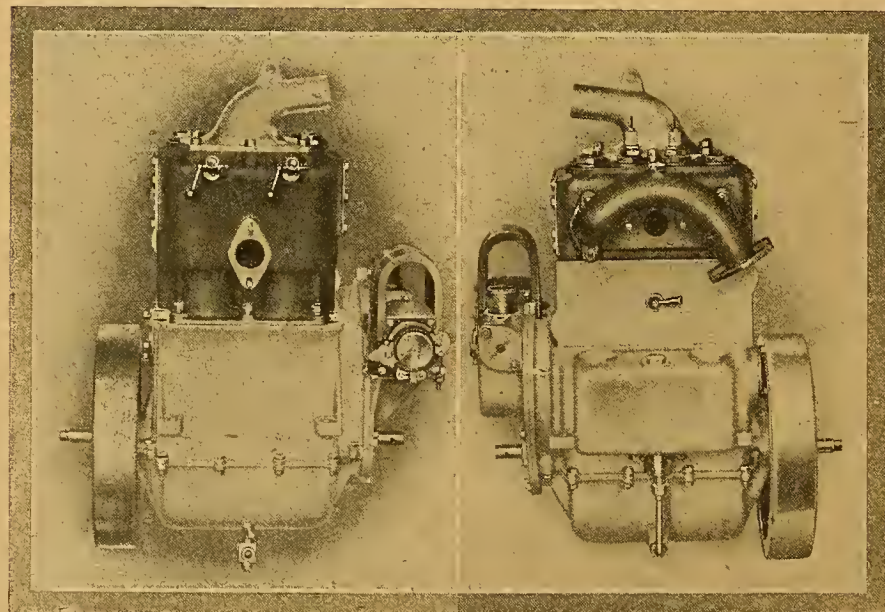
**A**N important addition to the numerous light two-seaters which will make their *début* at the Olympia Motor Cycle Show is the 6 h.p. Swift. We examined the machine at the company's works in Coventry the other day, and are now in a position to give the first illustrated description. Unknown to outsiders, the Swift Motor Co., Ltd., have been studying the cyclecar question for some time, and have carried out long-distance tests with an 8 h.p. air-cooled engine. The engine finally adopted, however, is a water-cooled twin-cylinder of 75 mm. bore and 110 mm. stroke, the cylinder casting being in one piece. The interchangeable valves are

arranged on one side and are enclosed by a readily removable aluminium cover. Adjustable tappets are provided, supported on hardened steel rollers. The camshaft is driven by a chain from the mainshaft, and a feature is the provision for chain stretch which is taken up automatically. The cranks are set at 180°, and the shaft and flywheel flange are forged in one solid piece of metal. Careful attention has been paid to the balance of the engine, weights bolted to the crank slabs ensuring smooth running. Thermosyphon cooling is relied upon in conjunction with a wedge shaped radiator of handsome design. The lubrication system is particularly praiseworthy. An oil

well, of a capacity of about three-fourths of a gallon, is cast in one piece with the aluminium crank chamber. By a syphoning process the lubricant in the troughs is kept at a constant level until the supply has run out, thus the worry of lubrication may be dismissed from one's mind for from three to 400 miles. A



The wedge-shaped radiator on the new Swift.



The side by side twin-cylinder water-cooled engine of the new Swift cyclecar.

single branch connects the two exhaust ports, the burnt gases being swept to the rear by a long pipe. Between the two, the inlet port is arranged with a passage formed in the casting for each cylinder. A Longuemare carburetter has been adopted, connected with which is an accelerator pedal and lever on the steering wheel.

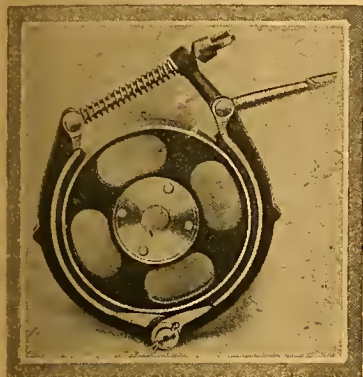
A high-tension magneto supplies the electrical current. It is driven by a worm and worm wheel at right angles to the crankshaft, and situated in front in an accessible position.



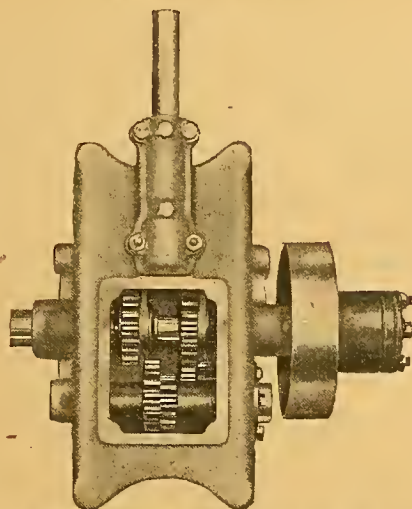
**Details of the Chassis.**

A leather-faced cone clutch of ample dimensions is used, and a refinement is the springs placed under the leather to ensure a smooth engagement.

An idea of the care and forethought in design may be gathered when we state that the gear box is cast in one piece in order to prevent oil leakages. The gears and gearshafts are cut from the solid, and the primary-shaft is castellated. The striking gear is enclosed,



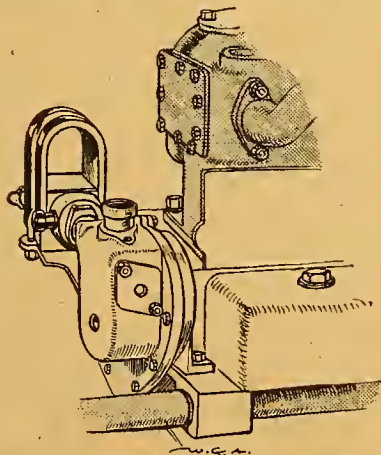
The large diameter foot brake, also showing the ready adjustment provided.



Swift gear box (cast in one piece) and operating rod, with foot brake and universal joint at the rear.

The frame is suspended on semi-elliptical springs front and rear, and the steering is by rack and pinion.

A low-built body with scuttle dash, and inside guards to the front wheels, give the Swift cyclecar a very smart appearance. The seating is novel. The passenger sits a little to the rear of the driver, not to allow a narrower frame,

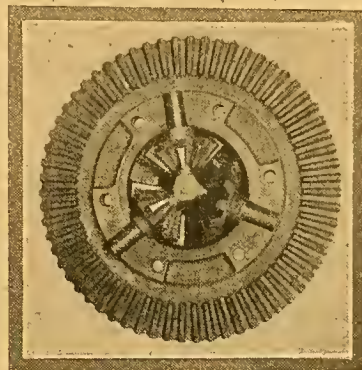


Enclosed worm drive for the magneto.

but to permit the driver to get out of the car without disturbing the passenger.

The weight of the chassis was given to us as approximately 5 cwts. The wheelbase is 7ft., and the track 3ft. 4in., whilst 650 x 65 mm. tyres are fitted.

Finally, we must pay a tribute to the high-class finish of the various parts. Swift workmanship is too well known to need more than a passing reference, but certain it is that the quality of work in the Swift cyclecar will compare with anything in the Olympia Show.



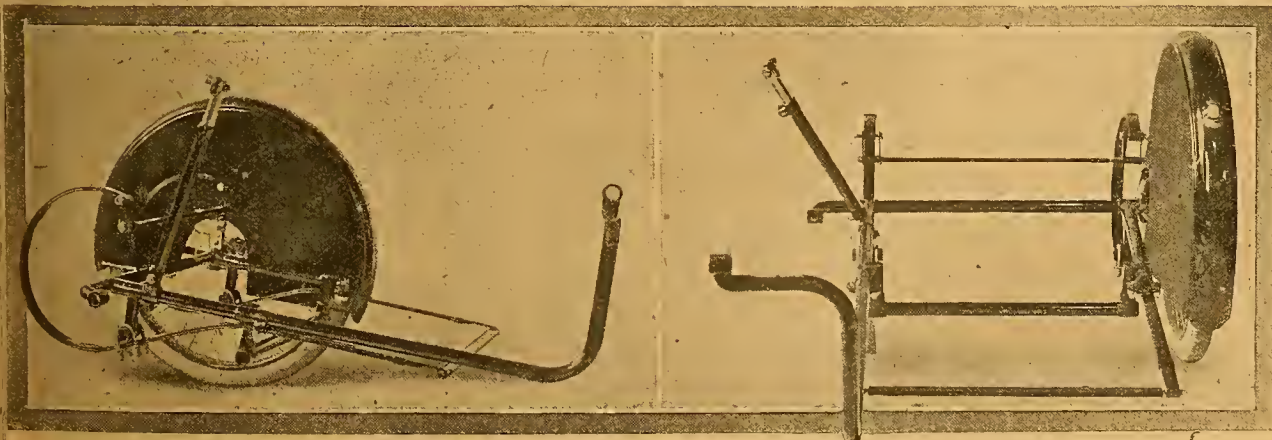
Three bevel pinions are used in the Swift differential gear as shown.

**SINGER.**

The Singer Company have not found it necessary to make any great alterations in design to their 1913 models. The only alterations to the 2½ and 3½ will be in such details as the strengthening of the carrier and the provision of neat platforms for carrying the pannier bags. The standard finish will be somewhat striking, and a new silencer will be used. This consists of two aluminium castings, an outer shell which forms an expansion chamber, and a perforated pipe into which the gases escape, finally issuing to the air through a series of small holes in the end plate. The construction is rendered clear from the photograph on page 1263. The 4½ h.p. model has undergone some slightly more important changes. The engine size has been increased to 89 mm. bore x 95 mm. stroke, giving a capacity of 591 c.c. This model will be fitted in future with an adjustable counter-shaft pulley of 6½ in. diameter.

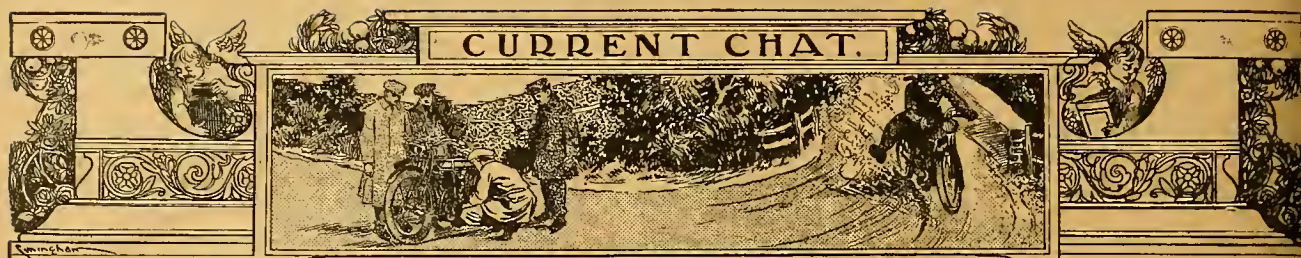
**Frame and Bodywork.**

The frame is of the tubular pattern, swept at the front to allow ample steering lock, the engine and gear box being mounted separately on an under-frame, whilst the brackets on which the engine and gear box are supported are machined after the brazing process in order to ensure perfect alignment.



Side and front views of the new P. and M. underslung sidecar attachment referred to on page 1262. The excellent mudguarding will be observed.





### TIME TO LIGHT LAMPS.

Nov. 7th	...	5.21 p.m.
" 9th	...	5.18 p.m.
" 11th	...	5.15 p.m.
" 13th	...	5.12 p.m.

### Next Week's Issue of "The Motor Cycle."

Our next issue—the first of three specially enlarged numbers in connection with the Olympia Show—will deal with passenger motor cycles of all kinds, viz., sidecars, runabouts, and cyclecars.

### Trades Benevolent Fund Annual Meeting.

The annual general meeting of the members of the above fund is fixed to take place on Tuesday, December 17th next.

### Saturday at Brooklands.

Next Saturday's closing meeting of the British Motor Cycle Racing Club has attracted a fine entry, and a number of newcomers will make their first appearance at Brooklands.

### Motosacoche 3½ h.p. Twin.

A new Motosacoche is to be marketed next year having a 3½ h.p. twin engine, the probable bore and stroke being 64×77 mm. This machine will be fitted with chain drive and a counter-shaft two-speed gear.

### Hill-climb in Yorkshire.

We are informed by Mr. C. Hurst, the hon. secretary of the Wakefield M.C.C., that no hill-climbing competitions will, in future, be allowed in the West Riding of Yorkshire in consequence of the Bradford M.C.C. holding a hill-climb in the district on Sunday, September 21st, and causing much annoyance to other users of the roads.

### Pride goes before a fall—in Cyc'ecar Shares.

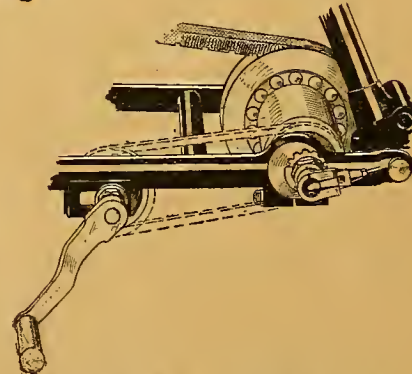
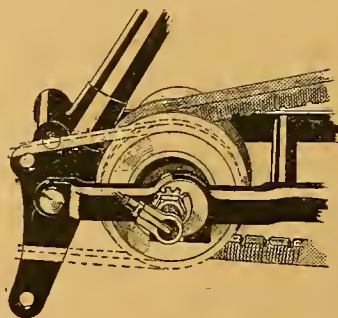
A prospective customer recently called upon the maker of a cyclecar; having examined the machine he accepted the offer of a trial run. The little vehicle performed well, taking a long hill easily on top gear, but as they were approaching a sharp corner, the tester said, "See me take this corner," whereupon he put up the helm (is that correct?); but the list to starboard was so pronounced that the vehicle turned turtle and became a complete wreck. Our friend did not see him take the corner—he was, as a matter of fact, "attitudinising for the benefit of the spectators," like Mark Twain's friends upon another occasion. The passengers, fortunately, were unhurt, but—need we finish? That prospective customer still rides a motor bicycle. "*Nimia fiducia calamitati solet esse*," as the Latin grammar hath it.

### Efficient Belt Guards as Standards.

Bradbury motor cycles in 1913 will have effective belt guards as a standard fitment. The guard completely encircles the belt, and is similar in design to the one adopted by Mr. Hugh Gibson for the last twelve months. The new guard will be finished to match the tank, and will first appear on the show models.

### A Novel Transmission.

An Armstrong hub as a counter-shaft gear has been adopted by Messrs. Hazlewood, Ltd. They have fixed a sprocket in the place of the usual belt rim, and drive through a chain from the engine, thence to the rear wheel by belt, a large sized V pulley being fixed to the hub shell. The motive power of the new model is a special 70×76 mm.



### A NEW MODEL ON ORIGINAL LINES.

Both sides of the Armstrong three-speed gear fitted into the counter-shaft of the new twin Hazlewood.

twin J.A.P. engine with extra large flywheels. The machine has undergone its road trials in fine style, and will be seen at the forthcoming exhibition. A very neat and simple adjustment is used for tightening the front chain. This form of drive brings up many interesting questions, for, although the gears are running at a higher speed, for that very reason they have less driving strain.

### SPECIAL FEATURES:

#### 1913 MODELS.

Described and illustrated.

AN OPEN LETTER TO THE TRADE.

THREE ON A CYCLECAR.

### Copper and Acetylene Generators.

Motor cyclists will do well to see that no copper tubes or nipples are used in connection with their acetylene lamps or generators, or, indeed, copper in any form, as this metal or its salts is capable of causing self-ignition. A short time ago the Rev. Colin King wrote to the Acetylene Publicity Co., Ltd., to enquire the cause of an explosion, or rather a puff of flame, which occurred in a generator of American manufacture. Investigation by Mr. Gatehouse, F.I.C., public analyst, showed that this flame was caused by copper salt contained in the green paint with which Mr. King had painted the interior of the generator. This caused the formation of acetylene of copper, which has the property of emitting fierce sparks on very slight provocation. No danger can accrue from brass, of which motor cycle generators are generally made, although brass itself is an alloy of copper.

### Speed Contest at Wimborne.

The Bournemouth and District M.C.C. held a speed contest on Wednesday, 23rd ult., in the grounds of Canford Park, Wimborne, some few miles from Bournemouth, and by kind permission of Lady Wimborne were fortunate in securing the entire use of one of the private drives, practically level and safe for all speeds. The racing was carried out on the "knock-out" principle. The course was three fifths of a mile. Results:

CLASS I. Machines up to 350 c.c.—1, Thompson, Portsmouth (2½ Douglas).

CLASS II. (members' event). Machines up to 500 c.c.—1, E. L. H. Erring (Triumph); 2, O. Goodman (B.S.A.).

CLASS III. (open). Machines up to 500 c.c.—1, Bleach, Portsmouth (¾ Bat-Jap); 2, Thompson, Portsmouth (2½ Douglas).

CLASS IIIA. Machines from 500 c.c. to 600 c.c.—1, Allen, Wimborne (¾ Scott).

CLASS IV. (members' only). Machines of any capacity.—1, Gooden-Chisholm (6 Enfield); 2, H. Goodland (Triumph).

CLASS V. (open). Machines of any capacity.—1, Gooden-Chisholm (6 Enfield); 2, Thompson, Portsmouth (2½ Douglas).

CLASS VI. Passenger machines up to 500 c.c.—1, Bleach (Bat-Jap); 2, O. Goodman (¾ B.S.A.).

CLASS VII. Passenger machines over 500 c.c.—1, A. G. H. Alford, Bournemouth (6 Enfield); 2, V. Jones, Bournemouth (Morgan Runabout).



**Tank Capacities in T.T. Machines.**

The following tank capacities have been decided upon for machines competing in the 1913 T.T. races: Junior, 1½ gallons; Senior, 1¾ gallons.

**The One Day Trial.**

The Auto Cycle Union, through its secretary, Mr. T. W. Loughborough, wishes to thank each one of the army of helpers who assisted during the One Day Trial in the Lake District.

**French Motor Cyclists' Federation.**

All important French clubs were represented at a meeting at Lyons held on the 1st, 2nd, and 3rd inst. The following cylinder dimensions were decided on for racing classes: 250, 350, and 500 c.c. 750 and 1,000 c.c. were adopted for touring classes only. It was decided that all sidecar machines must have a clutch in the 350, 500, 750, and 1,000 c.c. classes. Official timekeepers will be appointed. The majority were in agreement to form an independent motor cyclists' federation, only the Touring Moto Club de France declaring that if an independent body were formed it would not remain associated to the Federation of Motor Cyclists.

**A Marvellous Recovery.**

We are glad to hear that Mr. Frank Philipp, who recently met with a bad accident in Yorkshire, is making a marvellously rapid recovery and quite thinks he will be riding in the T.T. next year. Mr. A. A. Scott informs us that he thinks there is no reason to expect any permanent effects from the injuries he received. Incidentally Mr. Scott told us that his firm expects to be in the new works at Saltaire in about six weeks. A private testing track will be a feature of the new premises.

**Unbiased!**

The following is an extract from a letter recently received from a solicitor, the name and address of whom we withhold for obvious reasons. The extract reads: "It is very difficult to get the judge in this county court to give a verdict in favour of a motorist or motor cyclist as against other users of the road." Is it not scandalous that it should be necessary for a solicitor to point out that it is difficult to get a judge to give a verdict in favour of any one class of persons?

**Particulars of the Douglas Cyclecar.**

A fortnight ago we published the first illustration of the new Douglas cyclecar, which has undergone several hundred miles of road testing. Another model embodying many improvements is now in hand. An 8 h.p. twin-cylinder air-cooled horizontal engine is used to propel the machine, the front cylinder head facing forwards. We understand that a friction drive has been used with success on the first model, a shaft conveying the power to a differentially geared back axle. The horizontal engine allows a low bonnet, and a smart and race-looking vehicle is the result. It is not definitely known whether an air or water-cooled engine will be adopted, but in any case the motive power will be no experiment, for Messrs. Douglas Bros. have been making both types for months past.

FUTURE EVENTS	
Nov. 8-16.—	MOTOR CAR SHOW AT OLYMPIA.
" 25-30.—	MOTOR CYCLE SHOW AT OLYMPIA.
Dec. .. —	Auto Cycle Union Open Silencer Trial.
" 27-28.—	Motor Cycling Club Annual Winter Run.

**French Road Records.**

The bad state of the roads caused by incessant rain during the last few days prevented the A.C.C.F. running off the proposed road record trials last week. The committee has postponed the event until there is an improvement in the weather.

**Taxation of Business Motor Cycles.**

Still another case was heard at Saffron Walden Petty Sessions recently of a motor cyclist who claimed exemption from local taxation on account of his machine being used solely for the purpose of business. The usual arguments for and against were advanced by both sides, and no one in court appeared to be aware of the magistrate's decision in the case of the Skelmanthorpe motor cyclist, Taylor, reported in *The Motor Cycle* of August 15th last. Readers will remember that the A.C.U. Legal Department defended Mr. Taylor and lost the day. The magistrates found that Taylor's "motor cycle had not been constructed or adopted solely for the purpose of business," and fined him 10s. and costs. The A.C.U. was legally advised that there would be no probability of success if an appeal were lodged, and the matter was allowed to drop. The magistrates in Saffron Walden court decided to adjourn the case until November 6th (yesterday), and advised the defendant to obtain legal assistance, the maximum penalty being £20.

**Activity at Brooklands.**

Many record attempts are on the tapis before the show. We believe that a new comer to the track, a 2½ h.p. A.J.S., will shortly make its appearance on Brooklands. We have heard wonderful reports of its capabilities on the road.

The Singer Co., too, have produced a 350 c.c. single-cylinder machine, and Stanley will shortly make an attempt on the lightweight records up to one hour.

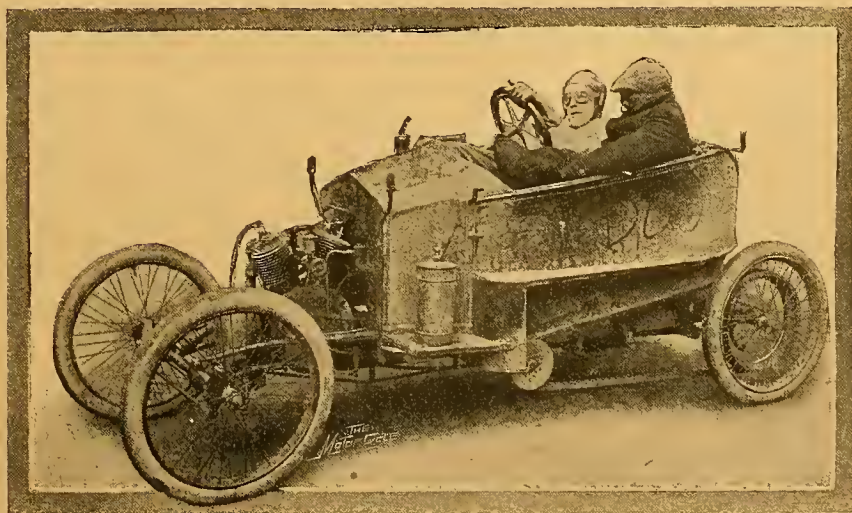
Rudge experts are still on the track tuning up and may attempt the hour record at any time.

**The Date of the 1913 T.T.**

A great many motor cyclists are grumbling because next year's T.T. Races will not, as has been recently announced, take place over the week-end. We are sorry to have to say that there is no doubt that motor cyclists have brought the alteration on themselves, as the number of complaints about motor cycles being ridden at speed through Douglas, and in the island generally, on the Sunday has urged the authorities to request the A.C.U. to hold the race in the middle of the week, so that Sunday does not intervene.

**Another New Club.**

About forty persons interested in the running of cyclecars, of whom about fifteen were actual owners of these vehicles, met together at the Holborn Restaurant on the evening of the 30th ult., with the object of founding a club to be known as "The Cyclecar Club." The Rev. E. P. Greenhill, was in the chair. In his opening speech, Mr. Greenhill stated that he considered the time had come when the cyclecar needed its own organisation to further its interests. It was finally decided that the club should be formed, and Mr. F. Thomas should be elected hon. secretary. About thirty-one of those present were elected to form a committee to elect the first committee of the club and to arrange details. These met together yesterday evening.

**A NINE HOURS' CYCLECAR RECORD ESTABLISHED.**

The 8 h.p. Duo which set up long distance cyclecar record last week with two passengers.

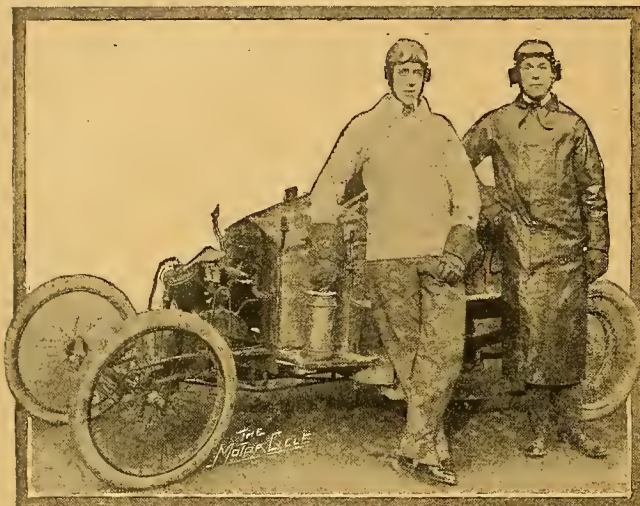


# NEW CYCLECAR RECORDS.

## A DUO AVERAGES 37 M.P.H. FOR NINE HOURS.

On the 30th ult. a Duocar, driven alternately by L. de Peyrecave and J. McArthur, established several new long-distance records. Heavy rain fell off and on during the day, there was a high wind, and, owing to the rain, the track was very wet for the first three hours and the last

two hours of the performance. New cyclecar records from three to nine hours were made, also the 150, 200, 250, and 300 miles records. Nothing occurred of any sort except a stop to change a sparking plug half an hour from the start, and the engine was not stopped once during the run. The performance is an extremely good one, as a passenger was carried throughout, and the car was quite a standard model fitted with a comfortable two-seated body. The Duocar, which is the product of Duocars, Ltd., 76, York Street, Westminster, was fitted with a twin-cylinder J.A.P. engine (85½ x 85 mm.), Lurquin carburetter, and Bosch magneto. The tyres were Stelastie, the belts Duo, and Pratt's motor spirit was used. Below is a table showing the total distance covered, average mileage per hour, and hourly distances. Asterisks, denote new records. A. V. Ebbelwhite took the times:



J. C. McArthur and L. F. De Peyrecave who drove alternately during the nine hours' record at Brooklands.

Hours.	Distance. mils. yds.	Average		Driver.
		m.p.h.	Distances. mils. yds.	
1	35 1,120	35.63	35 1,120	L. de Peyrecave
2	74 1,200	37.34	39 80	" "
*3	114 520	38.10	39 1,080	" "
*4	152 8	38.00	37 1,248	" "
*5	190 90	38.01	38 82	J. McArthur
*6	230 1,576	38.48	40 1,486	" "
*7	267 245	38.16	36 429	" "
*8	300 1,170	37.58	33 925	L. de Peyrecave
*9	333 824	37.05	32 1,414	" "
		h. m. s. m.p.h.		Driver.
*150 miles	...	3 56 44	38.02	L. de Peyrecave
*200 "	...	5 14 47½	38.12	J. C. McArthur
*250 "	...	6 30 43	38.39	" "
*300 "	...	7 58 40½	37.60	L. de Peyrecave

## MOTOR CYCLE TAXATION.

The Auto Cycle Union has appointed a powerful committee representative of all motor cycling interests in the country to impress upon the Government the iniquity of the proposed increase in taxation, and to formulate and adopt every means possible to prevent the said proposals becoming law, also to adopt counter proposals. The composition of the committee is as follows:

Chairman: The Hon. Arthur Stanley, M.P.

Vice-chairman: Mr. Otto Thomas.

Representing A.C.U.: Major Lindsay Lloyd, Major Nicoll, and Mr. Archibald Sharp, B.Sc.

Representing A.A. and M.U.: The Rev. F. W. Hassard-Short, Messrs. R. H. Head, and Chas. Jarrott.

Representing the Scottish A.C.U.: Messrs. Norman McMillan, John Gow, and J. S. Fulton.

Representing the Manufacturers' Union: Messrs. C. Vernon Pugh, T. H. Tessier, and W. H. Wells.

Secretary: Mr. T. W. Loughborough.

In the circular sent out by the A.C.U. appear copies of letters which have been published in *The Motor Cycle*,

several of the arguments that have been raised against increased taxation, and additional arguments. Accompanying the circular is a printed statement signed "T.W.L." This article is a criticism of the Treasury Committee's recommendation. In it the writer points out that it is an acknowledged fact that the R.A.C. rating rule as applied to cars of different ages is useless as a measure, comparative or actual of power, whereas the rating basis on cubic capacity gives results that are much nearer the truth. As evidence of this, he mentions the figures published in the *R.A.C. Journal* on the b.h.p. tests of twenty-seven different cars dating from 1903 onwards. He also points out that if the Committee had adopted or suggested a cubic capacity rating for motor cycles it would have involved admission of the unsuitability of the R.A.C. rating for motor cars, and says "three pages of the report are therefore devoted to clever pieces of special pleading in defence of the R.A.C. rating rule, and it is recommended with much plausibility that motor cycles be similarly rated for taxation purposes."

## AMATEUR MOTOR CYCLISTS' ASSOCIATION.

The committee met on Thursday evening last at the Auto Cycle Union premises, and with the assistance of Messrs. J. Simmons (Nottingham), H. Karlake, B. T. Rice-Pyle, A. M. Rundall, and J. Hopkins, the definition of an amateur for this Association was finally fixed as follows:

1.—Membership to the Amateur M.C.A. shall be open to those fulfilling the following definition of an amateur:

(a.) A member must not be connected directly or indirectly with the manufacture or sale of motor vehicles, or accessories, or parts, used in conjunction with them.

(b.) Must not be in the trade employ of anyone in connection with the above, or receive any payment in money, goods, or other assistance for riding, other than prizes.

(c.) Must not receive what is, in the opinion of the committee, advantageous terms in the purchase of motor vehicles, their parts, or accessories.

The definition is not retrospective.

The membership fee has been fixed at the nominal sum of 5s. The promoters have decided to go ahead with the scheme. There will be a committee of management and three stewards appointed who will hear appeals which may arise in applying the definition to individual members. The Auto Cycle Union has been asked to nominate one of these stewards. Clubs who wish to adopt the A.M.C.A. definition and prospective members should communicate with Mr. C. C. Cooke, Rose Cottage, North Mymms, Hatfield.

Three special issues of "The Motor Cycle" will be published in connection with the Olympia Motor Cycle Show, dated Nov. 14th, 21st and 28th.



## CLUB NEWS.

## Motor Cycling Club.

A smoking concert will be held on the 19th inst. at the Crown Room, Holborn Restaurant, at 7.30., Mr. C. Jarrott in the chair. Members of the A.C.U. and all clubs are invited.

## Foleshill and North Warwickshire M.C.

The result of the recent reliability trial was as follows: 1. A. Broad (3½ Triumph); 2. F. Rollason (3½ Ariel); 3. F. Miles (6 Rex-Jap and sidecar); 4. J. W. Barfield (3½ Triumph). The route was 105 miles, and included four ascents of Edge Hill and Sunrising. It was raining most of the time, and although the first, second, and fourth rode single-gear machines they did not fail on hills.

The club will hold their first annual dinner and smoking concert at the General Wolfe Hotel on the 19th inst.

## Lincolnshire A.C. (Motor Cycle Section).

A petrol consumption trial will be held on Saturday next, the 9th inst., starting from top of Cross Cliff Hill, Lincoln. Petrol tanks will be emptied, and one-half gallon of petrol served out to each rider. The course will be to Sleaford, *via* Leadenham, returning to starting point by the Sleaford Road, past Dunstan Pillar. Distance, 35½ miles. Maximum time allowed for the run, two hours. Formula (highest to win):

Weight of rider and machine × Distance × C.C. Factor.

Petrol in ounces

## Bristol M.C.C.

The last trial of the season (for amateurs only) was held on the 2nd inst., in beautiful weather, over a very hilly course of about 18½ miles, which had to be covered twice. Seventeen entries were received; there were fourteen starters. Weston Lane, near Bath, had to be ascended twice. Results: 1. F. C. Wasley (2½ Douglas, two-speed), error 30s., wins Humber Cup; 2. H. Hutchinson (3½ Rudge), 43s.; 3. A. G. Barr (3½ Bradbury, N.S.U. gear), 116s. These three were the only finishers, all failed on Weston Lane except Kellar, Synnes, and Clement.

## Bradford M.C.C.

Result of reliability trial to Morecambe and back, October 19th. 1. C. Hart (3½ Rudge); 2. P. Shaw (P. and M.); 3. C. Green (3½ P. and M.). Other riders who finished the full course were: F. Wild (2½ A.J.S.), F. Hodgson (3½ Bradbury and sc.), F. Haswell (3½ Bradbury and sc.), F. L. Harrison (5 A.J.S. and sc.), A. Grimshaw (6 Clyno and sc.), and N. Jagger (3½ Bradbury). F. Atkinson (3½ Bradbury and sc.) ran into a tree near Lancaster and was put out of the running. Result of speed trials held October 26th. These trials were held in two classes, solo and sidecar, with a total of twenty-three entries. Result of solo class: 1. Stanley Croft (T.T. Triumph), winner of the W. Biggs cup and gold medal; 2. F. Wild (2½ A.J.S.), silver medal; 3. Joe Laycock (T.T. Bradbury), bronze medal. Result of sidecar class: 1. W. R. Lake (8 Chater-Lea), winner of the Triumph cup and gold medal; 2. C. Hart (3½ Rudge), silver medal; 3. A. Grimshaw (6 Clyno), bronze medal.

## Birmingham M.C.C.

The club billiard room was opened on the 1st inst. There was a capital attendance, and the scheme, which is to have a private billiard and card room at the Grand Hotel every Friday night during the winter season, seems an assured success. On the 2nd inst., the annual autumn reliability trials were commenced. There were fifteen entries, and all but two completed the course. At the end of the run the competitors joined the members of the South Birmingham M.C.C. at a smoking concert at Hockley Heath.

## Walthamstow M.C.

A competition was held on the 3rd inst. over a very hilly course in Essex, for prizes kindly presented by Messrs. Godfrey and Applebee. Competitors were credited with 100 marks at the start, ten being deducted for every stop on a hill and five for any other cause (traffic excepted). The severe gradients and sharp corners called for tricky driving by the single gear brigade. All three winning machines were fitted with speed gears. There were thirteen starters—seven failed on hills and six made non-stops. Results:

Rider and machine.	Time error.
1. G. West (5 A.C. tricar) ... ..	7½s. slow
2. W. S. Low (3½ Scott) ... ..	11s. slow
3. J. Beal (3½ N.S.U.) ... ..	15s. slow

## Motor Cycle Union of Ireland (Ulster Centre).

The first winter reliability run of the season was held on Saturday, starting at Fortwilliam Park, Belfast, and including in the course Larne, Ballymena, Ballycastle, Cushendall, and Carnlough, giving a total mileage of 133½ miles. For the event, the Triumph Cup (to be won twice in succession) and an accompanying prize were offered for the winner, and the second prize was the Rudge-Whitworth Cup.

The start took place in a heavy mist, which as the day advanced developed into a regular downpour, whilst the wind blew with hurricane force, and the plight of the riders when traversing the Ballycastle mountains and on the open coast road with the waves breaking over was terrible. Sidecars, with the exception of W. J. Chambers (3½ B.S.A.) found the task so difficult that they failed to finish, and the latter would have been well amongst the prizes if he had not experienced magneto troubles through the wet. J. Stewart (2½ Douglas) also had magneto troubles, and lost three marks through being delayed on that account. T. Moles (3½ Triumph) gained full marks throughout, and was closest to schedule at the secret checks. He inadvertently ran through a secret check, and withdrew his claim to the prizes, receiving for his sportsmanlike action the subsequent thanks of the committee. Result:

	Marks at open controls.	Variation from schedule at secret checks.
*1. W. Dowse (3½ Dot) ... ..	60	2m. 32s.
†2. G. Dowse (3½ Dot) ... ..	60	3m. 48s.
3. S. Pyper (4½ Dot) ... ..	60	5m. 32s.

\*Triumph Cup and prize: †Rudge-Whitworth Cup.



SATURDAY'S HILL-CLIMB OF THE OXFORD UNIVERSITY M.C.C.  
On the starting line. W. L. Openshaw (8 Zenith) starting in the sidecar class.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### Surface on Kirkstone Pass.

Sir,—I have read with interest your representative's remarks on the above in the One Day Autumn Trial.

Does he expect to see a steam roller there?

If your representative will inspect the thick "mud and stones" in a month's time, or less, he will find a very smooth surface. The reason for this is, what your representative describes as "mud" is a natural cement in which to bed the stones. There is no steam roller in this county that could roll the steep gradients of Kirkstone. These roads would be in much worse condition, considering the heavy rainfall and summer traffic, if it were not for this tenacious marl, which is found half-way up the pass. E.H.P.

#### Date of the T.T. Races.

Sir,—I notice your correspondent "Week-end" invites readers' opinions on the date fixed for the 1913 T.T. Race. I myself, with many others, think that it would be much better held the same as this year, and not in the middle of the week as arranged. A large party of us went over to the island this year, and we must admit we had the time of our lives. Had the race been held in the middle of the week, we should certainly have been unable to attend. Therefore I agree with your correspondent, and think it would be far better that the race should be held at a week-end, at least from the spectators' point of view.

AN INTERESTED SPECTATOR.

Sir,—I notice a letter in *The Motor Cycle* re date of 1913 T.T. Races, and notice that it is proposed to hold same on June 4th and 6th. Well, if this date is fixed, I am afraid it will prevent hundreds of people from attending the races in the I.O.M., as they would like to do—I mean people connected with "farming operations"—for the reason that, during the early part of June, hay-making is in full swing, and therefore farmers could not get away. Being an enthusiastic mechanic-farmer myself, I thought of entering the race myself next year. If it is held in July I probably shall, if in June it will be quite impossible, and I know at least a dozen other fellows just round here who are situated the same as myself. I therefore trust your valuable paper will make an effort to change the date from June to July, as was the date this year. F. K. PORTWAY.

[As regards the days selected for the 1913 T.T., mid-week is recommended by the Isle of Man authorities in deference to the wishes of Manx people to avoid Sunday riding.—Ed.]

#### Tyre Bursts on Three-wheelers and Others.

Sir,—A.C., Ltd., are making a sporting effort at Brooklands to convince the gain-sayers that "what will happen to a three-wheeled cyclecar if the back tyre bursts" is nothing. Your correspondent Mr. Lambert (*The Motor Cycle*, October 31st) has already proved it in the case of a Morgan. Personally, though I have driven our cars probably 30,000 miles, including all the chief reliability trials, I have never had experience of the effect of a back tyre burst, which, perhaps, goes to disprove these complaints of excessive strain on the back tyre of a three-wheeler. But, in theory, I cannot imagine any reason why the bursting of a back tyre, in the case of a three-wheeler, should be more disastrous than in the case of a four-wheeler. The chief danger of burst tyres lies in the fact that the collapse of the tyre suddenly decreases the size of the wheel on one side of the car and causes the car to swerve. But if the wheel is in the centre of the car this danger is diminished, not increased.

It is my conviction, from long experience with all kinds of cars, that the danger of a burst tyre is almost negligible except at excessive speed. Most frequently a tyre bursts because the car swerves or skids dangerously; very seldom does the car swerve or skid dangerously because the tyre bursts. H. F. S. MORGAN.

#### Inconsiderate Driving in Bedfordshire.

Sir,—As an ardent motorist, and one who has recently had occasion to motor (by cycle and car) upwards of 2,000 miles in the county of Bedford, it distressed me to read in a recent issue of complaints about motor cyclists in that county. Unfortunately, I know these complaints are only too well founded; but when I met with a serious collision there with stray cattle a few weeks ago I found the utmost consideration and assistance from the superintendents of the county and town police.

Here is a county which, as you say, has no police controls, and ten-mile limits are unknown. On several occasions I have found the police most courteous to us motorists. Surely it is most unfortunate that advantage should be taken of their courtesy and consideration towards us by a few careless individuals.

I hope, by referring again to this matter in your largely circulated journal, you will be able to awaken a little more practical appreciation, which is due from some of my motor cycling brothers.

EDMUND A. JORDAN.



SIX PASSENGERS UP SUNRISING HILL.

A P.M.C. Motette climbing Sunrising with six passengers. The engine is a new 8 h.p. V type water-cooled pattern, and the feat, which took place last week end, was witnessed by "The Motor Cycle."



**A Throttle Valve Suggestion.**

Sir,—The "straight through" type of carburettor appears to be much in evidence at present, but, in my opinion, the throttle valves are not perfect, as a straight through draught is permitted only at full, or nearly full, throttle. I suggest that an iris diaphragm, such as is placed under the stage of every high-class microscope, would make a most efficient valve, as it could be very easily worked, and the throttle opening would be concentric with the bore of the inlet pipe at all speeds.

PETONE.

**Military Motor Cycling.**

Sir,—Your contributor "Celeriter" is inaccurate in the information which he gives with regard to the Kent Cyclist Battalion. Eastbourne not being in the county of Kent, the Kent Cyclist Battalion obviously cannot have a company there. There is no longer a company at Chatham. The present companies are as follows: Tonbridge, Farnbridge Wells, Bromley, Beckenham, Maidstone, Canterbury and Ashford, Folkstone, and Ramsgate.

F. W. HASSARD-SHORT, CHAPLAIN,

Kent Cyclist Battalion.

"Celeriter" is at present abroad, and, unfortunately, we have no means of communicating with him.—Ed.]

**Reliability of Counter-shaft Gears.**

Sir,—I own a 3½ h.p. Bradbury, to which I have fitted a Bowden counter-shaft gear, and these work exceedingly well.

The 8in. pulley on the counter-shaft greatly lessens the strain on the belt. I am using a Dunlop belt which has not been shortened since the gear was first lined up and adjusted, and which has since travelled about 1,500 miles.

I do not experience any belt slip in wet weather, as happens with smaller pulleys. With the Bowden gear I can start my Bradbury engine with the back wheel touching the ground on a very cold and frosty day (after injecting a little petrol into the exhaust cap), and then, by gently pressing back the pedal operator, engage the low gear and engine will take up the loaded sidecar and myself on almost any gradient. The free engine is beautifully free when running down hills or when one wants to stop for traffic.

I am not connected in any way with the Bowden or Bradbury Companies; I am merely expressing my satisfaction with gear and bicycle.

B. J. B. MARSDEN.

**Liverpool A.C. Open Hill-climb.**

Sir,—As a competitor in the open hill-climb of the Liverpool Auto Cycle Club on October 19th, I feel the club deserves a special word of commendation for the excellent way in which the whole thing was carried out.

The fact that the entry was a record one did not interfere with every climb being run off during a few hours. The bookkeeping was thorough and undisputed.

There was no confusion—obviously due to the thoughtful arrangement by which a position was allotted to each competitor before the start, and also to the sending of the riders from the top of the hill to the bottom by a circular route, so that during the three hours' climb no motor cyclist descended the hill.

The weighing at the top of the hill directly a man finished his ride was the obvious logical method.

Taking it all round, the whole thing was well done and reflects great credit on the club, and particularly on the organising secretary, Mr. Phillpott.

Another point much appreciated was the printed complete list of times and results, which reached every competitor a few days after the climb, so that even the unsuccessful ones were able to compare their performances with other unsuccessful ones.

FRANK WHITWORTH.

**Cyclecars.**

Sir,—I think many of your correspondents, who are making an outcry against the over-development of the cyclecar, fail to realise that, at present, it is uncertain to what class of people the cyclecar will appeal most. I consider that, roughly speaking, there are three markets open to this type of vehicle.

Firstly, there are ex-motor cyclists who wish for something fast, or almost as fast, and as handy as the motor cycle, but who, for physical or business needs, require slightly more comfort and luggage capacity, or the chance of taking a good ride or so with a passenger. To these the racy modern seated Bedelia or Rollo type will appeal.

Secondly, there are those who cannot afford a car, but who do not like motor cycles. These are suited by the comfortable middle-weight cyclecar, as the A.C. or G.W.K., or, perhaps, by something more luxurious still, like a water-cooled Singer. Whatever they choose, a high-class cyclecar, with its comparative low cost of upkeep and good workmanship, is a much better investment than a shoddy cheap car with its higher upkeep and shorter life.

Finally, the Colonies will open out, I feel sure, into an eager market for the right kind of car. Very often we see accounts in your contemporaries of the state of the roads abroad, generally accompanied by photographs of disconsolate motorists being dragged out of sand by horses. If, therefore, a cyclecar was built in a sensible way, and by that I mean designed, or an existing design improved, by men who have had bitter experience of colonial roads, I feel certain that, until the roads had been immensely improved, the cyclecar would oust the heavy car.

No car can be pared down in weight much without sacrificing strength, whilst the smaller cyclecar cannot be strengthened without sacrificing lightness. I think, therefore, that over most roads, or tracks, as they really are, a cyclecar, such as a special Colonial Singer, would hold its own with the average car, by reason of its comparatively light weight, general handiness, and lower upkeep. I must, I suppose, add the usual disclaimer that I have no interest whatsoever in the trade, and must mention that any names in this letter are to be taken as representing types, rather than makes, therefore, being absolutely impartial, I sign myself

AN ADMIRER OF ALL.

**Motor Cycle Taxation.**

Sir,—Taxation on means of locomotion is an absurd anachronism, but the imposition of a toll (or road rent) on road users, proportionate to the expenditure that they occasion, is obviously just, and probably expedient. Leaving for special treatment those true road hogs, iron-tired locomotives, also heavy carts and cattle, we find that vehicles wear down roads in proportion, firstly, to their weight; and secondly, to their speed. Propelling power is a convenient measure of both. Thus we arrive at the following scheme of tolls on road users: (a.) Tolls on vehicles "not over 5 cwt.," man propelled (handcart or bicycle), 2s.; horse propelled, 5s. per horse; mechanically propelled, 5s. per horse-power. (b.) If over 5 cwt., 2s. for every cwt. over 5 cwt. in addition. Thus, for example: (a.) The toll on a bicycle or handcart, 2s.; milk cart (1 horse), 5s.; 2 h.p. motor cycle, 10s.; 6 h.p. motor cycle, £1 10s. (b.) The toll on an 8 h.p. cyclecar (weight 8 cwt.), £2 6s.; 40 h.p. bus, etc. (weight 50 cwt.), £14 10s.; 60 h.p. motor car (weight 35 cwt.), £18. It



A competitor ascending Red Bank, Grassmere, in the A.C.U. Autumn Trial.



may be urged that this scale penalises the use of high powered engines. Is this any real objection? Surely, in view not only of the tender surface and tortuous nature of our roads, but also of the state of public feeling, it is wise to discourage high speeds. Police traps and perjury are odious to all. Why not try the above plan, which seems fair all round? To break the suddenly advanced demand on owners of heavy and high-powered vehicles, the toll for two years might be limited to 50% of the increased amount payable. Thus an 8 h.p. motor cycle pays at present £1 and would pay £2 under the all-round scheme. For the next two years the amount of toll might fairly be fixed at £1 10s. What do readers of *The Motor Cycle* think? H.K.P.

Sir,—At your invitation, I should like to enter a strong protest against any increase in motor cycle taxation. The two signatures enclosed are not of motor cycle owners, but prospective owners. In my own case, I have been on the look out for a good second-hand 5 to 6 h.p. with sidecar to take out the wife, who is engaged in very trying work. I cannot very well afford a new machine, but I thought probably I might get a decent second-hand for between £30 and £40. However, with the suggested increase in taxation I shall be entirely ruled out, and, as a matter of fact, must let the prospect of becoming an owner stand in abeyance until I see what really is to happen. A more unjust proposal I do not remember ever having come across. To think that a £20 second-hand bicycle should be taxed to the same extent as a £300 or £400 car seems to me to be at least preposterous.

A NEW READER OF *THE MOTOR CYCLE*.

Sir,—I am one of those who consider the new proposals are right. I was a motor cyclist in 1901, though I have not owned one for the last two or three years, so that I am not opposed to motor cycles as such.

If, however, I own an 8 h.p. car, I consider it unfair that an owner of a motor cycle and sidecar, who does about twice my speed, and half my petrol consumption, and who makes a noise that rends the firmament, should only pay £1 while I pay three guineas. Really the owners of 8 h.p. machines have had it their own way long enough. Everyone who does not actually own a motor cycle, or is a prospective owner, testifies them, and why? Simply because so many motor cyclists make beasts of themselves by riding through towns with free exhausts and tearing round corners. The craze for high speeds among motor cyclists is babyish. It is, however, fostered by certain manufacturers, and to a certain extent by the press.

Motor cyclists have shown the public no mercy, and they need expect none for all their squealing. Most people who drive horses and carts, when they hear of the new taxes, will say, "And a jolly good thing too."

It's the penalty for being a public nuisance.

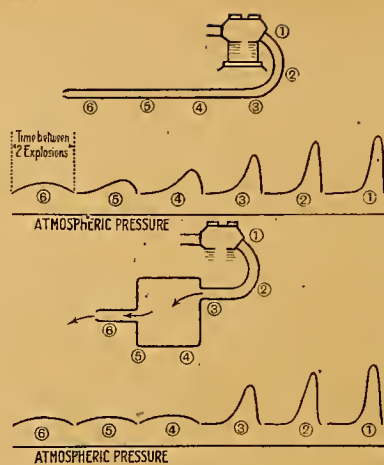
P. W. MORRICE.

### Silencers.

Sir,—I was greatly interested in Mr. Aston's articles on silencers. There is, however, one point I should like to question if he will allow me to do so. Mr. Aston makes the statement, I believe, that the larger the expansion chamber the more efficient will be the silencer from the theoretical point of view. Now, it seems to me that in adopting this advice one may run into a rather interesting source of trouble.

Assume that it is possible to determine the actual shape of the peaky wave of pressure produced in the silencer by the escaping charge. This, as Mr. Aston suggested, might be carried out by means of a delicate manometer or pressure gauge inserted through the silencer wall at the chosen spot. Further, assume that we can obtain a series of such "peak" diagrams all along the passage of the exhaust from exhaust valve to open air at equal intervals. We are now in a position to ascertain exactly where and to what extent the peaks of the pressure wave become damped down.

Applying our apparatus to a simple long exhaust pipe we find that as we go along from engine to atmosphere the peaks die down at a practically uniform rate, as indicated in fig. 1, where six points of observation are shown. It will be noticed that close to the exhaust valve the length of wave is about equal to the time taken to drive the gas out of the cylinder, that is, half a revolution, whereas if the pipe be long enough the length of wave may become equal



Figs. 1 and 2.

this, that unless the length of wave of the gas finally issuing into the air is equal to the time between two explosions, the wave is not damped as well as it might be, and the silencer is capable of improvement from this point of view.

Now, consider a silencer with a large expansion chamber and comparatively small inlet and exit pipes, as shown in fig. 2. The effect of the chamber is to do in one fell swoop so to speak, all that the long exhaust pipe took the whole of its length to do. The short length of pipe 1, 2, 3, does not do much to damp down the peaks, and the waves of gas are hurled in a dangerously sudden manner into the comparatively low pressure space in the expansion chamber, with the result that a more or less violent explosive sound will be generated within the silencer at this point. This, in spite of the fact that the gas at the final exit may be coming out as smoothly as possible.

The solution of this difficulty seems to be the use of an exhaust pipe of gradually increasing diameter which will provide a chamber of greater volume than the average long pipe, and at the same time do away with this objectionable point of sudden expansion of the gases. Such an arrangement might take the form of that shown in fig. 3.

G. LAMBERT.

### Chivalry of the Road.

Sir,—Having read the letter of "A.C.S." re the above in your issue of October 17th, I should like to add my testimony. On October 9th I was riding my motor cycle near Rudyard Lake, Staffs., when I had a breakdown through magneto chain jumping the teeth and upsetting the timing. I had only just bought my machine and could not readjust the magneto, and, to add to my difficulty, it was pitch dark, being about 7 p.m. I looked like having a four miles walk pushing my machine, when, luckily for me, a gentleman passed on his cycle and called out to see if I was all right. He stopped his machine and set my timing right and also shortened magneto chain, thus preventing a recurrence of this difficulty. J.H.R.

## NEXT THURSDAY!

... FIRST SHOW NUMBER ...

OF  
THE  
MOTOR CYCLE

With special references to Sidecars, Runabouts, and Cyclecars.

SPECIALLY ENLARGED, ONE PENNY AS USUAL.



## THE ARIEL RUNABOUT.

Features: Twin-cylinder Water-cooled Engine. Wedge-shaped Radiator. Two-speed Sliding Type Gear.

**A**N exceedingly interesting cyclecar, which is built on somewhat unusual lines, is the 8 h.p. Ariel, the chassis of which is illustrated herewith. The motive power is an 8 h.p. water-cooled Precision V type engine, having a bore and stroke of 85 x 85 mm., cooled by a wedge-shaped radiator, consisting of gilled

change-speed lever. The gears are of the ordinary sliding type. The counter-shaft brake, as well as that on the rear axle, is of the 8 h.p. Rover type, and of very simple construction, consisting merely of a band wrapped round the drum, one end of which is anchored to the cross member of the chassis and the other to a rod connected to the brake pedal.

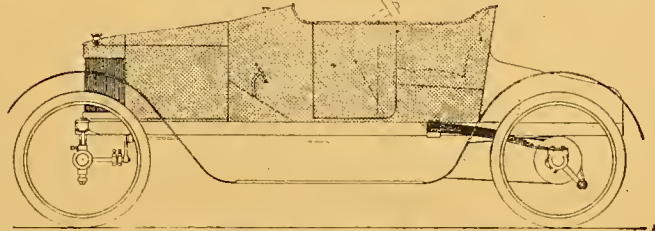
### Silent Chain Transmission.

The final drive from gear box to back axle is by means of a Coventry double roller chain. The drive is on the offside wheel only, but the near side wheel is provided with a friction device, consisting of a fibre disc on the outside of the hub, against which the hub is pressed by means of a powerful spring behind. This allows a certain amount of compensating action in turning corners. There is no axle casing, the axle itself revolving in large ball bearings, and behind it there is a tie rod serving to keep the bearings in line. The channel steel frame is somewhat peculiar in design, and its forward member serves as the front axle. As will be seen from the illustration, it is suspended on a large transverse spring, somewhat after the manner employed



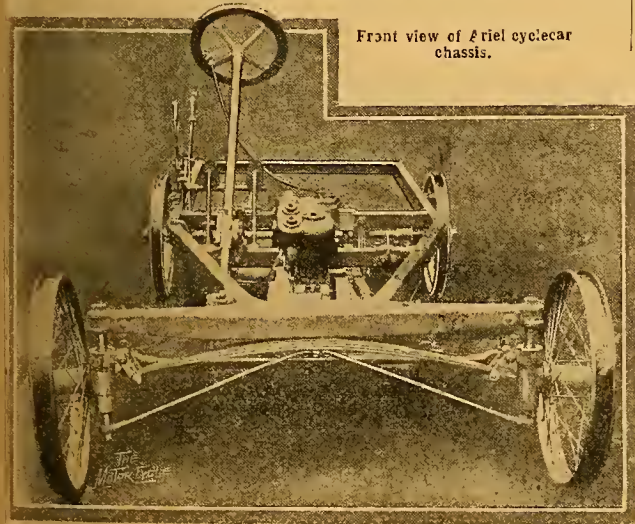
Pan of new Ariel cyclecar chassis.

tubes. The circulation is on the thermo syphon system. The valves are mechanically operated. Gas is supplied to the engine by means of a Lukin carburetter, a carburetter which has proved itself to be very successful on cyclecars. It will be noticed that the engine is bolted to the frame by means of special brackets attached to the forward ends of the frame and to the first cross member. On the engine-shaft is a leather-faced friction clutch, and from engine-shaft to the gear box the drive is by means of a Coventry silent chain. The gear box, which contains two speeds and reverse, is

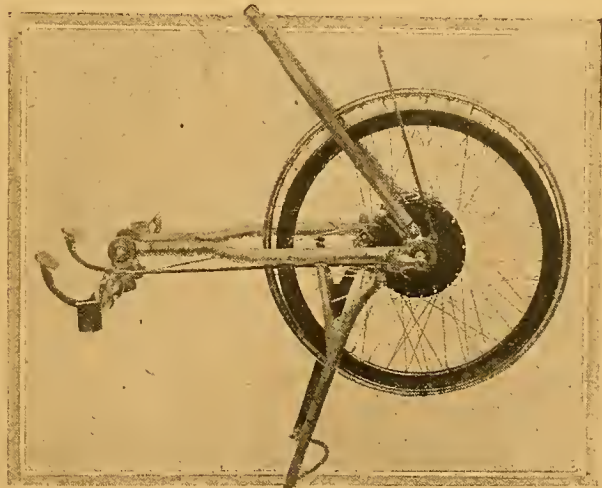


The Ariel cyclecar as it will appear when completed.

on Sizaire cars, while Lanchester springs are fitted to the rear wheels. The steering is particularly well carried out and is irreversible, being provided with a rack and pinion. The vehicle, which looks a thoroughly sound and satisfactory job, is the production of the Ariel and General Repairs Co., Ltd., Camberwell New Road, S.E. A comfortable torpedo type of body is provided.

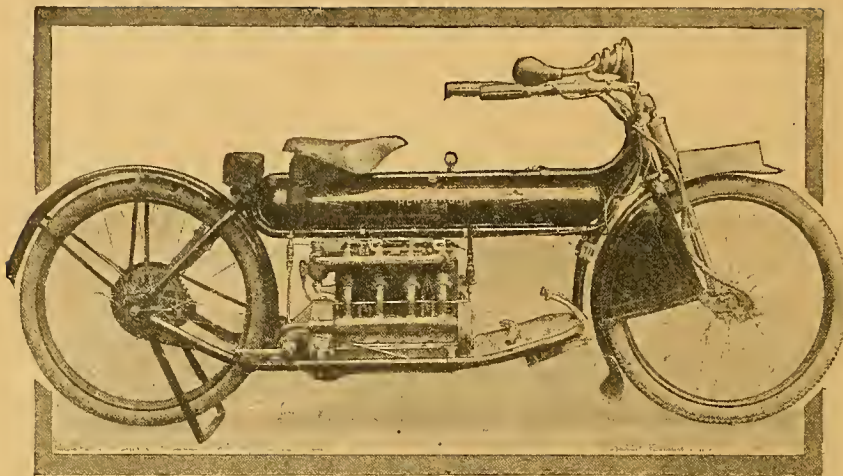


Front view of Ariel cyclecar chassis.



1913 Roe two-speed gear and free engine unit with rear fork attachment.





Valve side of the new Henderson.

## AN AMERICAN FOUR-CYLINDER MACHINE

**W**E recently inspected the four-cylinder Henderson motor bicycle, 65 x 77 mm., 7 h.p., which Messrs. Robertson's Motor Agency, 157, Great Portland Street, W., will handle during 1913.

The engine is somewhat of a departure from standard practice, while the frame is distinctly out of the ordinary, since the bottom tube is in duplicate, and serves to carry the four-cylinder engine. The latter has four separate vertical air-cooled cylinders, with exhaust valves of the usual type and overhead inlet valves, operated by rockers and tappets. The inlet valve springs are external. The ignition is by Bosch magneto, protected by a metal case, and the advance and retard are effected by rotating the armature, by means of a worm gear in relation to the driving shaft, thus enabling the ignition to be varied over a large range, and allowing the spark to be of the same quality throughout this range, since the maximum position is not affected.

The lubrication is by drip feed to the crank case, and thereafter by splash to the big ends, piston, timing gear and



Sectional plan of induction pipe on the four-cylinder Henderson.

transmission gearing. The crankshaft is supported at three points, and at its after end is a bevel driven cross-shaft, on one side of which is fixed the chain sprocket, and on the other the folding starting handle.

### Cooling the Oil.

The crank case is a decidedly neat casting, divided up into compartments, so as to allow an ample supply of oil into which the big ends may dip. The joints are machined carefully, and steps are taken to ensure them being absolutely oil-tight. An interesting feature is that

radiating flanges are cast on the bottom of the crank case so as to ensure the oil being kept at a reasonable temperature.

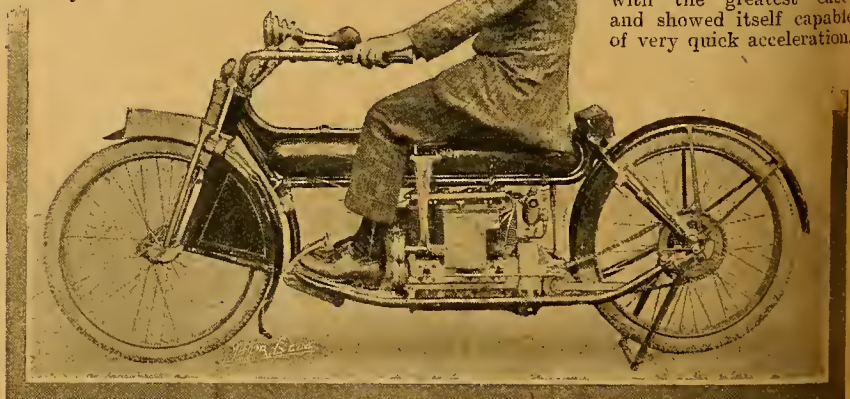
The camshaft is a one-piece drop forging. The frame, as mentioned before, is of unconventional design. It is immensely strong, and is constructed of very heavy gauge tubing.

The carburetter is the Schebler or Breeze, types well-known in the United



The solid crankshaft which has a central bearing.

States. The petrol pipe is in duplicate one end of the pipe reaching to the forward end of the tank, the other to the rear, so that a continuous flow of petrol is ensured either when going up or down steep gradients. The automatic carburetter is controlled by twisting grips which are rubber covered and possess a ratchet, allowing the grip to stay in whatever position it is put without being held by the rider.

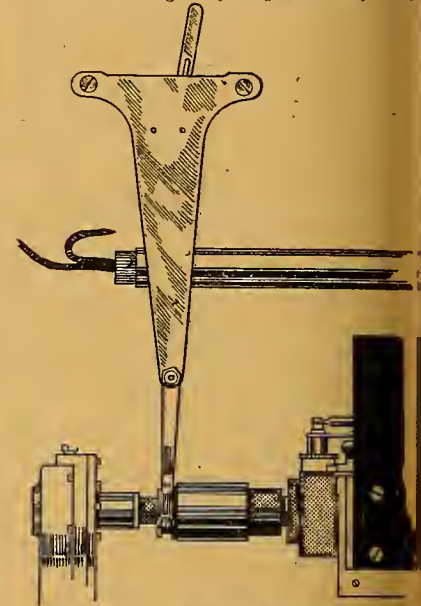


Chain side of the Henderson, an American four-cylinder machine.

### An Unusual Position.

The present model is fitted with a clutch of the multiple disc type. The somewhat curious appearance of the machine is due to the footboard forward of the engine. The rider is usually accustomed to sit with the engine between his feet, but in the case of the Henderson the rider's feet rest on the footboard well in front.

The machine is not ready for delivery, the model being only a preliminary one,



Operation of the magneto advance and retard.

and doubtless future models will be made to conform more closely to the wants of English riders.

Mr. Robertson Brown, of Messrs. Robertson's Motor Agency, allowed us to give the machine a short run in traffic, when we found it to be exceedingly smooth running and to possess an extraordinary amount of power. Although

fitted with a 4½ to 1 gear, Mr. Robertson Brown quickly attached a Mills-Fulford sidecar, and took us for a spin in the adjoining streets. The machine, though single-gear, started from standstill with the greatest ease, and showed itself capable of very quick acceleration.



# Lycett's new "LYSO" Belt

## WHAT IS IT?

—It is the *proved* World's Best Belt—of unique and exclusive design—made of pure Para Rubber and finest quality Cable, and is all that a perfect Belt should be.

## The genuine NEW "LYSO" Belt is marked "L. G. O."

in embossed letters on one transverse bar, position of which is about the middle of the Belt.

- It is skilfully manufactured.
- The Rubber will not crack nor grind away.
- The core is the strongest in the World—50% stronger than any other—and will not stretch nor pull out.
- By virtue of our Patent and Registered features embodied in "The New LYSO"—this Belt absorbs less engine power, is far more flexible, and is the fastest made.
- Here are a few of the host of successes on the new "LYSO"—part of the "proof":—

At BROOKLANDS: J. L. E. Emerson, on a Norton, won the Senior Tourist Trophy Race and broke the 100 miles, 2 hours, and 150 miles records. September 14th, 1912.

" " S. L. Bailey, on a Douglas, won the Junior Tourist Trophy Race and broke the 3 hours record. September 14th, 1912.

" " Championship Meeting. J. L. E. Emerson, on a Norton, won the Senior Hour Championship by over a lap, against all comers, thereby gaining "The Motor Cycle" Challenge Cup. October 12th, 1912.

" " F. W. Barnes, on a Zenith with sidecar, won the 1 Hour Championship Sidecar Race and broke the 1 hour, 50 miles, and 100 miles records. October 12th, 1912.

" " S. F. Garrett, on a Green-Precision with sidecar, broke the 1 hour, 2 hours, and 50 miles records, October 12th, 1912; and on October 12th 1912, he broke his previous day's records of 1 hour and 50 miles; Class C., 500 c.c., and secured third place in the Championship Sidecar Race. October 12th, 1912.

S. L. Bailey, on a Douglas, broke the flying 5 miles record. October 3rd, 1912.

IRISH "END-TO-END" RECORD: J. Stewart, on a 2½ h.p. Douglas, broke this record by 16 mins., covering 394 miles in 12h. 50m., thus beating the previous record, which was made on a 3½ h.p. machine. September 25th, 1912.

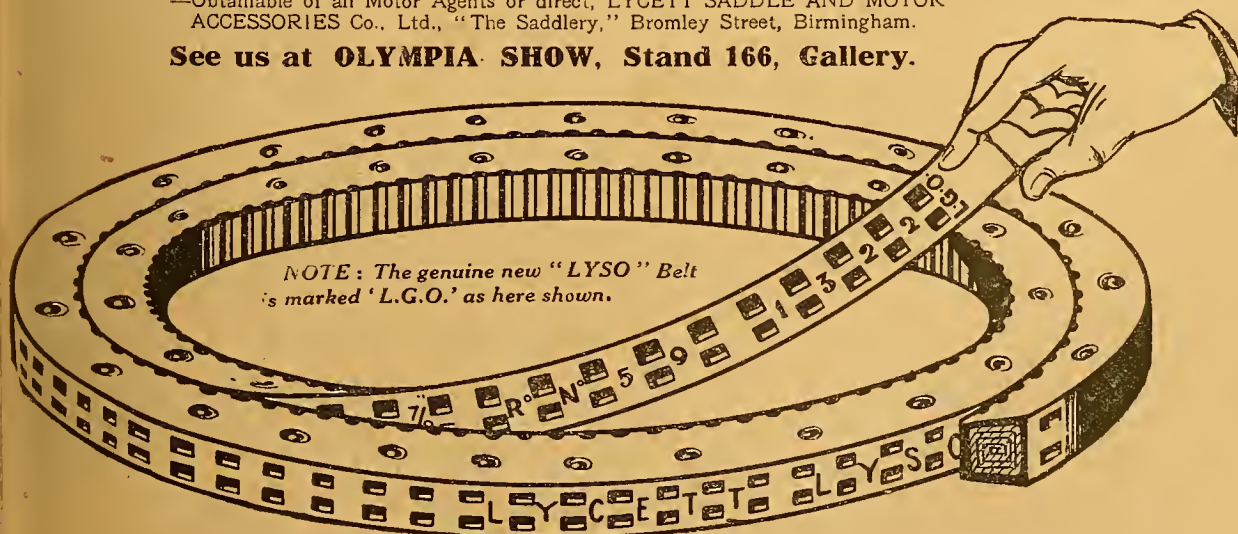
LIVERPOOL M.C. OPEN HILL-CLIMB, October 19th, 1912: F. W. Barnes FIRST in Class I. and Class X., and FIRST on time and formula in Class XII: J. J. Cookson FIRST in Class V.

And HARRY LONG ON HIS GREAT 20,000 MILES COAST RIDE IN 21 WEEKS on a Singer and sidecar with passenger averaged 3,600 miles per "LYSO" Belt.

## All used New "LYSO" Belts

—Obtainable of all Motor Agents or direct, LYCETT SADDLE AND MOTOR ACCESSORIES Co., Ltd., "The Saddlery," Bromley Street, Birmingham.

See us at OLYMPIA SHOW, Stand 166, Gallery.



R.H.S.

In answering this advertisement it is desirable to mention "The Motor Cycle."

B3T



# ANOTHER 100% SUCCESS

TO THE

*Ariel*

# RECORD

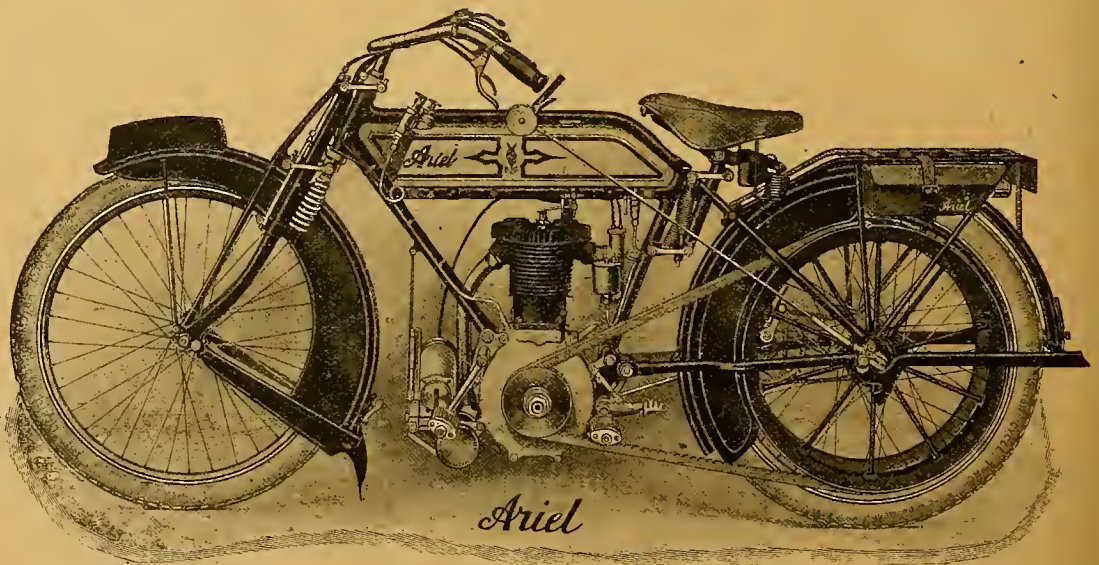
FOR RELIABILITY

IN THE

## A.C.U. AUTUMN TRIAL,

2 ARIELS ENTERED BOTH SECURING HIGHEST AWARD

Be sure you see the Ariel, Stand 91, Olympia.

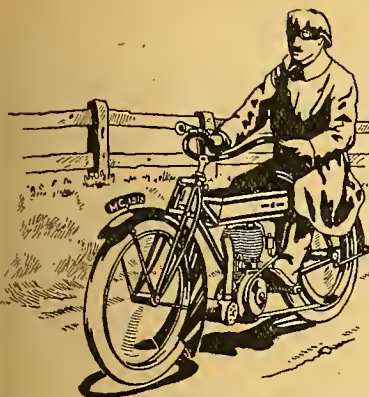


WRITE FOR ART CATALOGUE, DEPT. 2,

**ARIEL WORKS, Bournbrook, BIRMINGHAM.**

London Showrooms—FRISWELLS, ALBANY ST., N.W.





## The Buttertubs Pass (Yorkshire).

**T**O cross over the rugged moorland known as Abbotside Common—which is part of the Pennine Chain—from the village of Hawes in Wensleydale to Muker in Swaledale, motor cyclists and others proceed by that delightful road called Buttertubs, which is easier to surmount from the Hawes side than from Swaledale.

### Hardraw Scour.

Passing over the railway line at Hawes, bear to the left until a signpost directs to Muker. Here, however, one might deviate a little and visit Hardraw Scour, about half a mile away. It is a pretty little dell, with a fine waterfall, and well worth seeing, the best time being on a fine day after rain, for the best effects are then to be obtained. After spending a short time here a return should be made to the signpost, and turning to the left the climb commences.

### The Ascent.

The hill rises in steps with a few corners not really difficult, unless greasy. The hill starts well, but gradually increases in gradient and bad surface, until, after climbing for a mile or so, the engine getting nice and hot, a gate confronts the tourist, but, worst of all, immediately after the gate, the most severe gradient and surface has to be tackled from a difficult start. At the top a vast and glorious expanse of mountains and moorland looms up in the distance. It is, however, safer to allow the scenery to take care of itself until the traveller decides to stop and look around, for, although the road is fairly level, the surface is bad, and there is a sheer drop for the unwary on the left-hand. The road does not exactly run by a precipice, but once a start is made on this downward grade there is no chance of finishing safely. Further along the drop changes over to the right side, becoming at

the same time more precipitous and deeper. An attempt is now being made to save people from either walking or riding to destruction, but the attempt is somewhat feeble, only a species of railings being rigged up.

### The "Butter Tubs"

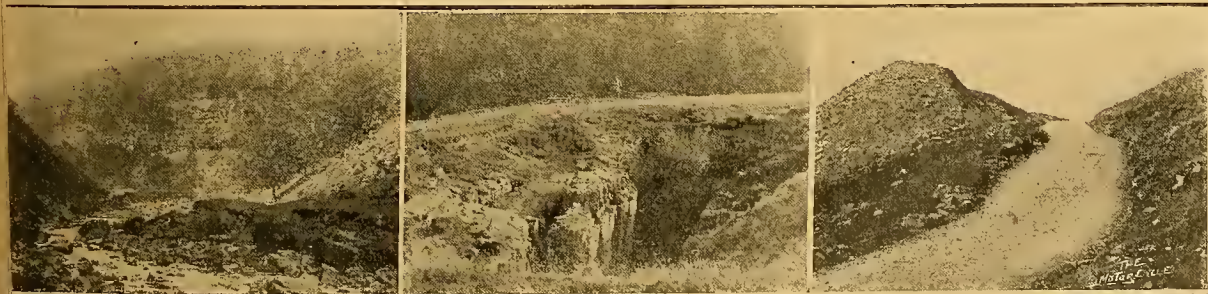
Just about where the drop turns from one side to the other a halt should be called, for at hand are the remarkable "Butter Tubs" from which the pass takes its name. These peculiarities of nature are deep fissures caused by the percolation of water, which has removed the soft limestone and left the hard stone in the form of basaltic columns upon which ferns and even trees manage to exist. Shortly after leaving the "Tubs" there is a short ascent, and from the road user's point of view this is practically the highest altitude, about 1,700 feet above sea level. The descent in Swaledale now commences, but it will be advisable to detail it as an ascent, for the descent presents no difficulties.

### The Swaledale Side.

Commencing practically at Thwaite the motorist has to encounter a long hard grind on bad surface, culminating in a turn to the left, and then a very severe gradient strewn completely over with loose stones. A right turn must next be negotiated, and then the hill is easy. A little further on a gate must be opened, but this should not cause any trouble. Leaving the pass near Thwaite, the run through Swaledale should on no account be missed, for passing along through Muker, Reeth, and on to Richmond, some of the finest scenery in Yorkshire can be enjoyed.

Either side of the pass should be climbed by any present day motor cycle, if geared fairly low because of the surface. A  $3\frac{1}{2}$  h.p. three-speeder with sidecar should be able to surmount the Hawes side of the pass without much difficulty.

H.W.F.



(1) A pretty view on Wensleydale, not far from Buttertubs Pass. (2) One of the fissures call "The Butter Tubs," from which the pass takes its name. The road is seen at the back, and immediately afterwards is a drop of some hundreds of feet. (3) The finish of the stiff climb on the Hawes side of the pass.



# Questions & Replies

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

## Remarkable Tappet Clearance.

I have an Ormonde with a Kelecom engine, built about 1900. (1.) In going up hills if the motor slows down should one retard the spark? (2.) Is 5 to 1 too high a gear for sidecar work with a 3 h.p. engine on moderate hills? I find that the engine will not take steepish hills of, say, 1 in 6 with a passenger. (3.) I have a small hole in my carburettor with a sliding cover made of tin. It is meant, I think, as an extra air inlet. Would opening this make any difference? (4.) Would fitting a first-class sparking plug give me more power? (5.) What should be the clearance of the valve tappets. The ones I have are adjustable, and I find that the engine will not start at all if the tappets have not got a clearance of nearly  $\frac{1}{4}$  in. This seems a great deal. If by dint of very hard work one does get the engine to start it will only go on a retarded spark. —S.M.

(1.) Yes; you should retard the spark if the engine labours on a hill. (2.)  $5\frac{1}{2}$  to 1 would be a more correct gear if you use a sidecar. You cannot expect the machine to take hills of 1 in 6 with a passenger unless a very low gear is fitted. (3.) Opening this might make a difference on hills, also closing it if the engine slows down at all. (4.) You would not find the fitting of a high quality plug would improve the power appreciably. (5.) The tappet clearance should be about the thickness of a visiting card. It is strange that the engine should not start if the tappets have not a clearance of  $\frac{1}{4}$  in.; such a clearance seems absolutely impossible. It is difficult in this case to see how the valves lift at all. We have, however, met with a similar case on the same make of engine. Evidently the engine should be retimed.

## Timing for Speed.

I should be pleased if you would assist me in trying to get more speed out of my 500 c.c. engine. Could you give me some speed timings to try? What has over-lap to do with speed? Would you explain the best method for tuning up a machine for fast work? Is a man in the trade who uses his machine for trade purposes bound to take out an Inland Revenue licence? If so, what cost? —B.E.

You are bound to pay the usual Local Taxation licence. Valve timings vary for different engines. Try exhaust valve opening with piston about 12 mm. from bottom and closing 1-2 mm. down. Inlet opening 2 mm. down and closing about 5 mm. up. This may necessitate new cams, and be hardly worth your while, as it may not prove the best setting for your engine.



Valve timing is largely a matter of experiment for each type of engine, and you would possibly have to make several cams before the best speed results were obtained. Keep your magneto platinum points clean and level and adjusted on the close side. Try stronger valve springs. A well-balanced engine is essential for speed work. Over-lap in valve timing is only advantageous on some engines, though in actual practice the valves of nearly all engines over-lap at high speeds owing to the inertia of the valves which prevents them following the cam contour, and thus they do not shut quite at the instant one would expect.

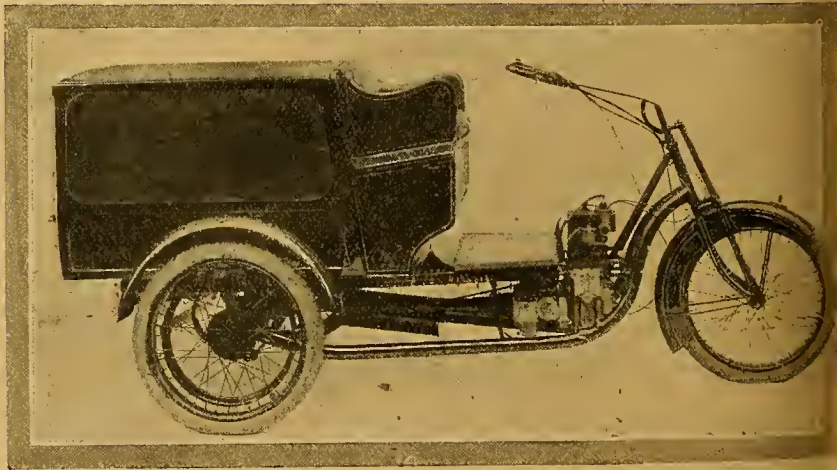
## Valve Timing and Magneto Timing.

(1.) What should be the position of the piston when the exhaust and inlet valves open and close (stroke  $\frac{3}{4}$  in.)? (2.) What should be the position of the piston when the magneto contact breaks, and where should the lever of the magneto be? (3.) The crank case leaks oil. Is shellac varnish smeared on the joints before putting together a preventive? (4.) I have run about 100 miles and carbonisation on the top of the piston has taken place in a large quantity. I have run with both levers

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

on the handle-bar nearly closed; that is, the secondary air has been completely turned off. The engine heats up and refuses to take hills. There is a Mixa fan in the inlet pipe, and the number of the jet is 32, and was recently supplied by Brown and Barlow, the makers of the carburettor. I have put a pressure gauge over the exhaust valve cap, and this vibrates up to 50-60 lbs. per square inch compression when the bicycle is pedalled round, and above 100 lbs. per square inch when the engine is run. What should the compression be? —A.H.

(1.) Set your exhaust valve to close when the piston is dead on the top of the stroke. The exhaust valve should begin to open when the piston is one-seventh of the stroke, i.e.,  $\frac{1}{7}$  in. from the bottom of the firing stroke. The inlet valve begins to open when the piston is  $\frac{1}{2}$  in. down from the suction stroke, and closes when the piston is commencing to rise on the firing stroke. (2.) You should time the magneto so that with the lever retarded the points should be just about to break when the piston is dead on the top of the stroke. (3.) To cure the crank case leaking of oil you might try a washer of brown paper soaked in boiled linseed oil; or, before putting it together, paint the joint with Coverol or Jointilac, sold by the accessory houses. (4.) The fault here, we should say, is in your driving, as if you drive with the air closed you tend to make the engine overheat and soot up. You might try removing the fan from the inlet pipe. A compression of about 60 lbs. is right. Do not attempt to use the gauge on a single-cylinder with engine running.



The Wall tricycle is becoming exceedingly popular as a trade vehicle



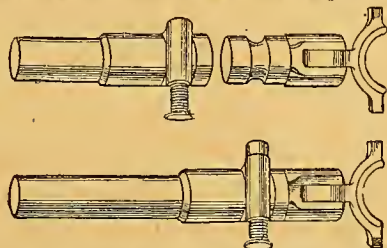
## Motor Cycle Insurance.

Is damage caused by sideslip (or anything else) covered by a motor insurance policy? I was riding close to the left hand kerb of a main road tram route: near kerb very dry, tram sets very greasy. A motor van came out of a left hand, little used, side street. I did not sound horn; nor did the van, according to myself and a voluntary witness. My speed was 5 m.p.h., van speed 10 m.p.h. To avoid being killed I had suddenly to swerve on to tram route but skidded on the lines. Result, a damaged belt rim that would not revolve between forks. I sent to my motor insurance company a claim form with particulars, but added, unless anything further developed, I should make no claim if it did not cause belt slip after straightening as well as I could. A new rim would cost 7s. and present loss of use of cycle, but I should lose 4s. bonus through making a claim at all this year. I think readers should be warned on this point in their policies. Copy of "accidental damage" clause in motor cycle insurance policy: "That the company shall indemnify the assured by repairing, or paying the cost of repairing, any damage caused by external accidental impact to any motor vehicle (including accessories, lamps, and tyres actually fitted to such motor vehicle) belonging to the assured and described in the schedule hereto, but only to the extent of the total sum of £30." Schedule referred to: 3½ h.p. 1910 Triumph, value £30, registered letter and number F 3808. I append the insurance company's reply: "We are obliged for your letter and also the claim form you sent in connection with some damage sustained to the belt rim of your motor cycle. We note the particulars you give, but, of course, in view of the fact that your machine had no actual impact this damage would not be covered by your policy. We see that in any case you, for the moment, make no claim, but we give you the above information in case something further develops in connection with the belt rim.—Yours faithfully, for the — Insurance Co. General Manager."

I should be grateful for an early reply, not that I am likely to press any claim, but I think the insurance company should be told my view of the case, as it appears to me a flagrant disclaimer of liability—and that from one of the principal insurance companies.—F 3808.

Our legal adviser writes as follows: "I have perused the letter from 'F 3808' enquiring whether damage caused by a sideslip is covered by an insurance policy containing the clause he sets out. I am assuming that there is no other clause in the policy affecting the matter, though it would be advisable to look carefully through the conditions, as there may be a clause directly excepting damage due to mechanical breakdown, bursting tyres, deslips, etc. There is also, in all probability, a clause providing that any dispute is to be referred to arbitration instead of being settled in the law courts. Failing such clauses, I consider that your correspondent could recover any damage sustained through sideslip in the particular circumstances. His claim would be much

stronger than in an ordinary case of sideslip, as it was caused through his endeavouring to avoid a collision with another motor vehicle, and the impact with the greasy tram route was therefore undoubtedly accidental. In all cases of sideslip there must be an external impact with the greasy surface, but the policy uses the words 'external accidental impact.' With regard to recovering on the ground that the impact is external, I think there can be no doubt as to this, nor can there be any doubt as to the sideslip being an impact. The insurance company would probably contend that a sideslip is not an accident, but, personally, I think they would not succeed in this. I cannot find any decided case dealing with the point precisely, but the meaning of the word 'accident' has been very fully gone into in recent years in connection with the workmen's compensation cases, and the leading case reached the House of Lords in 1903. In that decision, which dealt with the question of a workman rupturing himself by an act of over exertion in turning a wheel, Lord Macnaghten said that the expression



The Garrard Maxfield instantaneous sidecar coupling. The top illustration shows it open, and the bottom one closed.

'accident' is used in the popular and ordinary sense of the word as denoting an unlooked-for mishap or an untoward event which is not expected or designed. In the same case, Lord Lindley said that an accident meant any unintended or unexpected occurrence producing hurt or loss."

## Starting Difficulties.

(1.) The 3½ J.A.P. engine on my 1911 Zenith has taken to knocking very badly at slow speeds with spark advanced, and I find that both big and little ends are loose and really want rebushing. As I only had the big end rebushed after having run 2,200 miles, I do not want to go to the expense of having it done again so soon. Do you consider there is any real danger, if it be left alone, of the connecting rod or anything else breaking? (2.) Can you suggest any really good tip for starting a motor cycle (e.g., Zenith) which has to be pushed along on a cold early morning when the oil has got gummied up? I am often half an hour starting—injection of petrol, all mixtures, changing plugs, cleaning platinum points, etc., being often of no avail. It seems merely due to the lowness of the temperature. I have heard of a tip of taking the connection out of the magneto and injecting petrol right into the heart of the magneto.—H.S.M.

(1.) The bush should not have gone so quickly as this. We are afraid you must have it replaced, and we should recommend you to go to the extent of seeing

that it is properly fitted this time, and that oilways are cut so that it has every chance of getting sufficient lubrication. (2.) Take care to see that there are no leaks in the carburettor unions. You might try putting a cork in the fixed air inlet of the carburettor, with a small hole in it, so that you can restrict temporarily the air supply, removing the cork the moment the engine has fired. Do not attempt to use the tip you have mentioned as regards the magneto. Try a thinner oil in winter.

## READER'S REPLY.

## Mysterious Misfiring.

I have had the same trouble as "C.E.T." with my machine—a 1907 Triumph—on one occasion, and as I got completely over my fault, which may possibly be the same as "C.E.T.'s," I may, at all events, put him on the track. (1.) The lift of the exhaust valve was not sufficient. When going faster than about 20 m.p.h. there was not time for the burnt gases to escape, leaving a slight pressure behind at the moment the inlet valve opens, causing a slight throw-back through carburettor, and also a bad mixture which does not spark well. When the spark occurs a second time, the mixture being now clear and no pressure of spent gases, I get an explosion every other spark. (2.) As the speed increases the voltage of the current given out by the magneto rises. Now, suppose somewhere on the high tension circuit there was a point where the insulation resistance was not much more than the air gap at plug points. As the voltage rose this other gap would also be bridged and very much affect the sparking. My fault was worn insulation of the carbon brush holder. The magneto was sparking through to the frame at higher speeds. A little rubber composition insulation, applied, put the matter right.—G. A. Bishop.

"C.T.B.," Alford, Lincs., and others will receive replies to their queries if they send stamped addressed envelopes.

## EXPERIENCES WANTED.

"F.J.T." (Camden Town).—Mead motor cycle, reliability.

"C.W." (Portsmouth).—Roc two-speed gear. Consumption of 5 h.p. twin Roc.

"J.H.W." (Birmingham).—5 h.p. A.J.S., with and without sidecar.

"R.W.S." (New Southgate).—A.C. Sociable. Reliability, skidding, comfort, control, cleanliness of engine, and cooling.

"N.G.G." (Cambridge).—5-6 h.p. Clyno, with sidecar. Reliability and efficiency.

"Ajax" (Kent).—1912 6 h.p. Matchless-Jap. T.T. and touring models; six speeds and ordinary two speeds.

"C.R.W." (Brighton).—8 h.p. Williamson sidecar.

"W.R.H.C. (Nantwich).—Morgan run-about. Consumption and life of rear tyre.

"H.R.D." (Somerset).—Morgan run-about rear tyre wear and skidding propensities, reliability, and running costs.

"J.F.T." (Suffolk).—Binks two-jet carburettor on Matchless sidecar.

"C.C.C." (Dawlish).—3½ h.p. Ivy Precision.

"G.A." (Wimborne).—Crank case compression on Scott.

"T.H." (Normanton).—1911 3½ h.p. two-speed Humber with sidecar.



### Hoods for Cyclecars.

The Dulwich Hood and Screen Works inform us that the hood illustrated on page 1207, October 24th, can also be supplied for cyclecars.

### Lamps in the Colonies.

Samuel Hall and Sons, Wrottesley Street, Birmingham, inform us that they have arranged sole agencies in South Africa and New Zealand. They have also fixed up in three States in Australia and one State in India. Where arrangements have not been made the firm is open to hear from other importers.

### Lamp Manufacturers' Successful Year.

Joseph Lucas, Ltd., Birmingham, after paying 5% on the preference shares have declared a dividend of 15% on the ordinary shares. £15,000 has been placed to reserve and £13,774 7s. 4d. has been carried forward. The total net profit for the year after due provision for depreciation amounts to £42,899 7s. 4d. The subscribed capital is £200,000.

### Leakage through Generator Filler Cap.

Being continually troubled by water pouring from the filler cap of the generator on one of our machines, which covered the tank with drops and rusted all the plated



A home made generator cap.

fittings within its reach, we sought a means of overcoming the difficulty, and completely cured the trouble by soldering a short piece of copper pipe on to the base of the filler cap and plugging the end with the head of a brass rivet, which was soldered on to the bottom. Two holes were then bored in the position shown. The dotted line shows the shape of the interior of the cap, which rendered it of such a

nature that the water forced itself up the dome and leaked out freely through the hole at the top until the tank had emptied itself to a certain level.

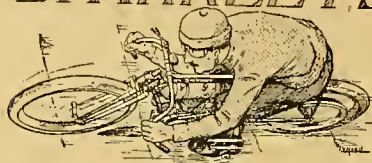
### Tyres in Competition.

R. Charlesworth, competing in the Herts County A.C. third quarterly trial, won the slow hill-climb in Class C (twins) and the private owners' silver cup. He used a cover on the driving wheel of his 6 h.p. Zenith made by W. and A. Bates, Leicester, which had done 2,000 miles, mostly with a sidecar. We understand that there is still plenty of rubber on the tread, and the tyre looks like doing another 2,000 miles.

### Motor Cycle Saddles.

A case of some interest was decided recently by the Comptroller-General in regard to saddle patents. J. B. Brooks and Co., Ltd., entered two oppositions to the patents relating to the XL'All anatomical steel base saddles, and requested their entire rejection on the ground that their features were old and well-known at the date of application. The decision of the Comptroller-General was to seal patents both for the pan seat or anatomical top and the parallel springing of rigid top saddles. Further developments of this litigation may be expected.

## SPARKLETS

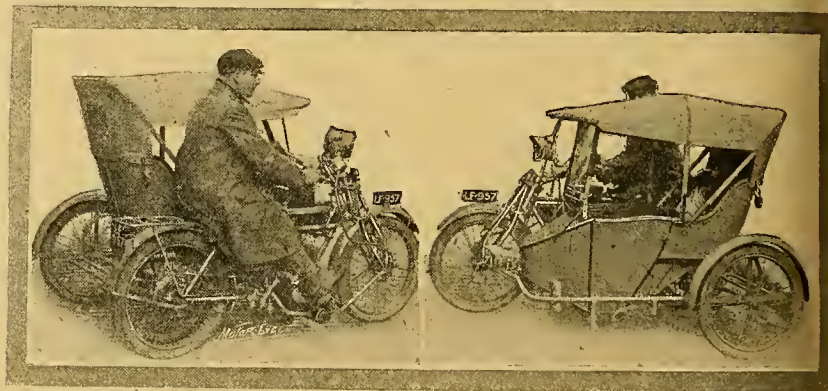


### Storing in Cambridge.

Mr. King, of King and Harper, Bridge Street, Cambridge, who formerly made a motor bicycle bearing his name, and is well-known to Cambridge motor cyclists, has greatly enlarged his premises, and is now storing 150 motor bicycles. Mr. King caters for cars and motor cycles, and the smaller vehicle is never neglected.

### A Sidecar Hood.

An excellent sidecar hood is that made by the Capital Screen and Hood Co. It is a copy on a small scale of the ordinary two-seated car hood, and is made of strong double texture twill and has a celluloid window at the back. It should prove a serviceable fitment. It is shown in the illustration below.



The "Capital" sidecar hood fitted to a Matchless.

### Trade Announcements.

The City Ignition Co. advise us that during the period of the Olympia Motor Cycle Exhibition they will exhibit their specialities at 4, Beaconsfield Terrace Road, facing the back entrance to Olympia.

### Trade Notes.

Mr. W. Earl, late foreman of the F.N. Repair Works, informs us that he has re-opened the premises at Kelvin Road, Highbury, N., recently vacated by the F.N. Co., and is specialising in repairs to these machines.

Mr. A. Alderson, who has acted as designer for eight years for Singer and

### "The Motor Cycle" Photographs.

Duplicates of photographs appearing in "THE MOTOR CYCLE" will be supplied at the following rates:—Unmounted prints, half plate, 1/6 post free; mounted, 1/8 post free. This refers only to photographs taken by "THE MOTOR CYCLE."

Orders, which must be accompanied with remittance, should be addressed to the Photographic Department—Iliffe and Sons Limited, 20, Tudor Street, London, E.C.

Co., Ltd., and the Singer Motor Co., been compelled, owing to failing eyesight to resign his position. He has been recommended to adopt an outdoor life, and in future take up a line of business which will not entail so much strain on eyesight.

### "Tracing Troubles."

The above is the title of a new book published by Iliffe and Sons Ltd. London and Coventry, and is obtainable from *The Motor Cycle* Offices, 20, Tudor Street, E.C. It is intended to assist motor cyclists to identify faults in the running of their machines, and to remedy them with the least delay. The manual has been prepared on the same lines as Mr. J. S. V. Bickford's automobile manual and is arranged as follows: the reader knows what is the matter with his machine, he begins with the index at the end of the book, hunts up the trouble there, and looks up the paragraph directed. If he does not know what the matter, he turns to Section I., which consists of numbered tables. As an example, if the engine will not start, hints regarding this will be found in No. 1 table. If it runs badly, but without stopping, No. 22 will probably give

the reason of the trouble, and if it stops altogether, table 95 will suggest a remedy for the fault. The book is priced at 1s. net, and can be obtained, post free, for 1s. 2d. It is edited by "Road Rider," the compiler of "Hints and Tips for Motor Cyclists," and will be found useful even to the most experienced riders.

### "Complete Hints and Tips for Automobilists."

The fifth edition of this work, which has been thoroughly revised by the staff of *The Autocar*, is now ready. All hints and tips which have become obsolete have been eliminated, and others, giving information with respect to the latest types of cars, have been inserted in their place. Many owners of motor cycles are also owners or prospective owners of motor cars and will be interested in a book of this sort. Among the various chapters are such articles as overhauling a car in a private garage, tuning up a car, what to do with a new car, etc. The book is full of excellent illustrations, and the price, post free, is 2s. 10d. Copies are obtainable direct from *The Motor Cycle* Offices, 20, Tudor Street, E.C., or from leading booksellers.



S S S S S S S

**ON HILLS**

or whenever you find your belt slipping, apply the world-famed remedy—

**"BELTICUM."**

Prepared specially for Motor Cycle Belts. Equally effective on Rubber, Canvas, or Leather. It makes no difference whether your belt is new or old, whether your pulley is worn or not, the belt will grip all the time. With a bit of Belticum handy there is no need to shouten the belt during a run. Last, but not least, Belticum will double your belt mileage.

Price 6d. a bar.

Clean to handle. Carries like a Plug. TRY IT.

**SERVICE BELT DRESSING.**

For leather belts, chutes, etc.

Increases efficiency.

Recommended for Service Belting.

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A Special Preparation for preventing rust and preserving plated parts of machine.

Price 9d. tin

Write for Booklet dealing with Best Belt made

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# SERVICE BELTING SAVES BOTHER

**BRITAIN'S BEST.**

The belt that will not slip, but always grips. Ideal for wet and winter work.

**Extract from A.C.U. 6 Days' Trial Judge's Official Report.**

"... I would also mention as having gone through the trials in a most satisfactory manner, the set of Service leather belts (set No. 7), entered by the Service Co., Ltd., and carried on Mr. W. B. Little's one-cylinder 3½ h.p. Premier motor cycle. In all these sets of belts one belt only was used, and in each case only one piece required to be cut off the belt. At the conclusion of the trial they were all in a perfectly serviceable condition, and apparently good for use for many more miles."

London, N.W., 21/10/12.  
"I beg to inform you that I have climbed Arms Hill, Henl y, on my 3½ h.p. Swift, with Sidecar and passenger. The machine was in full touring trim with heavy lamp, generator, and tool bags for 14 tools and spares, weight of machine and passenger 568 pounds. The machine is the same as I used in the 6 Days' Trial. The hill was very greasy, there being some rain over-night. However, I did not rope back wheel as I used a steel-studded Hutchinson and a Service Belt."—Yours faithfully, F. J. W.

**LIST OF R. LORD'S SUCCESSES Using the Service Belt.**

Sutton Coldfield 12 hour Gold Medal  
London, Gloucester, London Silver Cup  
Herts. Co. Quarterly Trial Bronze Mdl.  
Liverpool 12 hour .. .. Certificate  
A. C. U. Trial .. .. Certificate  
English via Dutch Trial Silver Medal  
Wolverhampton Two Days' Trial Mdl.  
London, Exeter, London Gold Medal  
Land's End, London Silver Mdl.  
Liverpool 24 hour Trial Gold Medal  
London, Exeter, London Gold Medal  
London, Edinburgh .. Gold Medal  
Irish End-to-End .. Gold Medal  
Essex 24 hour Trial .. Silver Medal  
Liverpool 12 hour .. Gold Medal

**292-293, High Holborn, London, W.C.**

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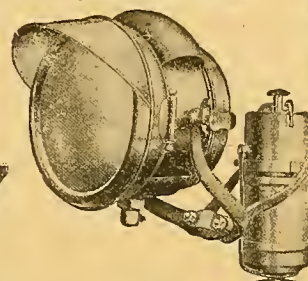
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Dark nights are here. Good lights are required.

**F.R.S. Standard Lamp Set.**

800ft. beam, complete with brackets, generator, and tubing.



47/6 Set.

1,000ft. beam Set .. .. 68/6  
1,200ft. " " .. .. 78/6

**Magneto Electric Lamp Set.**

Specially for Motor Cycle. Set complete with lamp, wiring, etc. 52/6

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EVERY TYRE GUARANTEED FOR "3,000 MILES" If used with or without Sidecar.

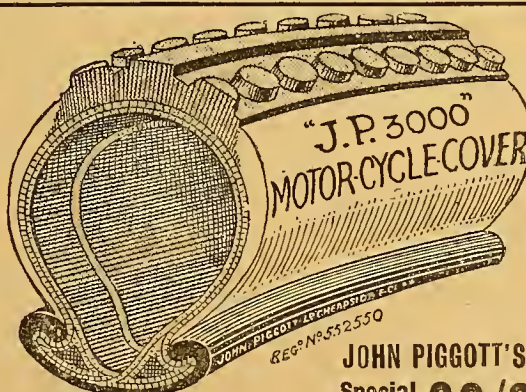
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THE "IDEAL" WATER-PROOF MOTOR SUIT.



Double-breasted Jacket, 36in. long, fitted with wind cuffs, deep storm collar, tab on sleeves, etc., and 1 pair shaped thigh Leggings, spat fronts, Double Texture, Fawn Paramatta, 25/- complete.

**THE "MANX" WATERPROOF MOTOR SUIT.**  
Double-breasted Jacket 40in. long, fitted with wind cuffs, etc. Strap at waist, cut full in skirt. Also 1 pair shaped Thigh Leggings, spat fronts, Double Texture, Dark Fawn Paramatta, 33/9 complete.



"Size 26 x 2½"

**JOHN PIGGOTT'S Special Price 32/9**

SEND FOR SECTION POST FREE.

The Improved

## 'ACME' MOTOR CYCLISTS' COAT.

In Grey or Brown Frieze, lined throughout, fitted with our new Multi Collar and Duplex Wind Cuffs.

Piggott's Price 25/-

Sizes in stock, 36 to 44 chest.

Plain Grey and Dark Fancy Frieze and our new Multi Collar, which enables it to be worn in the three positions shown; also fitted with Duplex Wind Cuffs complete.

Piggott's Price 33/6

**JOHN PIGGOTT, LTD., 117-118, CHEAPSIDE, AND MILK ST., LONDON, E.C.**

In answering these advertisements it is desirable to mention "The Motor Cycle."



# THE NEW HOBSON MOTOR CYCLE PLUG.

**3/3** The outcome of Long Experience. The Real Common-Sense Plug.

**ITS CHIEF ADVANTAGES**—No Sooting-up—Self Cleaning; Easy Starting; Perfect Sparking at any Speed; Electrical Resistance Minimised; Maximum Power; Reduction of Wear.

Neither Breakage nor Leakage—Perfectly Gas-tight at all pressures.

**SEE STAND 333 OLYMPIA**  
(GALLERY).

Manufactured by...  
**H. M. HOBSON, Ltd., 29, Vauxhall Bridge Rd., S.W.**



## MAN'S MASTERY .. OVER THE AIR ..

This fascinating subject should appeal to everyone who is interested in mechanical locomotion. Human flight, in all its aspects, is fully dealt with month by month in

## The AERO

*A High-class Monthly devoted to the interests of Aviation.*

Written in practical and not too technical language, and profusely illustrated.

Published Monthly.  
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Sixpence, net.

*Of all Newsagents and Bookstalls.*

*Specimen Copy, Nine Stamps, from the Publishers:*

**LIFFE & SONS LTD., 20, Tudor Street,  
LONDON, E.C.**



THE FAMOUS

# BRAY "RONI"

ACETYLENE BURNER FOR HEADLIGHTS.

Gives from a single gas-way only, an atmospheric flat flame which cannot become distorted and crack mirror or lens. The burner is of the air-injecting type—it will not carbonise. It is now fitted with a pressure check which obviates flaring.



Send for descriptive booklet of the "Roni" Burner to

**GEO. BRAY & Co., Ltd., Dept.....M. LEEDS, ENGLAND.**

## 4¼ REGAL PRECISION

FOR SIDECAR WORK GIVES JUST THAT LITTLE EXTRA POWER THAT YOU WANT.

Single Cylinder, 89×96 m/m., 600 c.c.

Extra strong frame and forks, that you can always rely upon. Extra large tank capacity, with detachable sump and petrol filter.

Extra low saddle and comfortable riding position.

Starmey-Areher 3-speed, or Bowden or Roe 2-speed.

Excellence of practical design and finish, heaps of good points. That little "extra" all round that makes "just the difference."

Immediate Delivery.

**ERNEST SMITH & WOODHOUSE, Ltd.,  
83, John Bright Street, BIRMINGHAM.**

LONDON AGENTS: H. C. MILLS & Co., 15, Woodhouse Parade, North Finchley

## AMAC BELT FASTENER.



PRICE

**2/6**

ONE YEAR'S GUARANTEE. MADE OUT OF SOLID STEEL BARS. HARDENED—UNBREAKABLE.

**ASTON MOTOR ACCESSORIES Co. Ltd.  
Telford Street, Aston, BIRMINGHAM.**

## AMAC



# DO NOT MISS THIS

# SPECIAL DISPLAY

OF

# CYCLEGARS

DURING

# OLYMPIA SHOW

 (Nov. 8 - 16)

AT

# HARRODS

*Write for Harrods' Cyclecar List.*

**A FEW VERY SPECIAL  
BARGAINS IN SECOND-  
HAND MOTOR CYCLES  
STILL LEFT.**

**HARRODS LTD.** RICHARD BURBIDGE,  
—Managing Director.—  
BROMPTON ROAD, LONDON, S.W.

## CLEARANCE LINE.

We have 7 h.p. Indians, model K Douglas, P. & M.'s, 8 h.p. Rex-Jap, f.e. Rudge, Scott, A.C., Morgan, G.W.K., left from our year's trading, and we wish to clear these out cheap.

If you are a buyer, make us a cash offer, or if you are a deferred payment purchaser you can have any of them at list price—one fifth to one quarter down, balance by 12 monthly instalments. Swaps entertained if reasonable.

P.S.—Our Mr. Hitchen will be sunning himself at Morgan's Stand during show week. Have a packet with him.

Note the address—

**HITCHEN'S LTD.,  
MORECAMBE.**

Telephone 112. Wires—Hitchen's Ltd., Morecambe.

## A BALL BEARING

is a delicate mechanism, and the finely finished surfaces of the balls and races are quickly ruined by wet and grit which soon work in when the motor cycle is ridden in wet weather.

HUB LUBRICANT is recognised as an ideal lubricant for ball bearings. Its special value, however, is in the protection that it affords against the ingress of wet and mud.

HUB LUBRICANT is easily injected and it stays in and keeps wet out.

Hub lubricant is now being generally adopted for bottom bracket two and three speed gear boxes such as Bowden, Clyno, Douglas, Chater Lea, F.N., Bradbury, and James. It is quite different to the usual gear grease

Write for H. L. literature and 1913 Lists to—

**PRICE'S PATENT CANDLE CO. LTD.,  
BATTERSEA, LONDON, S.W.**

Hub Lubricant—post free—½lb. tins, 9d; 1lb. tins, 1/-



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

### SECTION II.

York and Lancashire.

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

### SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

### SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

### SECTION X.

Scotland.

### SECTION XI.

Ireland and Isle of Man.

# WATKINSONS

9, SHOE LANE,  
FLEET ST., LONDON, E.C.



**FAMED FOR THE  
SELLING SYSTEM  
THAT ENSURES  
SATISFACTION.**

The system that gives buyers the largest choice of all best makes at lowest possible prices, including newest up-to-date Models, and desirable 2nd-hand Machines repaired and renovated ready for the road.

**ASK FOR OUR  
TO-DAY'S LIST,  
which includes**

6128.	3 1/2	h.p.	1911	free-engine	TRIUMPH	£40	0
6129.	2 1/2	h.p.	1911	2-speed	DOUGLAS		
					Model E	£32	10
6130.	3 1/2	h.p.	1910	free-engine	TRIUMPH	£35	0
6134.	3 1/2	h.p.	1912	2-speed	HUMBER		
					and sidecar	£56	0
6139.	2 1/2	h.p.	1910	ROYAL ENFIELD		£18	10
6142.	3 1/2	h.p.	1912	2-speed	HUMBER		£35 0
6116.	3 1/2	h.p.	1912	SCOTT		£52	10
6117.	3 1/2	h.p.	1912	3-sp. NEW HUDSON		£42	10
6119.	2 1/2	h.p.	1911	2-sp. lady's DOUGLAS		£32	10
6120.	3 1/2	h.p.	1911	CHATER-LEA-FAFNIR		£22	10
6121.	3 1/2	h.p.	1911	T.T. SINGER		£32	10
6122.	6	h.p.	1912	ZENITH GRADUA		£64	0
6083.	3 1/2	h.p.	1911	T.T. road. TRIUMPH		£35	0
6085.	3 1/2	h.p.	1910	TRIUMPH		£30	0
6086.	3 1/2	h.p.	1911	ZENITH GRADUA		£36	0
6088.	3 1/2	h.p.	1912	SCOTT		£50	0
6094.	3 1/2	h.p.	1912	F.E. TRIUMPH		£47	0
6095.	3 1/2	h.p.	1912	ZENITH		£40	0
6098.	5	h.p.	1910	twin REX and sidecar		£30	0
6104.	6	h.p.	1911	2-sp. N.S.U. & sidecar		£42	0
6073.	3 1/2	h.p.	1910	free-engine TRIUMPH		£33	10
6074.	8	h.p.	1911	2-speed MATCHLESS		£50	0
6076.	2 1/2	h.p.	1910	DOUGLAS		£22	10
6081.	3 1/2	h.p.	1907	2-speed TRIUMPH		£25	0
6056.	3 1/2	h.p.	1912	free-engine TRIUMPH		£46	0
6057.	3 1/2	h.p.	1912	standard TRIUMPH		£39	0
6060.	3 1/2	h.p.	1911	F.E. TRIUMPH		£38	0
6063.	3 1/2	h.p.	1909	BRADBURY		£22	10
6019.	4	h.p.	1911	Free-engine INDIAN		£32	10
6035.	8	h.p.	1911	T.T. MATCHLESS		£50	0
6007.	2 1/2	h.p.	1911	DOUGLAS		£26	10
5989.	3 1/2	h.p.	1912	ZENITH GRADUA		£45	0
5983.	2 1/2	h.p.	1911	2-speed BRADBURY		£35	0
5981.	5-6	h.p.	1912	A.C. SOCIABLE		£79	0
5980.	5-6	h.p.	1911	4-cylinder F.N.		£28	0
5947.	3 1/2	h.p.	1909	DOUGLAS		£20	0
5908.	3 1/2	h.p.	1910	CENTAUR		£20	0
5901.	5	h.p.	1911	cone clutch REX		£30	0
5870.	3 1/2	h.p.	1912	ZENITH GRADUA		£42	10
5861.	2-7	h.p.	BAT-J.A.P.		£22	10	
5834.	5	h.p.	1911	tourist REX		£30	0
5809.	2 1/2	h.p.	1911	T.T. J.A.P.		£28	10
5799.	3 1/2	h.p.	1911	T.T. BRADBURY		£28	0
5788.	3 1/2	h.p.	1912	2-speed HUMBER		£42	10
5786.	3 1/2	h.p.	1912	3 sp. NEW HUDSON		£37	10
5742.	3 1/2	h.p.	1910	T.T. TRIUMPH		£32	10
5732.	2 1/2	h.p.	1912	2-speed ENFIELD		£42	10
5721.	2 1/2	h.p.	1912	3-speed HUMBER		£37	10
5596.	3 1/2	h.p.	1910	KERRY ABINGDON		£30	0
5559.	3 1/2	h.p.	1908	TRIUMPH		£25	0
5504.	3 1/2	h.p.	1910	free-engine PREMIER		£24	0
5441.	3 1/2	h.p.	1911	standard BRADBURY		£30	0
5420.	2 1/2	h.p.	1911	2-speed ENFIELD		£35	0

# WATKINSONS

Phone: 5777 Holborn.  
Wires: "Opifcer, London."

## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding 10 in value, a deposit fee of 2s. 6d. is charged, when under to the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Hiffe & Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

1911 Calthorpe-Precision, just been overhauled at works; £25.—Muir's, Stockton. [X669]

1911 Bradbury, one pair spare wood wheels, lamp, horn, and spares, new tyres and belt, just been overhauled at works; £30.—Muir's, Stockton. [X810]

1913 Calthorpe-Precision, T.T. model, list £46, special competition engine; bargain, £38.—Muir's, Stockton. Phone: 561. [X670]

LINCOLN Elk, 1912, 3 1/2 h.p., free engine, perfect; £30.—Rosby, Irving St., Wokington. [7630]

NEW Hudson, 2 1/2 h.p., 3-speed, free engine, good condition; £38/10.—Scott, cycle agent, Keewick. [X689]

2 1/2 h.p. Royal Enfield, twin lightweight model, in splendid condition; £21.—Turvey and Co., The Motor House, Sunderland. [X9333]

2 1/2 h.p. Twin N.S.U., practically new, not having been ridden more than 100 miles; a decided bargain, £22.—Turvey and Co., The Motor House, Sunderland. [X9334]

3 1/2 h.p. Triumph, 1911 model, free engine, not done 2,500 miles; a bargain, £36.—Turvey and Co., The Motor House, Sunderland. [X9335]

3 1/2 h.p. Triumph, free engine, bought new this year in May; a bargain, £38.—Turvey and Co., The Motor House, Sunderland. [X9336]

2 3/4 h.p. Humber, 1912 T.T. model twin, 3-speed, not ridden 300 miles, 1 belt, large tank; a bargain, £44.—Turvey and Co., The Motor House, Sunderland. Sole agents for B.S.A., Humber, Triumph, Royal Enfield, etc. [X9337]

1912 Rudge, free engine, April 19th, splendid condition, little used, tyres as new; £42.—Clearly, wool merchant, Kendal. [X531]

P. and M., Oct., 1911, Kempshalls, perfect condition; expert examination invited.—Grey, Stannington Av., Heaton, Newcastle-on-Tyne. [7773]

DOUGLAS, new Xmas, 1910, excellent running and tyres, practically new, replete with all accessories; £25.—Smith, 51, Victoria Rd., Darlington. [7619]

1913 Douglas Zenith, New Hudson, Rover, Smith, Precision motors—send orders now for early delivery.—C. W. Smith, Northgate, Darlington. [0177]

1912 Humber, 3 1/2 h.p., 2-speed, free engine, Jones speedometer, P. and H. lamp, 18 in. sidecar, run 1,190 miles, perfect; £55.—W. Sutton, Warkworth Av., Whitley Bay. [X779]

TRIUMPH, May, 1911, in good condition, little used, no winter riding, new Palmer on back, original on front, spare belt, lamp, generator, overalls, etc.; the lot £37, or near offer.—Foster, Dental Surgery, Crook. [X537]

IVY-PRECISION, T.T., 1912 model, first-class condition, very fast, with Stewart speedometer, Lucas horn, lamp, £37.—Bradbury, 1911 touring and T.T. handle-bars, just overhauled, £28.—Newton, George Ter., Neville's Cross, Durham. [X780]



# CORONET SIDE CARS

are built of the finest materials by skilled workmen. Every car is as perfect as human knowledge and skill can make it.

The springing means riding comfort; the construction, freedom from sideslip. Every time you take the car out you can depend upon security, comfort, beauty, perfection. A Coronet Sidecar embodies all the latest improvements; carries the fullest possible guarantee. Our free booklet explains why it will pay you to secure a Coronet. May we send it?



Prices from .. £6:6:0.  
Can be obtained from all dealers.

## Coronet Detachable Joints.



All Coronet sidecars are fitted with these joints, enabling sidecar to be attached or detached in one minute.  
We can supply them for other makes of sidecars.

Price per pair, 12/6.

## Binks 2-Jet Carburettors.

Increase your power by fitting a Binks. We will take your present carburettor in exchange. Write for quotation.

## Weather-Proof Magnetos.

Get rid of your out-of-date magneto, coil, or accumulator, and let us take them in exchange for the latest water-tight magneto.

## BOOTH'S MOTORIES,

Keighley Mills, Bedford Street North,  
HALIFAX.

Telephone 1062.

## MOTOR BICYCLES FOR SALE.

EXCEPTIONAL Bargain.—1912 3½ h.p. Premier, 2-speed, absolutely perfect, and very little used, just like new, honestly cheap at £45, cash only £40; also brand new 3½ h.p. 3-speed Premier, very latest model, offers wanted.—E. G. Eaglefield, Maryport. [X649]

### SECTION II.

York and Lancashire.

L.

HITCHINGS', Ltd.,

LIVERPOOL, 74, Bold St.

TRIUMPH, Matchless, and James motor cycles, and Crescent cyclecars; sole agents; courteous service and absolute satisfaction guaranteed. Your enquiries invited by Hitchings', Ltd., 74, Bold St., the pioneers of motor cycling in the north. (Established 35 years ago. No connection with any other firm.) [0179]

HEBDEN'S Motor Mart, Burnley.

OFFERS Wanted for the following new and 2nd-hand machines:

1912 Models.

MULTI Rudge; list £60.

FREE Engine Triumph; list £55; two in stock.

T.T. Triumph; list £50.

NEW Hudson, 3½ h.p., 3-speed, J.A.P. engine; £59/17.

THE Latest 1913 Model Williamson-Douglas. 8 h.p., water-cooled, 2-speed gear, chain drive, and special Canoelet sidecar, built to suit same, with luggage carrier, wind screen, apron, and other special fittings; the finest combination ever made; list price £98.

NO Reasonable Offer Refused.

WE Have Several 2nd-hand 1912 Ridges, Douglas (ladies and gents), 1911 Ridges, J.A.P.'s, etc., Triumphs, Rexes, Lincoln Elks, N.S.U., etc., etc., all up-to-date mag. machines.

WRITE, call, or 'phone 438 at once if you require a machine at your own price.

HEBDEN'S Motor Mart, Burnley. [0171]

LIVERPOOL.

CLEARANCE of New and 2nd-hand Stock.

DOUGLAS, 1911, 2-speed, free engine, model E, in good condition, reliable mount; £32.—Colmore Depot, 18, Renshaw St., Liverpool. [X836]

RUDGE, 1911, 3½ h.p., free engine, fine condition; £38, or will accept best offer.—Colmore Depot, 18, Renshaw St., Liverpool. [X837]

BRADBURY, 1912, 2-speed, built for sidecar work, complete with sidecar, a useful passenger machine; £45 the lot.—Colmore, 18, Renshaw St., Liverpool. [X838]

CLYNO, 1912, 6 h.p., 2-speed gear, with the special high-class Clyno sidecar, this machine used only for demonstration purposes, good as new; cost £85, take £59 to clear, a fine opportunity.—Colmore, 18, Renshaw St., Liverpool. [X839]

1912 A.J.S., 5 h.p. twin, new August, £55; 1912 T.T. Triumph, £40.—Bassett, Doncaster. [X715]

MOTO-REVE, 2½ h.p. twin, 1910, fast, good order; £17.—Cook, 10, Brunel St., Burnley. [X132]

3½ h.p. T.T. Calthorpe, bought Nov. 1911, perfect; £28.—Fox, 7, Cemetery Rd., Sheffield. [7602]

1912 Douglas, model K, as new, horn, mirror, spares, etc.; £42.—Larrad, Horbury, Wakefield. [X605]

£9.—3½ h.p. N.S.U., mag. ignition, spring forks, 26×2½, Palmers, 1½ h.p. belt—65, Hilden St., Bolton. [X704]

1909 5-h.p. Rex de Luxe, canoe sidecar, splendid condition; trial; £30 cash.—28, Abbey Walk, Halifax. [X655]

TRIUMPH, 1909½, all accessories, back rest, good condition, £25; sidecar, £4/15.—17, Moorgate, Bury. [X142]

ROYAL Enfield (1911), 2½ h.p., 2-speed, free engine, perfect condition; £35.—Lilburn, Arlington St., Hull. [7657]

RUDGE Multi, 1912, little used; sell £50, or exchange 1912 P. and M.—Hodgson, 19, Glen Ter., Halifax. [X135]

3½ h.p. Humber, accumulator, splendid tyres; £9/10, or exchange.—Brook, 19, Lindley St., Longwood, Huddersfield. [X672]

NEW Hudson Lightweight, just bought for £53, will accept £39 cash; faultless.—39, Aughton Rd., Birkdale, Southport. [X572]

1912½ New Hudson 3-speed Motor Cycle, lamp, horn, accessories; accept £50.—Tuddenham, 85, Beckett Rd., Doncaster. [X464]

# 1913 Premiers.

We specialize in these and can make the best allowance for your machine. We can give quick delivery. We can supply the 3½ h.p. model fitted with the countershaft 2-speed gear, or Armstrong latest 3-speed, enabling engine to be started while machine is at rest on the ground.

## BARGAINS IN REXES.

7 a.p. REX, M.O.V., 2 speeds, handle starting, complete with £10 sidecar (1911) ..	£42 10
5 h.p. REX, 1911, M.O.V., 2 speeds, complete with Rex spring wheel £12 sidecar ..	£40 0
5 h.p. REX, 1910½, M.O.V., 2 speeds, handle starting ..	£32 10
3½ h.p. REX, 1909, with 1910 engine ..	£18 10
5 h.p. REX, 1908, 2 speeds, handle starting ..	£22 0
5 h.p. REX, 1910 magneto, h.b. control ..	£18 10
3½ h.p. REX, 1910, M.O.V., magneto, etc. ..	£19 10
3½ h.p. REX, 1908, spring forks, magneto ..	£16 10

## VARIOUS BARGAINS.

3½ h.p. PREMIER, brand new from makers ..	£34 10
3½ h.p. PREMIER, 3-sp. Sturmy gear, new ..	£44 10
3½ h.p. BRADBURY, 1911 ..	£29 10
5 h.p. CLYNO, 1912 model ..	£57 10
6 h.p. DOT, 1912, J.A.P. engine, M.O.V., 2 speeds, complete with sidecar, cost £30 ..	£47 10
MORGAN Runabout, run 1,500 miles, screen, lamps, speedometer, dust screen, special 3 in. tyre ..	£79 0
6 h.p. twin N.S.U., spring forks, 2 speeds, magneto, complete with sidecar ..	£26 10
3½ h.p. TRIUMPH, 1911, free engine, complete with sidecar ..	£39 0
3½ h.p. HUMBER, 1911, 2 speeds, handle starting, with Millford sidecar ..	£33 15
3½ h.p. HUMBER, 1910, 2 speeds, handle starting ..	£27 10
3½ h.p. N.S.U., 1908, M.O.V., magneto ..	£13 10
3½ h.p. QUADRANT, magneto, spring forks ..	£13 10
2½ h.p. twin ENFIELD, 1910, lightweight ..	£17 10
2 h.p. twin MOTO-REVE, 1910, lightweight ..	£16 10
1½ h.p. WOLF, lightweight, 1910 model ..	£8 10
3 h.p. FAFNIR, vertical engine, M.O.V. ..	£6 15
2½ h.p. MINERVA, nice order ..	£6 10
3 h.p. HUMBER, chain drive, free engine ..	£7 10
3 h.p. QUADRANT, vertical engine ..	£5 10
5 h.p. SAROLFA Tricar, twin, P. & M. gear ..	£8 10
3½ h.p. PHENIX Tricar, Minerva engine, M.O.V., 2-speeds, fan-cooled, coach built ..	£10 10

PUSH CYCLES TAKEN IN EXCHANGE.

## G.W.K. LIGHT CAR WANTED.

We are cash buyers of above, either new or second-hand. One only.

## ENGINES.

6 h.p. TWIN REX, magneto, etc. ....	£10 0
8 h.p. TWIN FAFNIR water-cooled, M.O.V., complete with clutch and magneto ..	£13 10
6 h.p. TWIN ANTOINE ..	£6 0
6 h.p. TWIN REX ..	£6 0
3½ h.p. REX, 1911, M.O.V. ....	£6 0
3½ h.p. MINERVA, with magneto ..	£5 0

## MISCELLANEOUS.

X'Fall Spring Forks ..	8/9
New 1912 B. and B. Carburettor ..	23/6
Chater Lea 3-speed gear box ..	£4 10
Bosch Magneto, suit Twin Rex ..	57/6
Nearly new 1912 Scenspray ..	19/6
Bradbury Pattern Handle-bars ..	6/6
Fit-all 2-speed gear, fit 3½ h.p. Minerva ..	55/-
Rigid Sidecar, complete ..	37/6
Long Handle-bars, dropped ends ..	5/6 and 6/6
Coronet Silencers, up to 5 h.p. ....	3/3 and 4/6
Unity Coupling ..	5/6
B. & B. and Amac, h.b. control ..	13/6
New Amac Carburettor, h.b. control ..	18/6
Albion Free-engine Clutch ..	30/-
Mills-Fulford Sidecar ..	£3 15
New 24 x 2 or 2½ Clipper Covers ..	8/6
Mabon Free-engine Clutch for Triumph ..	35/-
Bosch Magneto, suit Triumph ..	37/6
New Druid Spring Fork, heavy model ..	45/-

## Booth's Motories,

Keighley Mills, Bedford Street North, Halifax.

Telephone 1062.



# MAUDE'S BARGAINS

## EXCHANGES

## EASY PAYMENTS

### New 1912 Models. Immediate delivery ex-stock

1912 DOUGLAS, model K. ....	£50
1912 RUDGE, free engine .....	£55
1912 ZENITH, 6 h.p., Gradua gear .....	£68
1912 ZENITH, 3½ h.p., Gradua gear .....	£55
1912 REX, 6 h.p., Sidette complete .....	£75
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**KERRY**, B. and B. carburettor, running order, footboards, mag. ignition; £10 cash; exchange, or deferred terms arranged.—Hitchens, Morecambe. [7275]

**N.S.U.**, mag. ignition, h.b.c. carburettor, running order; £10 cash; exchange, or deferred terms arranged.—Hitchens, Morecambe. [7276]

**MOTOSACOCHE**, in want of overhaul, mag. ignition, Whittle belt, spring forks; £8; no swaps or deferred.—Hitchens, Morecambe. [7277]

**INDIAN**, 1912, new 7h.p., 2-speed; listed £75, £70 cash will purchase; exchange, or deferred terms arranged.—Hitchens, Morecambe. [7279]

**PHELON** and Moores, Colonial models, £65; ordinary models £60 cash; exchange or deferred terms arranged.—Hitchens, Morecambe. [7280]

**DOUGLAS**, Model K, listed £50, will clear a few at £45; the same allowance off J's; no swaps or deferred at these prices.—Hitchens, Morecambe. [7281]

**SCOTT**, 1912, just come in; £65 cash; exchange or deferred terms arranged.—Hitchens, Morecambe. [7282]

**A FEW** Accumulator Machines at prices about £25; write for particulars; all the thirty-five bob factor cycles are sold, please note.—Hitchens, Morecambe. [7283]

**DOUGLAS**, late 1911, P. and H. lamp, N.A.R. seat-pillar, etc., exceptional condition; £30.—Waller, 74, Aigburth Rd., Liverpool. [X647]

**£24**—4-cyl. F.N., practically new engine, splendid condition, plenty spares, guaranteed faultless; trial.—Heppinstall, Greeland. [X656]

**1910** Free Engine Triumph, renovated like new, all accessories, with or without sidecar; best offers.—H. Whitfield, Whitkirk, Leeds. [X729]

**INDIAN**, 5-6 h.p. (1910), P. and M. 2-speed, handle starter, Cowey, spares, recently overhauled; £35.—16, Chesham Rd., Bury, Lancashire. [7664]

**BRADBURY**, 1912, Villiers clutch, only used week-ends, horn, spare valve, plug, 3 belts; any trial; £40.—Ratcliffe, 20, Princes Rd., Sale. [7733]

**SACRIFICE**—Triumph, 1911, free engine, speedometer, handle, accessories, fine order; might car; offers.—30, Grovehall Drive, Leeds. [X784]

**1910 J.A.P.**, 1912, P. and H. lamp, and Lyse No. 3 saddle, new Dunlop studded tyres, Simms, B. and B., perfect; £17-48, Park Grove, Barnsley. [X699]

**SCOTT**, 1911, sidecar, latter run 50 miles, unused Palmer cord tyre, spare tube; must sell, health; offers considered.—Motor, 7, De Grey Rd., Leeds. [X743]

**1912** Rex-Jap, 8h.p., 2-speed and F.E.; also 1912 Rudge, F.E., special cash discount; deferred or exchange terms arranged.—Hitchens, Ltd., Morecambe. [7775]

**1912** P. and M.'s, just come in; special discount; deferred terms arranged.—Hitchens, Ltd., Morecambe. [7776]

**1912** Scott, absolutely new; cash discount allowed; deferred terms arranged.—Hitchens, Ltd., Morecambe. [7777]

**1912** Model K Douglas; cash discount allowed; deferred terms arranged.—Hitchens, Ltd., Morecambe. [7780]

**SCOTT**, 1911, carefully used, new chains, engine, gears as new, Herald sidecar, storm apron; £46; taking 1913 model.—Sudbery, Becketts Bank, Pocklington. [X568]

**SINGER**, 2½ h.p., standard, brand new; first cheque £32 secured; book your order for the Rolls Royce of cyclecars, the Singer.—Cauliffe's Cycle Depot, Southport. [X458]

**MUST Sell**—2½ h.p. Minerva, spring forks, B. and B., Bosch mag., low, and in excellent running order; bargain for quick sale; £10/10.—168, The Moor, Sheffield. [0100]

**1912** Rudge, free engine, mileage 800, carefully ridden, unpunctured, everything in excellent condition; real bargain, £40.—Higher Hall, Hindley Green, near Wigan. [X144]

**3½ h.p.** Ariel, var. gear, free engine, decompressor, £2 new June, 1912, run 500 miles, perfect order; cost £53, accept £44.—Glen, Albert Mills, Barrowford, Nelson. [X659]

**TRIUMPH**, 3½ h.p., 1907, and new sidecar, new cyl. and piston this year, good tyres, splendid condition; must sell; £25, or nearest offer.—Stevenson, Park Rd., Preston. [X676]

**1912** P. and M., 2 speeds, free, Kempshall, Hutchinson, button tubes, 1 spare, back rest, Rey whistle, Veeder, P. and H. lamp; £48, or offers.—Peters, Wilfred Rd., Bolton. [7764]

**SCOTT**, 1912, £20 Gloria spring wheel sidecar, Lucas best lamp, and generator, Cowey, all accessories, perfect condition; £70, or very near offer.—Shannonite, Princes Rd., Hull. [X624]

**3½ h.p.** Centaur, Phelon and Moore 2 speeds and free engine, handle starting, h.b.c., Amac carburettor, in exceptionally good condition; £13/10.—H. Arthur, 6, Toad Lane, Rochdale. [X731]

**1912** Free Engine Triumph, run 1,000 miles, £47/10; 1911 free engine Triumph, run 4,000 miles, £43; both in splendid condition.—Gregory and Norbury, Garage, Heaton Moor, Stockport. [X9786]

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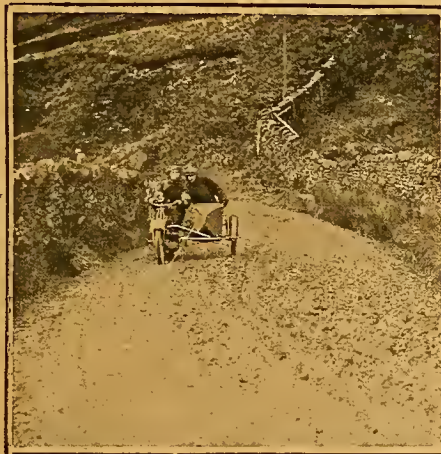
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## Cyclecars and Sidecars.

**T**HIS issue is mainly devoted to passenger motor cycles of all types, and there is no doubt that very great interest will be displayed in light type three and four-wheeled passenger vehicles at the Olympia Motor Cycle Show.

In addition to the illustrations and description of modern runabouts which are published in this issue, we have dealt editorially with the evolution of cyclecars, and have proved that the cyclecar, so-called, is no new type, though it must be admitted that the design is not settled. There is a great diversity of opinion as to whether the ultimate cyclecar will take the form of a miniature motor car, that is, embodying the best car practice, or be a development of the motor cycle, *i.e.*, with an air-cooled engine and belt or chain drive. Time alone will show. We know that practically every motor cyclist owning a passenger machine and all prospective purchasers are wondering whether their next new mount is to be a sidecar, tricar, or four-wheeler; therefore a few criticisms of both types are opportune at the present time.

The sidecar as we know it now is light, speedy, and economical. On it have been tested practically all the various forms of transmission which are being fitted to four-wheelers, with the exception, perhaps, of gear transmission, although a trial of this is possible with one or two types of four-cylinder motor bicycles with sidecar. Taking first the oldest form, the belt, this has not been found absolutely satisfactory.

Chains, if they are to give perfect results, must be protected, and the latest forms of chain-driven sidecars have the chains running in oil bath cases. Friction drive has not so far been used commercially on sidecars, but has proved to be satisfactory on one or two types of runabout.

The introduction of four wheels has, of course, brought up the question of driving one or both rear wheels. Engineers tell us that when driving two wheels of a four-wheeled vehicle it is essential to use a balance gear to allow one wheel to over-run the other when turning corners. It yet remains to be seen whether a friction clutch method of attachment for one wheel will enable the balance gear to be dispensed with. Theoretically such a system should not give perfect results, but considering that the sidecar was looked upon when first introduced as a most unmechanical design and has yet proved to be not

only a serviceable but practical passenger-carrying vehicle, other principles which are condemned as mechanically wrong by engineers may prove in the case of light motor runabouts to be quite equal to the occasion.

We think readers will agree with us that it is in competitions like the Thousand Miles Trials that vehicles prove their capabilities; unfortunately we cannot refer to many of the runabout class which have shown themselves capable of serious touring. A few makers have had sufficient enterprise to enter them in hall-marked events, and all credit to those that have—they are bound to reap their reward. At the same time, it must not be overlooked that there have been during the last year or two a fair number of cyclecars on the market, and considering their number we have no proof that more than a few of them are capable of the same work as a well equipped sidecar. One advantage that a three or four-wheeler with a two-seater body possesses over a motor cycle and sidecar is that the driver as well as the passenger is protected from wet and mud. This is an advantage which would in many cases outweigh many disadvantages, and when a small difference in price is no object we can see a very big future for sociably-seated cyclecars.

For some time the motor cycle and sidecar will be considerably cheaper both in first cost and maintenance than three or four-wheeled runabouts. The reason for this is that motor bicycles are already standardised and can be made in quantities both economically and rapidly, and they can also be sold with or without a sidecar. The same remarks apply to sidecars. The reason why they are cheaper to maintain is because the combination of a motor bicycle and sidecar is lighter than most runabouts, and consumes less fuel. Last but not least, the sidecar combination provides two vehicles in one, and in many instances can be stored where a wider self-contained vehicle would be rejected on account of lack of accommodation.

In conclusion, we think that where storage space is sufficient and the owner does not wish to use a motor bicycle solo he will, if price be no consideration, purchase a cyclecar or small car. However, we anticipate even a larger demand for sidecar attachments next year, and although we are sure that a big number of runabouts will be sold, all who make them will be forced to prove their capabilities in open competition before the demand approaches that of the sidecar.



OCCASIONAL  
COMMENTSBY  
"IXION"**An Uaborn Run bout.**

The other day I ran into an elderly tradesman whom I have often tried to convert to the pastime, but in vain. I had a recent issue of *The Motor Cycle* in my hand, and I began to talk motor cycle runabouts for the rocks my arguments have always split upon in connection with bicycles were the familiar bogeys of side slip, dirtiness, cold, and starting acrobatics.

He informed me he had just returned from a trip to town, undertaken with the special object of inspecting and testing a cyclecar, but that he had returned without making a purchase. His idea was that at the present moment these machines stood exactly where motor bicycles were a few years ago.

The "spell of the knut," as he called it, was over the whole notion, and speed was the chief factor kept in mind by most designers. Speed means power, and power means price. "I shall buy a cyclecar for my work in a year or two," he concluded, "but it will not in the least resemble the machines I've been looking at to-day; I daresay these will survive, for there will always be fools who want to tear about at over 40 m.p.h. But the cyclecar of the future will be a small, light, low chassis with a  $3\frac{1}{2}$  h.p. engine, and I shall not pay a penny over £60 for it, perhaps less.

"It won't win hill-climbs or break records, and I daresay it would not get a gold medal in the Scottish Trials; but it will tote a nervous, middle-aged old jossler like myself over his business rounds in the undulating Midlands at very low cost. What the biggest public want is a four-wheeled edition of the lightweight bicycle, not a quadricycle caricature of Charlie Collier's racer."

I should not be at all surprised if my elderly friend proves to be perfectly right. Nevertheless the industry is working on the right lines.

Very few "nervous, middle-aged old jossers" will buy cyclecars in 1913, because years bring caution, and caution does not buy semi-experimental goods. The "knuts" will have to "try out" the auto quad, as it was the "knuts" who "tried out" the motor bicycle. When the runabout has made good, and has won its spurs in public, then the "jossler" class will begin clamouring for a cheaper, lighter, slower breed of four-wheeler; and the trade will tackle the demand in the light of some useful previous experience.

It will be very interesting to see what three years can evolve in the shape of a cheap, light, comfortable, single-seated runabout. With a big output of standardised models something rather sensational should be possible in the way of design and price, when the pioneers have educated the general public.

**Wear of Lightweight E. gins.**

From my budget of letters in reference to the above I select a typical example. Mr. W. Hutchison, of Paisley, has run a 1912  $2\frac{3}{4}$  h.p. twin for 5,800 miles

over Scottish roads, of which 3,200 were accomplished with a sidecar. His repair bill is as follows: Engine, gears, and belt, nil.; new fork springs, 2s. 6d.; new back wheel spokes, 1s. 9d.; new back tyre, 38s.; tyre repairs, 6s. 6d.; two new belt fasteners, 2s.

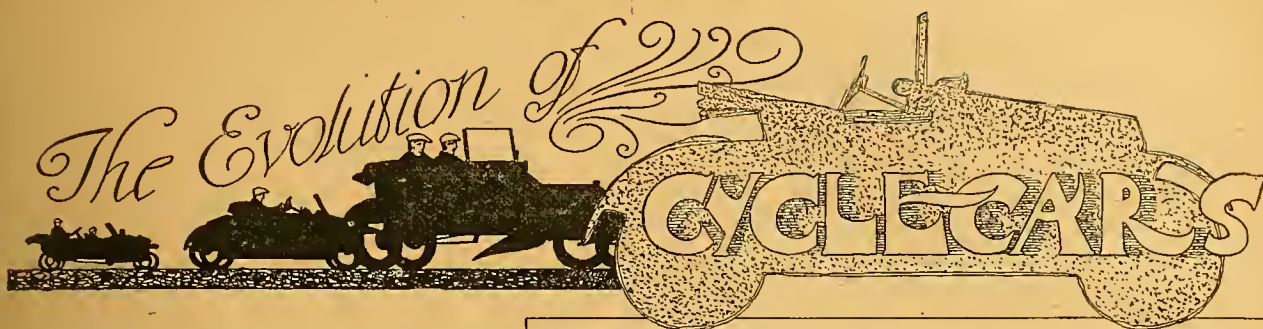
This is an excellent testimonial to the staunchness of the medium-sized mount, which was never designed to haul a passenger attachment. His experience—embodying a mileage of 5,800 from a single belt—confirms the testimony of many of my friends on the merits of the combined drive, but I am surprised it has lasted quite so long, and more surprised that his engine chain has put him to no expense. These details will be read with incredulity by many, and surpass the "previous best" quite easily. He finds that his  $2\frac{3}{4}$  h.p. is actually superior to the average  $3\frac{1}{2}$  h.p. in power maintenance; his engine bearings show no appreciable wear, and the carbonisation process is so slow that he actually had the temerity to start on a 600 miles tour with a sidecar when his engine was fouled by the carbon accumulated in 1,700 miles. He ascribes the freedom from carbon and the durability of his bearings to the drip-feed oiling.

He frankly states that in 1911 he would have mocked at the possibility of such experiences as are outlined above, but that the drip oiling has revolutionised an engine which was already excellent. I publish these details because they are likely to be challenged, and if they arouse controversy, sufficient evidence may be forthcoming to startle the makers who cling to the direct belt drive, and irregular lubrication, into initiating certain experiments. For a long time I have urged that combined drive and regular lubrication ought to be standardised on the typical British machine, and the more evidence we can elicit on such points the better.

**Magneto Controls.**

Perhaps the magneto control as it is often fitted is the worst back number on the average machine. The tank lever is an anachronism, and reminds us of the "twin tap" familiar in the half-forgotten age of the surface carburetter. With regard to fittings for controlling the contact breaker by means of a flexible wire, I have tried most types, and I have yet to find one which is absolutely wet and dirt-proof, while some have quite primitive "stops" for the wire casing on the handle-bar. My invariable procedure all this year has been to free and uncover the inner sliding barrel of the fitting on the magneto itself. After rubbing this clean I oil it carefully, and finally (as often as not) adjust the nut which holds the swivel at the top of the bracket. If the handle-bar lever be then waggled a few times the control will work well in dry weather and for half a day in wet weather, but towards the end of a wet run a retard generally means that the ignition cannot be advanced again unless the mechanism be re-oiled.

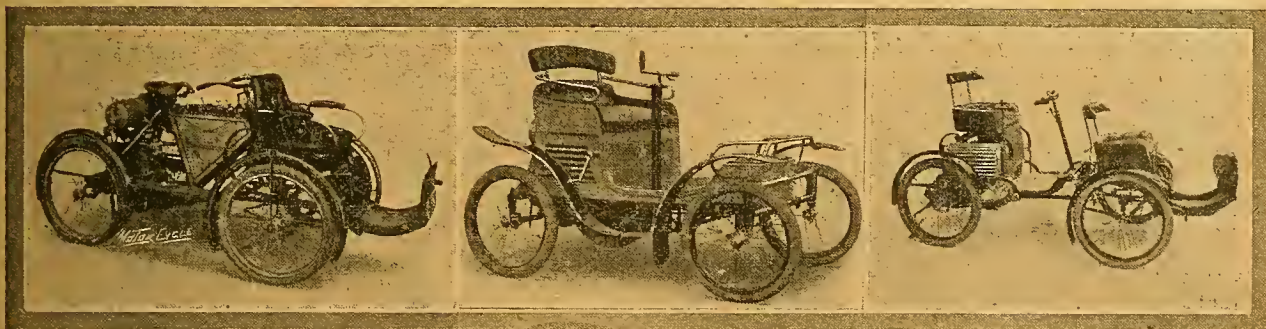




If the correct description of a cyclecar be a vehicle the chassis weight of which does not exceed 6 cwts., then instead of being recently discovered, as some would have us believe, it was practically the first born in the motor world. It has been, apparently, mislaid and recently detected, one might almost say stumbled across, since when it has been very much in the limelight.

**L**IGHT runabouts were very much in vogue about the year 1900, or even before then, if one include the three-wheeled variety. Leaving out such early types as the Benz tricycle and one or two others which were the first motor-propelled vehicles on the road, almost the earliest of the cyclecar type was the old Bollée tandem. This vehicle was practically

possible for a motor vehicle to be. The one referred to was the New Orleans. This little voiturette had a single-cylinder, air-cooled, vertical engine placed in front under the bonnet, and the engine was cooled by fans. The transmission was by belts, and the seats were sociably placed. Two of these vehicles took part in the first 1,000 miles trial and were favourably



Ariel quadricycle, built in 1899-1900.

Progress light car made in 1899, and which would now be regarded as a cyclecar

A two-seated Enfield four-wheeler of 1900.

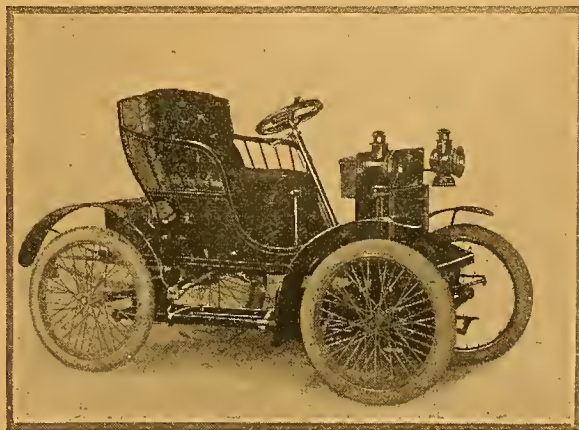
the first to be commercially exploited in this country, and has been often introduced in *The Motor Cycle* on occasions when historical articles regarding motor cycle construction have appeared. The date of the introduction of the Bollée was 1896. Soon after its introduction the manufacture of the vehicle was taken up by Humbers and the Motor Manufacturing Co., the latter firm selling it under the name of the Coventry Motette.

#### Early Auto Quads.

Then came De Dion's motor tricycle, almost immediately followed by the De Dion quadricycle, which was nothing more than a tricycle with a forecarriage attachment. Licences for the manufacture of tricycles and quadricycles fitted with De Dion or De Dion type engines were taken out by various cycle manufacturing firms, among them being the Beeston Co., Coventry; the Ariel Cycle Co., Birmingham; and the Enfield Cycle Co., Redditch. Both Ariel and Enfield quads took part in the 1,000 miles trial of 1900, as also did several light vehicles built on motor cycle lines, which if in existence to-day would come under the cyclecar definition. The writer particularly remembers one British-made machine of this class which was as near the present-day cyclecar as it is

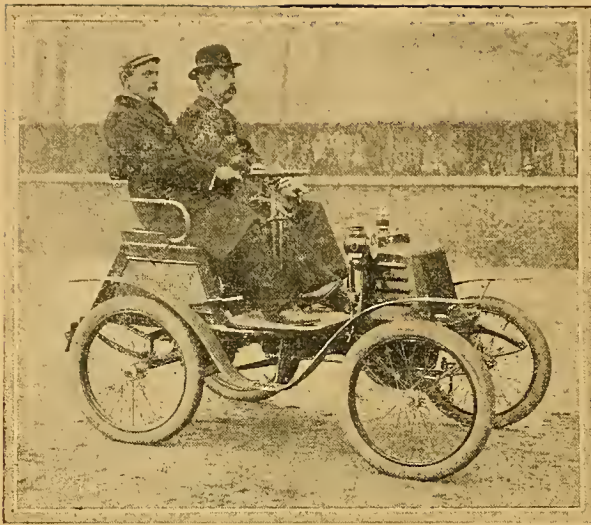
commented on by the judges. The Ariel quad, driven by Mr. J. W. Stocks, won a medal in its class, as also did the Enfield quad, entered by Mr. E. M. Iliffe, and on which the writer travelled through the trial.

Incidentally it is interesting to note that one of the



"Twelve years before its time." The Eastmead-Briggs worm-driven voiturette—a sociable-seated cyclecar.





The New Orleans. An air-cooled belt-driven miniature car of 1900. Mr. H. G. Burford at the wheel.

New Orleans voituresses referred to was driven by Mr. H. G. Burford, late manager of Humber, Ltd.

*The Autocar*, commenting on the performance of the two New Orleans, said "the very long and trying gradients did not appear to interfere with the effectiveness of the air-cooled motors."

Another vehicle in the trial, also of the cyclecar type, was the Century tandem, and one must not forget the  $3\frac{1}{2}$  h.p. De Dion voituress, certainly as much a cyclecar as any vehicle of the period.

#### An 1898 Model with Air-cooled Engine.

Leaving the 1,000 miles trial vehicles, one can recall the air-cooled Decauville voituress of 1898. This had a  $2\frac{1}{2}$  h.p. engine, and, leaving out the fact that the steering pillar was vertical and the body somewhat skeleton in design, it was a true cyclecar. One of these machines ran nearly 25,000 miles, between

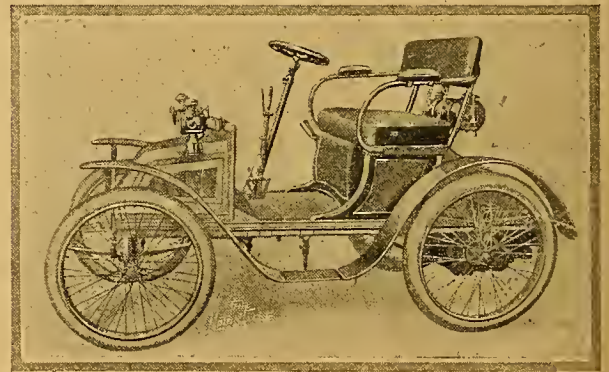


The Crestmobile, a true cyclecar of American origin. It was illustrated in "The Autocar" of 1901, and had air-cooled engine, chain drive with two-speed counter-shaft.

June, 1899, and November, 1902, and in 1902 was still in the possession of its original owner.

The number of voituresses or light runabouts which were exhibited at the Paris Shows from 1900 to 1903 was legion. Many of them were enlarged and reconstructed quadricycles; we illustrate one which was called the Bailleau; it was exhibited in 1902. This was practically an evolution of the quadricycle, because it was driven by a  $2\frac{3}{4}$  or  $3\frac{1}{2}$  h.p. De Dion engine situated behind the rear axle just like a quad, and was sold complete with a change-speed gear and two-seated body for £96. Its total weight was 5 cwt. 3 qrs. 16 lbs.; with a water-cooled engine it weighed slightly more, and was catalogued at £104. We mention these prices and weights to show that the idea of weight and price for the ideal £100 motor vehicle was very much the same in 1902 as it is now.

A large number of small four-wheeled cars built on motor cycle lines have been brought out at various times between 1903, the first year *The Motor Cycle* was published, and the present date. Most of them have been illustrated and described in these pages, but to revive the memories of our readers we have reproduced two or three to illustrate this article. In the inscriptions we have appended the dates of publication, and



The Bailleau, built in 1902. It had an air or water-cooled engine (to order) behind the rear axle and a Bozart or other two-speed gear.

those who have files of *The Motor Cycle* in their possession will be able to read the detailed particulars. To republish pictures of every one of the runabouts which have appeared in this journal would mean many more pages than we can spare at this busy time. Therefore, we have only reproduced those which most nearly approximate to the present idea of a cyclecar in its tandem or sociably seated design.

As a proof that the belt drive was not only possible but practical in early days we publish a sketch on next page of the method of the belt transmission used on a French cyclecar, the Vinet. Several modern cyclecars employ flat belt transmission and very few have improved on the Vinet design exhibited in 1902.

Other small cars of about the same period were the Darracq, and the 6 h.p. De Dion Populaire; the latter was sold in Paris for £156. This excellently constructed and reliable little De Dion vehicle had a big run at home and abroad—in fact, the evolution of cyclecars would be almost completed by publishing a treatise on the De Dion vehicles from 1899 to date, commencing with the quad; then the  $3\frac{1}{2}$  h.p. voituress with engine at the back, followed by the 6 h.p. Populaire with engine in front, which was the last of

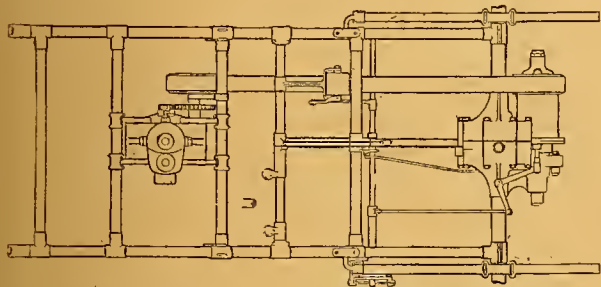


**The Evolution of Cyclecars.—**

the small motor cars made by this renowned firm and now withdrawn.

**What was Wrong?**

Whatever was wrong with the cyclecar type of vehicle about 1900 to 1904, it is safe to say that motorists as a body fought shy of small vehicles. True the 6 h.p. Rover had a good run about 1905



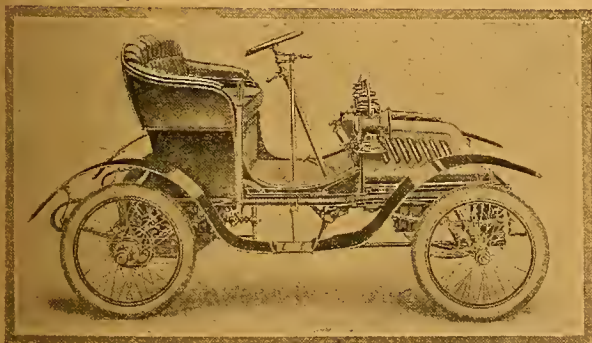
Plan view of the Vinet system of belt transmission made about 1901-2.

and later, and was a cyclecar when first introduced, but rapidly became a full blown motor car, as the requirements of customers were complied with and the strength and weight of the vehicle was increased to meet the conditions of bad roads here and abroad.

The introduction of the tricar perhaps prevented the development of the four-wheeled cyclecar type of vehicle. The tricar commenced with a motor bicycle and fore-carriage attachment, and gradually went through various stages until it reached its zenith in the form of a 9 h.p. twin-cylinder machine capable of speeds up to forty miles per hour. Some argue that increased power and weight were the death knell of the tricar; possibly true, but there were other circumstances which militated against its success.

It was neither so weatherproof nor so reliable as a small motor car, and the tandem form of seating was very much against it. As it died down the sidecar rose phoenix-like from its ashes, and up to recent times this form of motor cycle vehicle has been without a rival.

Talking of the phoenix, reminds us that this article would be incomplete without a mention of the Phoenix quad, a vehicle built by a firm who have been in the business from the earliest days, and who should know, if anyone does, what constitutes a cyclecar and when it was born.

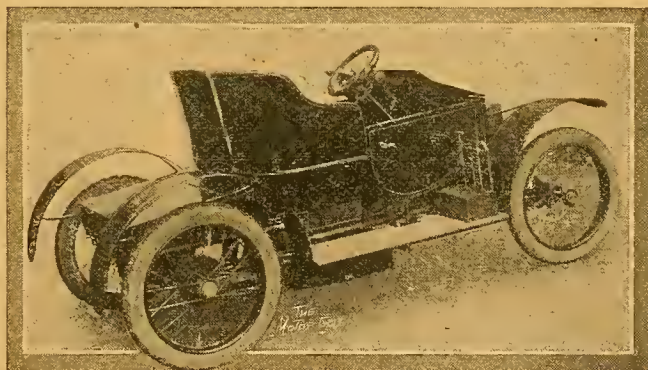


The De Dion Populaire. This was the first of this famous range of models with engine in front—previous De Dion voiturettes were practically enlarged quads with engine at the back.

**The Revival of Small Motor Cars.**

The revival of the runabout type of vehicle commenced practically with the introduction of a French car, described at the time by one who has studied motor design from its earliest days "as a somewhat cheeky adaptation of the motor cycle engine and transmission to a four-wheeler." The particular machine referred to is the Bedelia tandem, an illustration of which was published in *The Motor Cycle* of September 8th, 1910. A good deal of the credit for the revival of the motor cycle type of runabout as a commercial proposition must be given to the French; although several forms of runabout have been made in England by amateur and professional engineers at odd times, nothing perhaps caused so much comment as the Bedelia.

The manufacture of these novel quads was commenced on commercial lines, and instead of being made in ones and twos, they were produced in quantities. Doubtless others may claim to have revived interest in the light runabout previous to the introduction of the French machine named, but we can trace the increased interest which has been taken in cyclecars from the date of the publication of the description and illustrations of the Bedelia.



The 9 h.p. Riley, which had a V. twin engine with cylinders at 90°  
It was made in 1908.

The daily press about this time went into rhapsodies over what it termed the "poor man's motor car," and generally speaking there has been a little boom from the date referred to up to the present time.

To infer that the introduction of the cyclecar has been due to any one journal, firm, or person is totally absurd, and any such claim can be dismissed at once. Further comment on such a ridiculous statement would be superfluous to anyone with the slightest knowledge of motoring history.

The Bedelia had not been on the market very long before the old objection was raised to the tandem form of seats, and copies of this ingenious vehicle sprang up in every direction, many with sociable seats. English designers got to work and dismissed the somewhat crude form of changing gear by means of different sized pulleys, and adapted the motor cycle variable gear by means of expanding pulleys to two-seated cyclecars. Others went further, and provided motor car gear boxes and either chain or gear-driven balance-geared rear axles. Some went in for water-cooled engines, and the very latest developments include a twin or four-cylinder water-cooled engine, three-speed gear box, and bevel-driven axle with a differential.

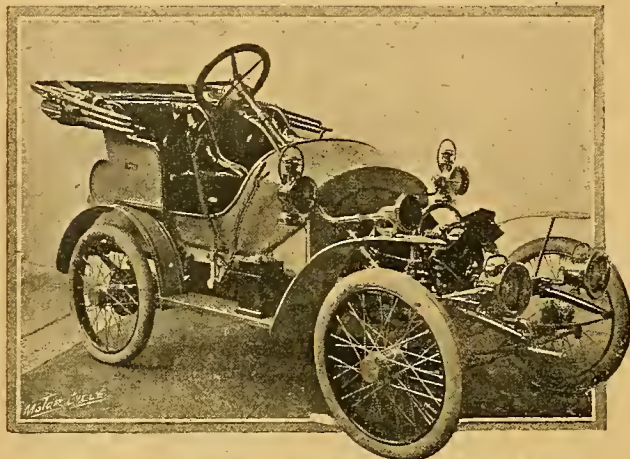


## The Evolution of Cyclecars.—

## History Repeating Itself.

The cyclecar movement has during the last year or two gone through the same phase as it did from, say, 1899 to 1904 with the exception that, instead of the single or twin-cylinder air-cooled three or four-wheeler becoming a four-wheeled water-cooled car of 15 to 25 cwt., it has developed from a belt-driven, air-cooled tandem or sociable into a gear or chain-driven water-cooled sociable of very light weight with a four-cylinder vertical engine.

Some argue that the last-named specification is not a cyclecar but a small car, and we are inclined to agree



The V.S. cyclecar exhibited at the Stanley Show of 1909. It had a 7 h.p. V twin air-cooled Peugeot engine. This photograph was reproduced in this journal on December 6th, 1909.

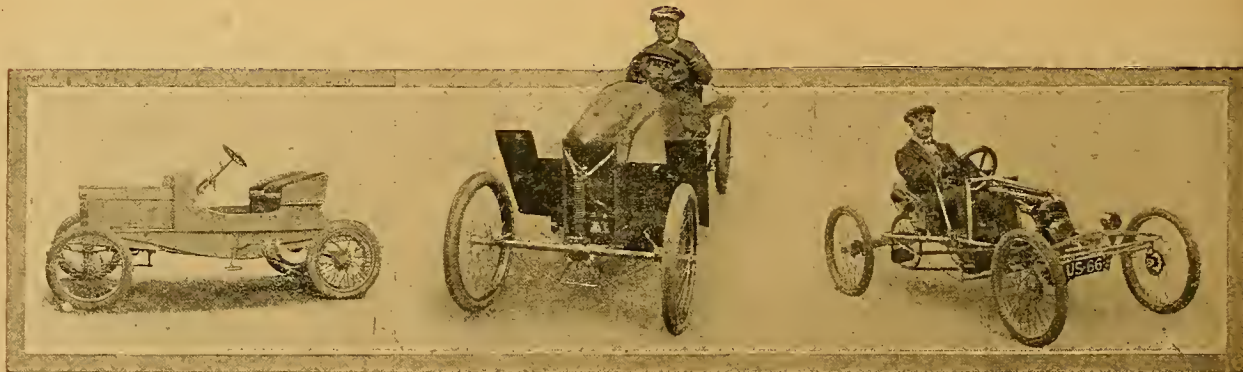
with them. The true cyclecar is one which embodies the characteristics of the motor cycle, and must naturally be of a lower-priced description, so far as cost of production is concerned, than that of a motor car. If a cyclecar be fitted with a four-cylinder engine, water-cooled, and all the adjuncts of a motor car, it cannot very well be produced for less than motor car prices, unless it be made in thousands instead of hundreds. The writer overheard two private-owner motorists discussing the subject of four-cylinder cyclecars which are produced and offered in the neighbourhood of £170, and the thing that puzzled them most

was that they had each paid over twice this figure for slightly larger cars which, in their opinion, ought not to have cost over 25% more, taking into consideration that only a little extra weight of material was used and the workmanship was approximately the same. They are still puzzling.

As our readers know, we have much competition in small cars in this country from the United States, where a full-sized motor car to carry four people can be sold for a sum much less than £200. Such vehicles are motor cars, and it remains to be seen whether those in search of a runabout which shall be more than a motor cycle, so far as comfort and weather proofness are concerned, will purchase a British-made small vehicle weighing about 6 cwt. chassis in preference to a larger heavier vehicle which will, in some cases, cost less and carry four passengers.

Of course, it is almost certain that it will cost more to run a four-seated Yankee runabout than a two-seated British-built cyclecar of the latest design. Firstly because the majority of the former have comparatively big engines for the weight they have to haul, and secondly because when they are supplied as four-seaters and occasionally two seats only are used they cannot be so economical as a 7 cwt. two-seated runabout. Another reason for increased maintenance is the fact that cars with large engines and only two speeds cost more to run than cars with smaller engines and a greater number of gear ratios.

In conclusion, we think we have shown that the evolution of cyclecars is to all intents and purposes the history of the motor car. What is called a cyclecar to-day was a motor car in 1900. For example, the 5 h.p. Humberette of 1903, the 6 h.p. Rover of 1905, Velox, 6 h.p. De Dion, and 9 h.p. Riley, all come within the cyclecar definition, and yet in their time were regarded as motor cars. If there is any novelty in connection with this type of vehicle it is the name only. Although we wish the revived type every success, it should not be forgotten that the motor bicycle is still and always will be the cheapest form of motor-propelled vehicle it is possible to make. This is a belief founded on the popularity of the pedal cycle, which remains the cheapest form of road vehicle ever invented. For this reason the addition of a sidecar renders the combination the cheapest motor-  
ing for two at the present time.



An amateur-ouilt four-wheeled cyclecar illustrated and described in "The Motor Cycle" of April 7th, 1910.

The original Bedelia propelled by an air-cooled V twin engine. From "The Motor Cycle" of September 8th, 1910.

Harold Dew's first spider quad built over two years ago, and described in "The Motor Cycle" of September 8th, 1910.



The  
Trusty

*Triumph*

for 1913.

*A number of improvements have been made, of which the following are a few.*

- |                     |  |
|---------------------|--|
| TYRES .. ..         | Heavier and more substantial, 2 $\frac{3}{8}$ in. Clincher de Luxe tyres, the studs are larger, the central ones are joined up to give a continuous running tread which will materially increase the mileage. They fit 2 $\frac{1}{4}$ in. rims. |
| ENGINE .. ..        | Re-designed valve pockets. positively prevents sooting of plug points.   |
| SILENCER .. ..      | Fitted with extension pipe to rear of wheel, splayed end, no back pressure, no cut out.  |
| CARBURETTER ..      | Fitted with gauze-lined cover to prevent ingress of dust and grit, considerably economises petrol consumption.   |
| MUDGUARDS ..        | Registered design front mudguard, wide and curved backward, effectively protects feet and power unit. Back guard wider and carried lower.  |
| TANK .. ..          | Fitted with very ingenious petrol gauge, dial on top of tank with registering finger.  |
| MAGNETO and CONTROL | Waterproof and handlebar controlled.   |
| 3-SPEED GEAR ..     | Sturmey-Archer with Triumph Special Gear and clutch control.   |

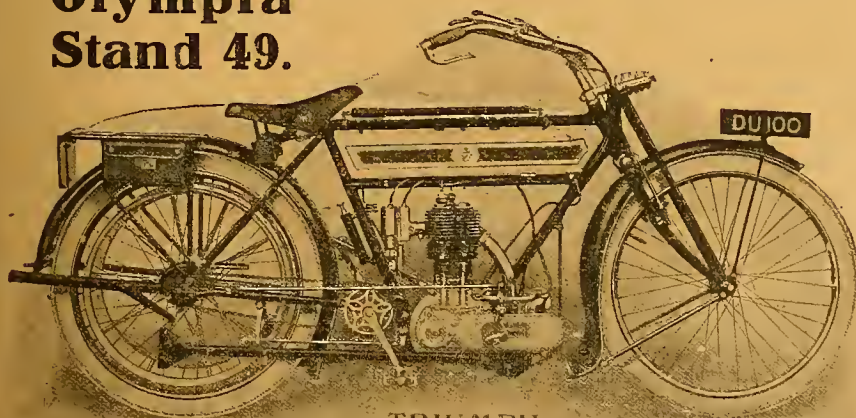
Models will include Roadster with Free Engine; T.T. Roadster; and T.T. Racer.

#### NEW MODELS.

Roadster with Sturmey-Archer 3-speed Gear.

T.T. Roadster with Free Engine.

**Olympia  
Stand 49.**



TRIUMPH  
FREE ENGINE MODEL

**Triumph  
Cycle Co.,  
Ltd.,  
Coventry.**

LONDON:  
4/5, Holborn Viaduct, E.C.

LEEDS:  
4, King Edward Street.

MANCHESTER:  
160, Deansgate.

GLASGOW:  
14, Waterloo Street.

AGENTS  
EVERYWHERE.



## SEE THAT TREAD?



Both in design and thickness, it is  
ABSOLUTELY "TROUBLE-PROOF."

# Insist on "Continental" Motor Cycle Tyres

when ordering your  
new machine.

**STAND 8** OLYMPIA **STAND 8**  
Cycle and Motor Cycle Show.

The Continental Tyre and Rubber Co. (Great Britain), Ltd.,  
3-4, Thurloe Place, London, S.W.



## ACCESSORIES for PASSENGER MOTOR CYCLES.

It is scarcely possible to generalise about the right type of accessory for the cyclecar, because the design of the vehicle ranges from what is practically a four-wheeled edition of the 500 c.c. bicycle to a miniature duplicate of a Rolls-Royce. The principal factor in both the design and purchase of the equipment must invariably be lightness. The novice's temptation will be to imagine that since he has plenty of space he can add any luxurious fittings which attract him irrespective of weight; and to forget that a few bulky fittings will have the stopping effect of an extra passenger by dint of either weight or wind resistance. I append a few considerations, especially with regard to cyclecars.

### Wind Screens.

Heavy glass screens are ruled out by sheer weight, and by the fact that a transparent screen is intended to be used at a comparatively vertical angle, which will absorb 1 h.p. when forced against a breeze. Celluloid screens are too inflammable, talc screens are not really transparent. The wise cyclecarist will protect his lower person by a deep scuttle dash, preferably of leather or waterproofed fabric on light metal stretcher rods, brought well up to the top front edge of the steering wheel at a well-raked angle; or by a hinged and adjustable opaque screen of similar construction; and will trust to goggles and head wear and storm coat for shielding his upper storeys against inclement weather. The weight and wind resistance of a full-size, vertical screen are too big a handicap for a genuine cyclecar.

### Cape Hoods.

The Cape cart hood is outlined in classical mythology in the guise of a leather bag, in which the god Æolus kept the wind. A hood is all very well when you have 20 h.p. to push it through a storm with, but it is quite out of place on a light cyclecar. If bought, it should be regarded as a tent under which the passenger may seek temporary and stationary protection in a tropical downpour; but for actual travel in heavy rain, oilskins are infinitely preferable. A proper hood would stop a genuine cyclecar down to a crawl in rough weather; if we pile on enough power to push a gipsy van at 20 m.p.h. against a gale we shall kill the cyclecar by over-development.

### Lamps.

The cyclecar will travel as fast as a biggish car, and it needs penetrating illumination. My own plan is to carry one centrally mounted 6in. head lamp, fed by two small motor cycle generators, so saving 50% on the weight of an ordinary four-wheeler lighting system. The same generators will simultaneously feed two baby acetylene head lights, little larger than turkey's eggs; or some may prefer a brace of miniature electric side lamps, which save messing up the generator for a five-mile run in the dusk. Long experience in the wiles of tail lamps has made me an enthusiast for the "Dependence" type in a smaller size.

### Toolkit.

An extended toolkit is advisable for a vehicle which has springs and other parts which may require lusty handling, and my plan is to buy one of the big tool-rolls, costing 30s. or so, and empty its contents into a small leather handbag of the kind in which running men carry their spikes, zephyr and shorts. If a duster is stuffed in on top of the tools they will not rattle, and are easily accessible. Delicate spares should be separately stored. The toolbag reposes handily under my thighs on the floorboards.

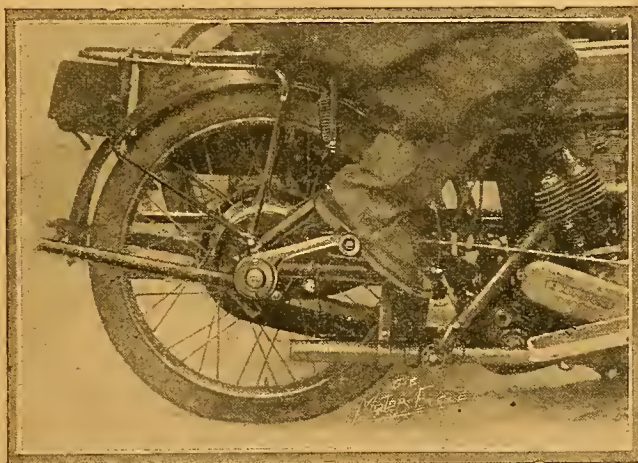
### Hooter.

A really penetrating alarm is very serviceable, especially on cyclecars provided with only two gears, which cannot easily be got back on to top gear when baulked half-way up a longish rise. Exhaust whistles have to be carefully used in these days of new laws, but their penetration and lightness make them very suitable, if they are courteously used, and not employed in the vicinity of police or population. Otherwise an electric horn is very good. The modern electric horn possesses a reliability which its predecessors never boasted, and its one drawback is the need of carrying a special accumulator or dry cell for it.

### Personal Luggage.

In respect of luggage the cyclecar should be regarded as a glorified motor bicycle, and stern self-restraint is advisable. Of course, if a lady be the passenger, some leniency will be compulsory. In this case the tailboard is the correct location. Placed there a suitcase entails no extra wind resistance, and its weight will make the wheels bite on greasy hills; but it is wise to buy her a special suitcase, and 15s. will purchase a featherweight waterproof case of flattish outline, and large enough to house a sufficiently killing toilet.

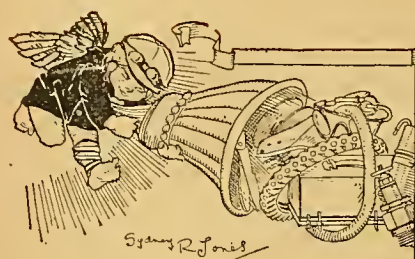
B. H. DAVIES.



HANDLE OR KICK STARTER.

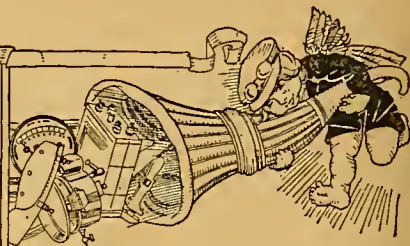
Our photograph shows a combined hand and kick starting apparatus fitted to a 6 h.p. Rex two-speeder, and for which a patent has been applied for. It consists of an encased ratchet running in an oil bath and having a recess for a copious supply of oil. It was designed by W. R. Cooke, of Nottingham.



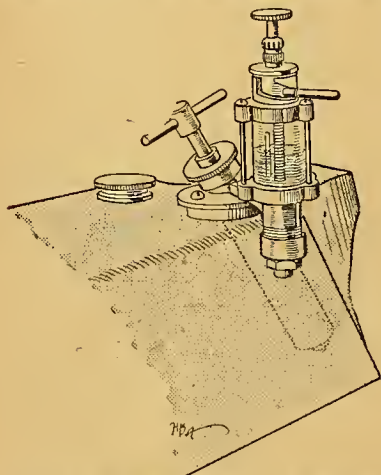


## ACCESSORIES.

Some Novelties for the  
Olympia Motor Cycle Show



A. C. Davison, 163, Arlington Road, Camden Town, N.W., the well-known manufacturer of tanks, filler caps, gauges, and pumps, has lately introduced an ingenious and simple sight feed lubricator, which works in conjunction with his tapless oil pump. The lubricator consists of a glass reservoir containing a certain quantity of oil, which is allowed to flow by gravity into the engine, the flow being



Davison patent continuous sight feed lubricator.

controlled by means of an adjustable needle valve.

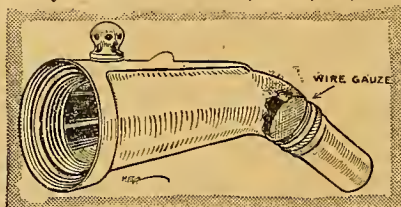
If the tapless oil pump be filled and the handle depressed the oil normally passes from the tank by means of the pump into the glass reservoir, and the lubricant will now feed by gravity into the engine as fast as may be desired, according to the adjustment of the needle valve. Should, however, it be required to inject a pumpful immediately, the lever on the top of the drip feed must be pushed over to the left. This slides up an inclined plane, lifts the needle valve off its seating, closes the air vent, and allows a full pumpful of oil to be delivered to the engine. The amount of oil in the glass reservoir does not matter in the slightest, as the air vent being closed there is an air cushion behind a quantity of oil, and even though the reservoir be half full this quantity will remain unaltered and a full pumpful be delivered to the tank.

Mr. Davison has lately taken up acetylene welding, and is undertaking the repair of broken cylinders, crank delivered to the engine.



Brown Bros.' grease injector for filling gear boxes. The top of the syringe is ball shaped, allowing the plunger to be easily pushed home.

An ingenious and useful attachment for fixing on to the filler cap of a petrol can will be exhibited by the Safety Petrol Filler Co., Ltd., 20, Vic-



A filter for attachment to petrol tins.

toria Street, W. This enables the liquid to be poured out freely, and at the same time filters it by means of a strainer. The device possesses a nozzle of small dimensions, which is detachable, so that the gauze therein can be easily cleaned. It is also ingeniously fitted with two threads, so as to fit petrol tins with large or small orifices. The company is also making a speciality of a material known as CyKling, which is a preparation claimed to prevent belt slip on either rubber or leather belts. When used on the latter it acts as a preservative. Each block is packed in a neat box holder.

Several improvements have been made in the Watford speedometers, made by Messrs. Nicole, Nielsen, and Co., Watford, for 1913. These instruments are made with the greatest accuracy and



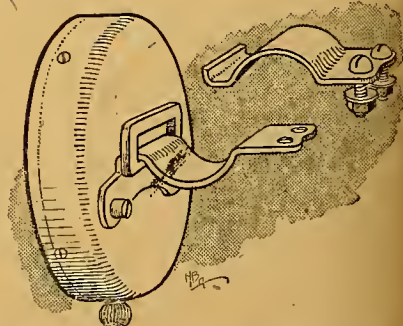
The Watford speed indicator, with watch attachment below.

care. An innovation will be a motor cycle speedometer registering in kilometres, which should appeal to foreign riders, with trip registering up to 999 kilometres. Up to the present time, the Watford speedometer has not registered

the tenths of a mile; but this innovation will be introduced into the 1913 models.

Another novelty will be a Nicole-Nielsen watch to attach to the handlebar. This is sold in a well-made case. The case is a particularly neat and well-finished job, and, being free of flutings and projections, should be easy to clean. The clip by means of which it is attached is similar to that used on the speedometer, and is secure and ingenious.

A speedometer model has been introduced, in which a match case is attached to the complete instrument. In the mechanism itself the chief alteration is



Back of Watford machine watch, showing simple and effective method of attachment, which is also used on the Watford speedometer.

the introduction of worm drive for rotating the registering mechanism off the governor. Formerly a ratchet drive was employed, and, while this was quite satisfactory and possessed the advantage of always registering in the forward direction irrespective of the machine being wheeled backwards, the worm drive has been found to be better and to give a more accurate reading.

The Forward sparking plugs, belt fasteners, etc., will be found on some of the accessory stands. The principal novelty for 1913 is the patent steatite plug. This is made with a solid nickel rod and heavy nickel points. The steatite insulator is held in place by hermetic cement, which, it is claimed, is unaffected by heat. At the base of the steel body is a copper washer on which is seated a detachable sleeve containing the cement and steatite. It is, therefore, possible, by undoing the sleeve, to remove the insulator and the nickel rod complete from the body of the plug. This is claimed to be a revolution in sparking plug construction. The Forward Cycle Company, Edmund Street, Birmingham, also make other types of single, two and three point plugs, and plug holders, also the Forward ejector sparking plug, particulars of which have already appeared.



## There's the Saddle—

of all fitments responsible for your ease  
and comfort more than any other, and—

**There's the Show**—which presents  
to you an exceptional opportunity of ensuring  
that comfort by a personal inspection of the  
various types which are offered to the Public, and—

**There's the BROOKS**—the only  
saddle in which that comfort-creating feature—  
**THE BROOKS PATENT COMPOUND  
SPRING**—can be embodied.

If you're looking for luxury  
you should call.

# BROOKS

## There's the Bag—

upon which your convenience is equally  
dependent and, again—

**There's the Show**—where you can  
examine the many luggage-carrying devices  
which are being made to-day, and—

**There's the BROOKS**—a range of  
Bags and carrying specialities which cover  
every need—

You should see these, too, and note that  
both saddles and bags will be on view at

**Stand  
231 Gallery, Olympia.**

If you cannot call, ask for the  
**BROOKS BOOK**—  
it is free.

**J. B. BROOKS  
& Co., LTD.,  
49, Criterion  
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BIRMINGHAM**

*Note that a full range  
of the BROOKS Cycle  
and Motor Cycle  
Specialities may also  
be seen at our London  
Showrooms—Criterion  
House, 11, Grace St.,  
Shaftesbury Avenue,  
W.C. (Oxford St. end).*





The 1913

Red

*Indian*

Means:—

Greater Luxury . . . . .

Increase of Speed . . . . .

Simplicity of Control . . . . .

Silent Running . . . . .

Slow Speeds on Top Gear . . . . .



It is owing to the many improvements and refinements, which, to quote *The Press*, make it

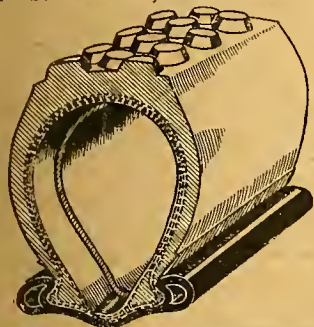
**“ONE OF THE FINEST MOTOR CYCLES  
YET CONSTRUCTED.”** . . . . .

The HENDEE MANUFACTURING CO.  
Goods and Repairs—89, Bolsover Street, London, W.



## Among the Accessories.—

The Continental Tyre and Rubber Co., Thurloe Place, South Kensington, S.W., will be showing their standard De Course model, which remains as before, though the tread is now made slightly heavier. The well-known basket pattern will be retained, and the rubber-



The Continental heavy rubber studded tyre, studded pattern is now made in all sizes. A heavy combination type has been introduced, while 28in. x 2½in. tyres are made for Indian and other machines with 28in. wheels. The combination is also made in the 700 x 80 mm. size for A.C. and other cyclecars. For sidecars, the well-known Autobi tyre will be retained, also the rubber non-skid and the steel-studded. The exhibit will also include Continental belts of all sizes and the various rubber accessories made by the firm.

The Rom Tyre Co., 31, Brooke Street, Holborn, E.C., will exhibit two new covers—650 x 65 mm. and 700 x 80 mm.—for fitting to voiturette rims. These will be provided with square treads, and are intended for those motor cyclists who use sidecar machines or cyclecars and do not require non-skid tyres. They possess a very heavy tread, and should be most durable.



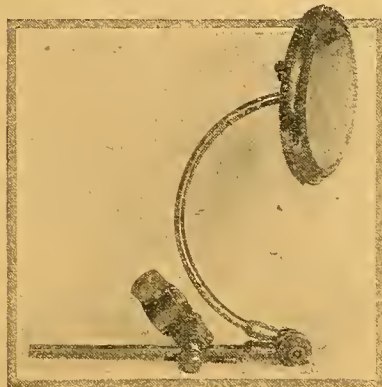
The Rom square tread voiturette tyre.

The firm is also specialising in a 3in. tyre of the well-known combination rubber bar and steel studded pattern to fit motor cycle rims. The combination tyre in many sizes and Rom belts will also be on view.

There is little doubt that the accessory exhibit of Alfred Dunhill, Ltd., 359 361, Euston Road, N.W., will be a most interesting one. Among the novelties we may mention a ball-jointed handle-bar

mirror, which can be so adjusted that the light from the lamp may be reflected back on to the machine, thus enabling a tyre to be repaired or other adjustments effected after lighting-up time. A very handy little accessory is the pocket petrol filter and case. Quite a novelty, and a speciality of Messrs. Dunhill's, is a chrome leather band designed to be inserted inside the cover and between it and the tube. It is practically unpuncturable and has been tested by several riders on the flinty roads of Norfolk with considerable success. It is easily fitted, and only needs a slight application of solution just to hold it in place while it is inserted, after which the air pressure will keep it in position.

Another simple but handy accessory which should appeal to many who have not a proper motor house in which to store their machines is a grease tray, which, if the machine is left in the hall, may be placed underneath the crank case

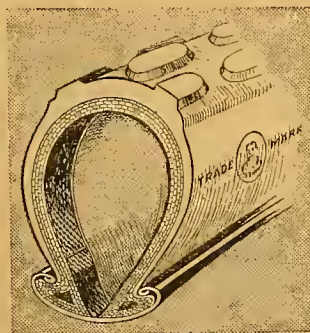


Dunhill's handle-bar mirror, which can be used to reflect light on any portion of the machine needing adjustment after dark.

to catch oil drippings and keep the floor covering clean.

Another novelty is a match and cigarette holder for fixing on to the handle-bars.

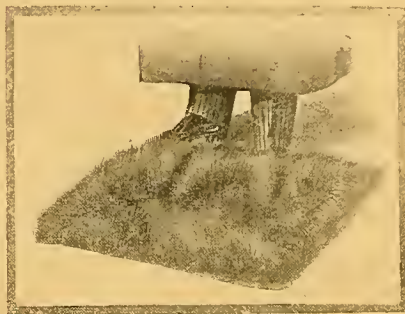
Motor cycle garments of all kinds and types will be on view, while amongst the novelties in this department will be a sack rug for sidecar passengers. It is made of plush, is very warm, and is fastened round the body by the aid of glove button fasteners, and therefore, easily donned and doffed. Another novelty is a camel fleece smock, which takes the place of a coat lining, so that even if a light thin coat be worn the



Dunlop Pillion tyre for passenger machines.

rider is sufficiently protected from the cold.

An interesting accessory will be the Kerry motor cycle lamp, marketed by the East London Rubber Co. This is fitted with a special bracket, so that the lamp can be turned up and down or



Kerry foot muf.

turned completely round so as to facilitate repairs after dark. Another novelty will be a toolbag fitted with a recess for each tool; this is held in position by means of springs so that rattling is impossible. The East London Rubber Co. also make a speciality of a sidecar stand. As regards clothing, a novelty is a sidecar foot muf made in two styles—square for the ordinary basket, or V-



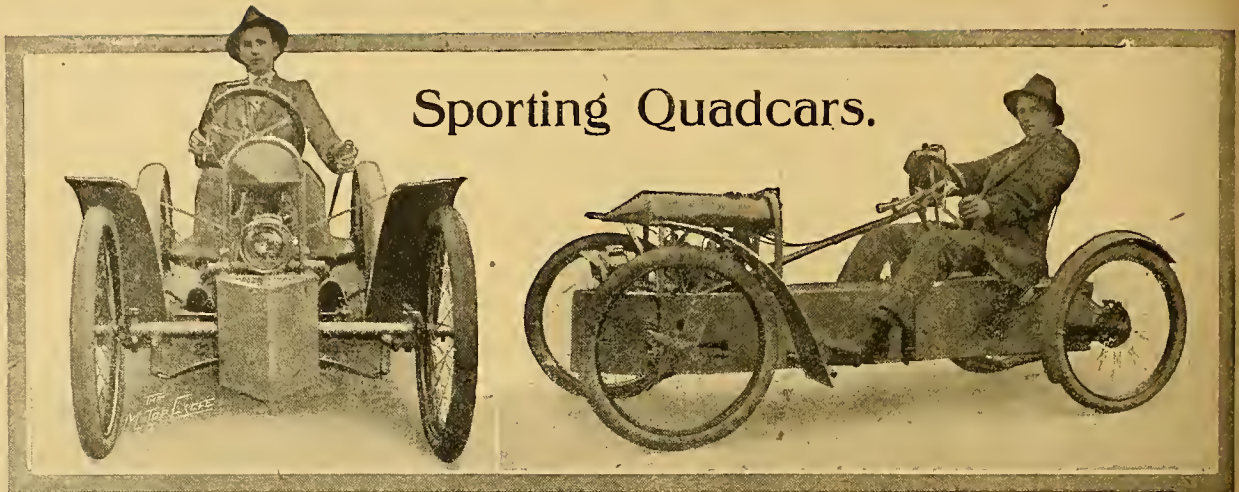
The Kerry camel fleece under-jacket.

shaped for the canoe type of sidecar body.

A very useful article of clothing is or may be worn loose under a thin coat, a camel fleece under-jacket, which is made so that it may be attached by means of spring buttons to an overcoat, or may be worn loose under a thin coat. Another very useful article of clothing is a waistcoat lined with beautifully soft chamois leather, and possessing Italian cloth sleeves lined with the same material. The firm will be showing the "Shackleton" cap, of which we have already made mention: it is lined with fur, which can be unfolded and serves to keep the ears warm. A double-breasted oilskin coat with a storm fastening, which is absolutely impermeable to wet, will also be shown among other articles of clothing.

(To be continued.)





## Sporting Quadcars.

H. E. Dew's latest spider quad, side and front views. This single seated four-wheeler is propelled by a twin-cylinder engine.

L.M.

This neat design of four-wheeled cyclecar, previous models of which have been described from time to time in *The Motor Cycle*, and of which we reproduce a photograph of the latest model, has, practically speaking, undergone no



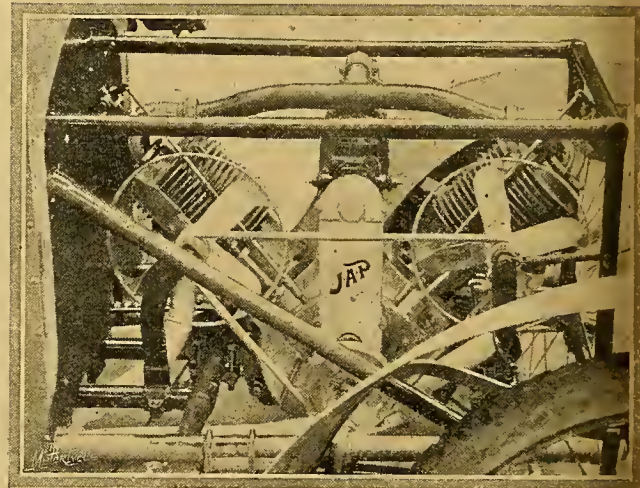
Three-quarter view of the latest L.M.

alterations outwardly, but at the same time it has been considerably enhanced in its general appearance. From front to rear, the mechanism may be described

as follows: The engine is of the well-known 8 h.p. J.A.P. twin type, fitted with B. and B. carburetter and Bosch high-tension magneto. From the engine the power is transmitted by Renold chains to the clutch and two-speed gear box mounted on the counter-shaft. Thence, the drive is again by chain to a live back axle fitted with differential gear. Adjustment is provided for both chains, and a point worthy of notice is that the engine may be started from the driving seat. The complete vehicle, which is well-sprung fore and aft, and weighs approximately 5 cwt., fitted with Auster hood and screen, presents a smart appearance. All four wheels are shod with 26 x 2 1/2 Michelin tyres. Three inch tyres are fitted as an extra.

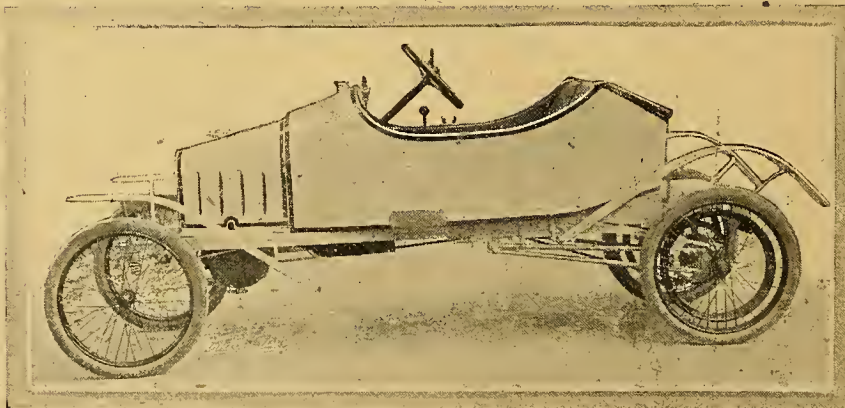
GORDON.

A visit to Mr. Gordon Armstrong's works at Beverley revealed many improvements to the Gordon cyclecar, the first example of which was made three



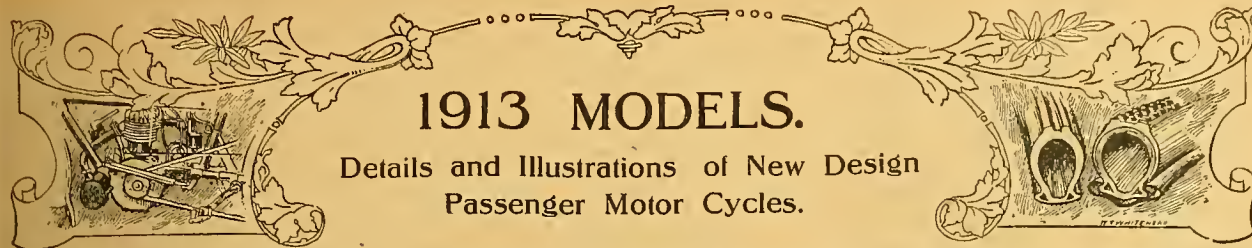
The power unit of the Gordon. The engine is a J.A.P., with cylinders at 90°. Three inch tyres are

years ago. The engine now used is the 8 h.p. J.A.P. with cylinders at 90°, 85 x 95 mm. bore and stroke, giving a cubic capacity of 1 078 c.c. This engine is much more vibrationless than that fitted to previous models. Chain drive and a three-speed and reverse gear box have been standard for the last two years, and have proved most satisfactory. The Ferodo lined brakes are very powerful and smooth in action, either foot or hand brake being sufficiently powerful to hold the machine on any hill. The engine is started on accumulator ignition and afterwards switched over to the magneto. Two large fans are used for cooling purposes, one to each cylinder. The framework of the body is very novel, being built of tubes with the chassis; the seats are on the hammock principle and very comfortable. In a trial trip of 800 miles in the Lake District and Scotland, the car performed exceedingly well and climbed Kirkstone Pass on second speed.



The Little Indiana four-wheeled single-seated machine with central steering.



**8 h.p. WILLIAMSON.**

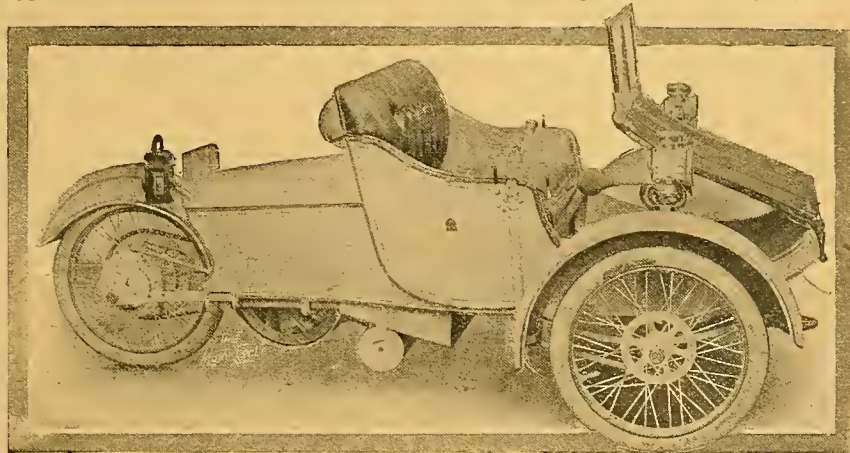
The Williamson has been designed from start to finish as a sidecar machine, and the engine, frame, and transmission are all of sufficiently robust proportions to withstand the extra strain. At the same time, it must not be imagined that it cannot be ridden solo. We ourselves have enjoyed a very comfortable solo run on an air-cooled model. The engine is manufactured on the well-known Douglas lines; that is to say, it has two horizontally opposed cylinders with the connecting rods actuating opposed cranks. A large outside flywheel is fitted, which adds materially to the smooth pulling. The engine has a capacity of 964 c.c., and is rated at 8 h.p. It can be had in either water or air-cooled models. The engine is connected to the two-speed gear box by chain, and the drive to the rear wheel is similar. The gear box is a strengthened replica of the Douglas, and a leather-to-metal cone clutch is employed.

In future models a spring drive will be fitted to the rear wheel to absorb transmission shocks. (This device was described and illustrated in a recent issue of this journal.) The frame is of peculiar construction, most of the tubes being in duplicate. The saddle gives a particularly low riding position, and long footboards add to the comfort and appearance of the machine.

26 x 3in. tyres are fitted, the tank has a capacity of one and threequarter

gallons of petrol and half a gallon of oil, and standard gear ratios are  $4\frac{1}{2}$  and 7 to 1. The whole machine has an unusual, but businesslike, appearance, and the engine runs with that pleasant absence of vibration which is common to the horizontally opposed twin.

they have decided upon very few alterations for 1913. The following machines will be on view at the Show: A three-seater painted cream, fitted with hood, screen, and all accessories; a two-seater painted standard green, without extras; a two-seater painted blue, fully equipped

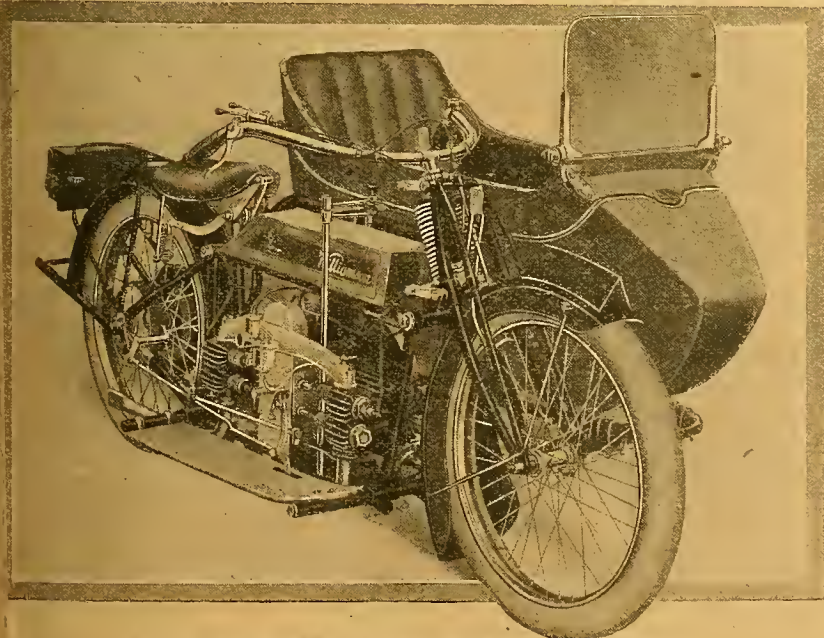


1913 model A.C. sociable, the chief alteration to which is the lengthened wheelbase.

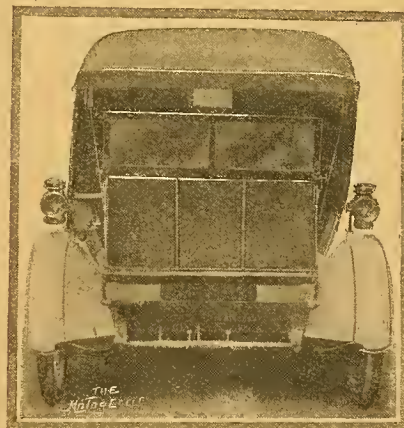
**A.C. SOCIABLES.**

The manufacturers of the A.C., Auto-Carriers, Ltd., Thames Ditton, are so well satisfied with the present models that

with all extras; a two-seater fully equipped, painted grey; and a two-seater painted silver grey. It is certain that the finish of the A.C. sociables will appeal to all tastes. An interesting exhibit will be an unpainted A.C. fitted with De Luxe body, showing the material



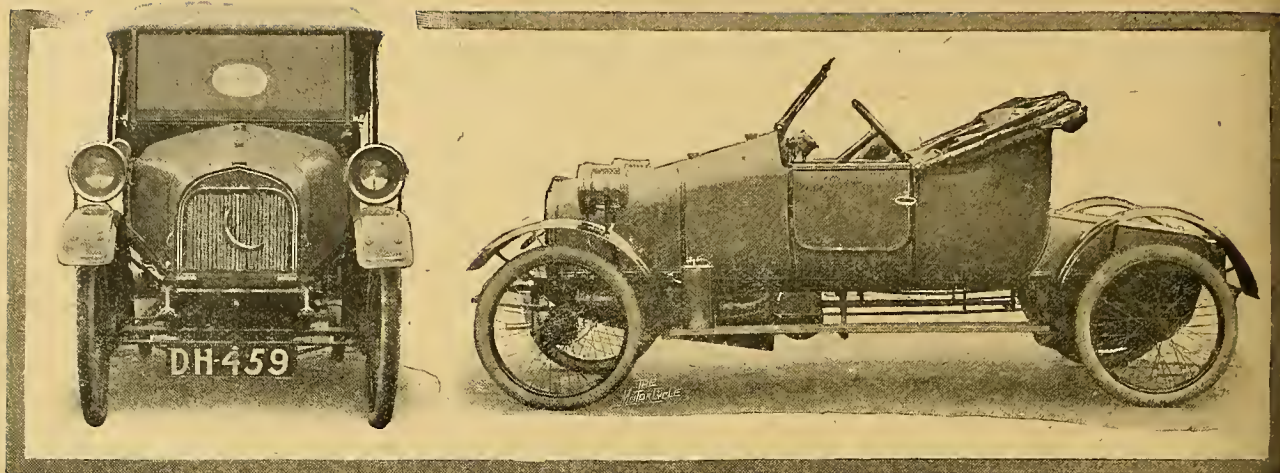
The latest model of the 8 h.p. air-cooled Williamson, with Canoelet sidecar.



Front view of A.C. sociable. Attention is directed to the inside extensions to the mudguards.

and workmanship of the coachwork, which is carried out entirely at the company's works. All the 1913 models will be of the De Luxe type, and will be fitted with the latest type of engine, which has a bore of 95 mm. and a stroke of 102 mm





Front and side views of the latest friction-driven Crescent.

### CRESCENT.

In our issue of October 31st we dealt, briefly, with the mechanical features of the Crescent friction-driven cyclecar, and now we reproduce photographs of the latest model complete with sociable body fitted with hood and screen. These illustrations convey a good idea of the very smart appearance the complete machine presents, and we can testify that the finish is as good as the general appearance. The lines of the machine are particularly pleasing, there being no abrupt breaks in the body line; and it is evident that comfort has been studied hand in hand with appearance. Points worthy of note are the toolbox at the back, the wide entrance, and the neat manner in which the bonnet hinges forward allowing easy access to the twin air-cooled J.A.P. engine. The acetylene head lamps are carried by brackets fixed to the front mudguards. They therefore show the extreme width of

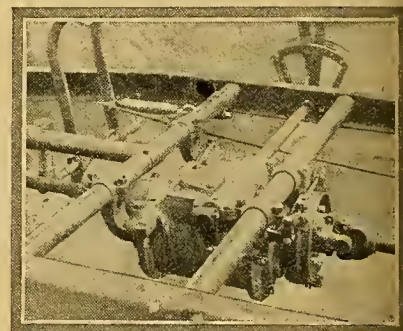
the car and do away with the necessity of carrying side lamps. This is a good point, provided the mudguards are well-braced to the frame and the lamp brackets firmly fixed to the mudguards, as is the case in this instance.

### CHATER-LEA.

The latest Chater-Lea cyclecar chassis, which we were privileged to see recently, is a production well worthy of the firm responsible for its construction. The whole is designed and built on sound and well-tried lines, and there is nothing experimental about it.

The frame is of channel steel, strongly stayed by means of tubular cross members, inswep at the front, so as to provide an ample lock, and is suspended on semi-elliptical springs fore and aft. The 85 x 85 V twin Chater-Lea engine is set transversely in the frame on special brackets, and is supplied either air or water-cooled.

The cone clutch is of the ordinary leather-to-metal type with external springs, rendering adjustment easy. Between clutch and gear box there is a sliding joint forward and a flexible joint at the rear. The connecting-shaft between clutch and gear box is in two pieces, so



The Chater-Lea cyclecar three-speed and reverse gear box, and external Ferodo lined brake and universal joint.

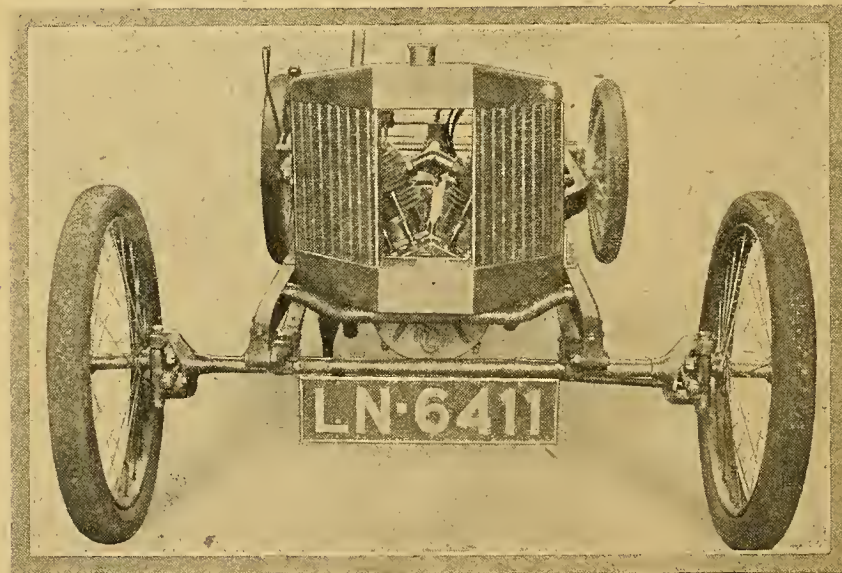
that by undoing the joint in the centre the clutch may be conveniently withdrawn.

The gear box has been improved in design, and now provides three speeds and reverse, while the change is effected through a gate. Behind the gear box on the gearshaft there is an external brake of approved design, with a simple means of adjustment.

The forward end of the propeller-shaft is fitted with a universal joint of the pin type, while at the rear there is a hexagonal sliding joint. The final drive is by over-head worm. No torque rod is fitted, the torque being taken by the springs.

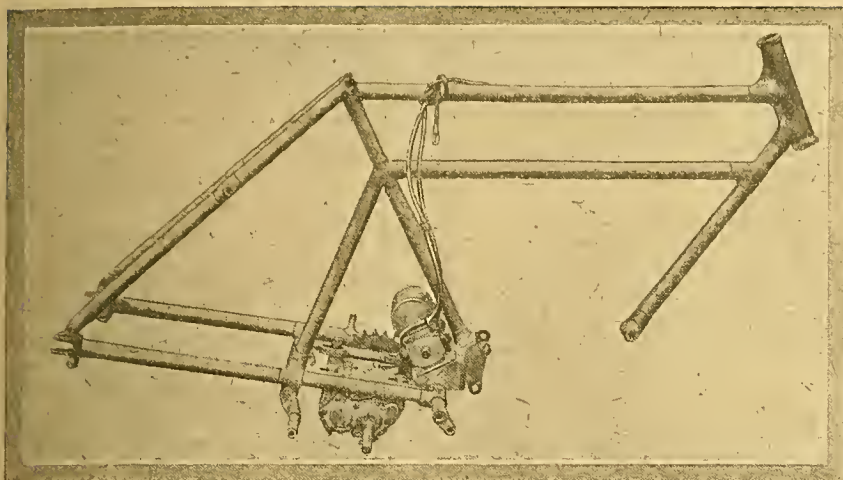
The front axle is tubular, and the steering pins are provided with ball bearings. The steering is direct, a system which Chater-Lea, Ltd., have found to be perfectly satisfactory.

The radiator designed for the water-cooled model has been photographed, firstly, to show the method of carrying it; and secondly, to depict the door in the centre through which is obtained easy access to the valves. The air-cooled



Front view of Chater-Lea cyclecar chassis, showing new radiator with centre door for allowing easy access to valves. The radiator is here shown on an air-cooled chassis merely to denote the manner in which it is fixed.





New Chater-Lea No. 7 sidecar frame showing method of carrying three-speed gearbox and magneto.

model will probably be provided with a cylindrical tank over the engine, with gauze at the sides to allow for good air circulation.

As regards control. The throttle and air levers are on the steering column. The brake pedal operates the internal expanding brakes on the rear wheels and the side lever the gearshaft brake.

The latest No. 7 Chater-Lea sidecar model has a frame with special brackets behind the bottom of the saddle tube on which the magneto and gear box are carried. That provided for the gear box is slotted so that the chains can be easily adjusted.

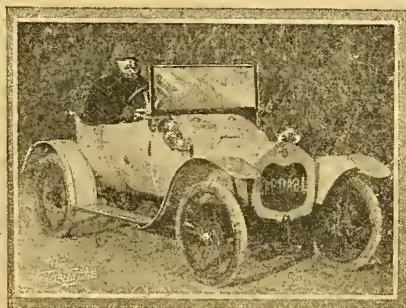
## AUTOTRIX.

Three designs of the Autotrix are standardised by Edmunds, Wadden and Co., Weybridge, namely, an 8 h.p. water-cooled, 8 h.p. air-cooled, and a 6 h.p. water-cooled, the first two involving the use of J.A.P. engines, the latter of a Fairair.

The 8 h.p. water-cooled car, with body a little larger than the standard, is a very different vehicle from that shown at Olympia last year.

This is true, not only of the body, but of the chassis. The special features that the designers have endeavoured to secure are comfortable seating accommodation for two, good leg room and weather protection, coupled with efficient and comfortable springing, and particular attention has been given to the last point, for it is especially upon the springing of the back wheel that the makers consider the success of the three-wheeler depends.

Accordingly, in this registered design, the springs are so constructed as to be effective with a great variety of shocks, from the smallest to the largest, the smaller being taken up by the longer part of the spring, while the shorter part only comes into operation when certain stresses are exceeded. It is claimed that this effect can be obtained without allowing the back wheel to cant when rounding corners or on highly cambered roads: consequently no trouble is experienced with the chain getting thrown out of alignment.



6 h.p. P.D.A. cyclecar, which has two speeds and is shaft-driven.

One model is built for commercial travellers' use, a class of work to which the makers are giving considerable attention, and for which there is certainly a demand.



The latest Autotrix three-wheeler, with radiator on dash.

## BEDELIA.

The general specification of the Bedelia is probably fairly well-known. In the case of the two-cylinder models duplicated steering cables are now fitted, and the possibility of backlash reduced to a minimum. A different design of brake is also now fitted to the counter-shaft.

It is worth noting that in the two-cylinder engine (the bore and stroke of which, by the by, are 80 x 100 mm.) the cylinders are set at an angle of 90°, which enables a very good balancing effect to be obtained about as good as it is possible to obtain in a twin-cylinder V-type engine.



Singer new design of bottom bracket for pedalling gear on the 4½ h.p. machine.

The proof of the pudding is in the eating, and although we have not tested the Bedelia engine for absence of vibration with the system of balancing employed, we can well believe the claim made by Mr. L. N. Palmer, that a glass full of water can be placed upon the petrol tank immediately over the engine when running without any of the water getting spilt, and articles may be placed on the wings while the engine is running quite fast and yet not be shaken off.

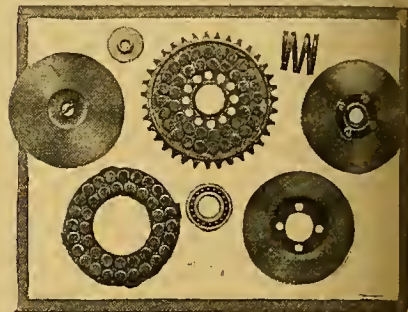
The front suspension has been improved, so that a lateral motion is provided to enable the chassis to accommodate itself to almost any road inequality that can be



## G.W.K.

One of the finest cyclecars of the season has undoubtedly been the G.W.K., made by G.W.K., Ltd., Datchet, Bucks. This is one of the few vehicles of this type which has consistently proved its worth in various reliability trials and competitions. So successful has it been that the makers have decided to make no startling alterations, but to pay attention to a few details in which improvement might be effected.

For example, the rear axle is now made of special nickel chrome air-hardened steel with a tensile strength of 120 tons. They have done away with all

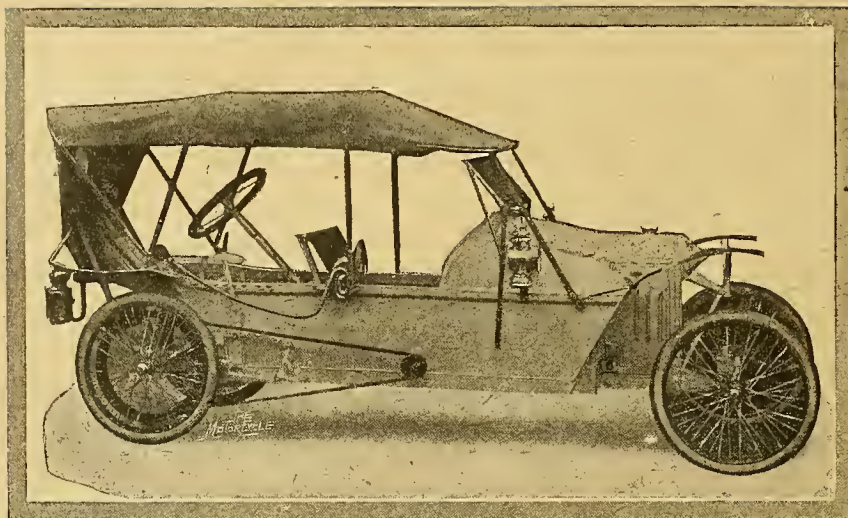


Component parts of the A.J.S. free engine clutch which has cork insets.

cone type ball bearings, their place being taken by ring type bearings. Riley detachable wheels are employed, and the brake drums have been enlarged. The chassis has been generally strengthened where necessary.

## Brough Cyclecar.

The Brough firm are manufacturing a cyclecar which has a twin-cylinder 85x95 engine driving a three-speed gear of the sliding dog type by chain, another chain transmitting the power to the rear axle, which has no differential. The body is coach-built, and the chassis is sprung on semi-elliptical springs throughout.



A 1913 Bedelia cyclecar, with hood and wind screen.

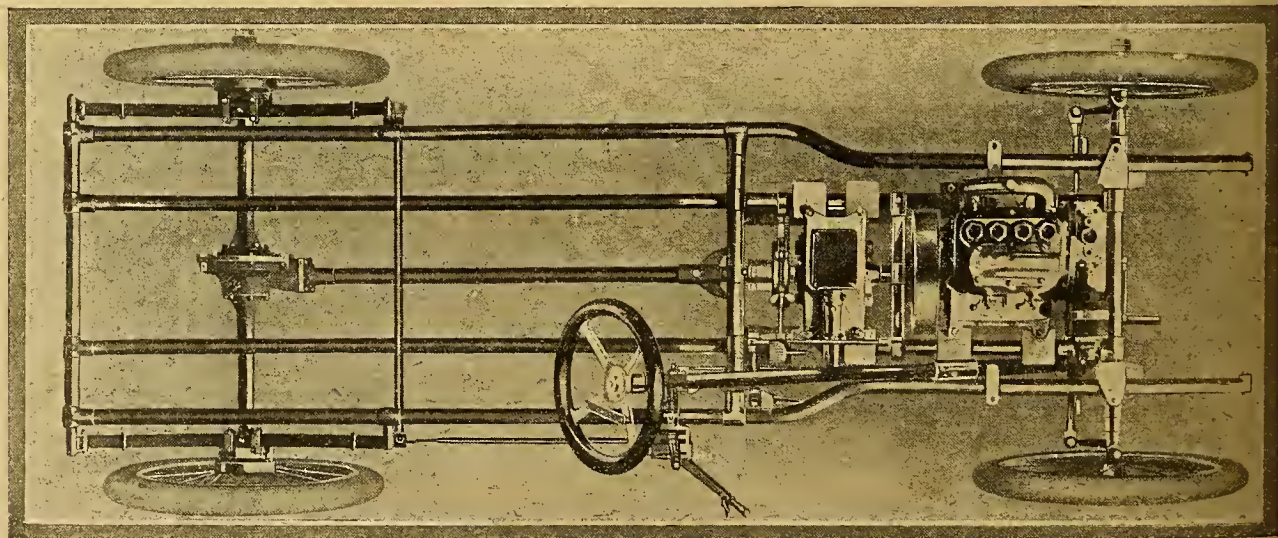
surmounted by wheels. This is effected by a special form of shock absorber contained in a box underneath the coil spring that is enclosed in the brass telescopic casing.

It is doubtful whether the new models will be ready in time for the Show, but, in any case, the Bedelia exhibit will be an imposing one, comprising among other things, two models, each fitted with a distinctive magneto—the one of the new Alterno type, the other a new Gibaud, both, of course, specially designed to fire cylinders at 90°.

## G.N.

G. N. Higgs and Co., 31, Vauxhall Bridge Road, S.W., will exhibit G.N. cyclecars solely. Among the exhibits will be a polished chassis, which should attract a great deal of interest, as it will be a novelty among cyclecars. It is interesting to note that Mr. Higgs was

one of the earliest cyclecar users in England. His experience, therefore, in the construction and handling of these vehicles is probably unequalled. The G.N. runabout is fitted with a twin-cylinder 80 x 98 mm. engine, with the cylinders set at 90°. The engine is slightly out of the common, in that it has a long outside bearing to the crankshaft, a big external flywheel, and the timing gear in a separate unit. There are only two timing wheels, two cams, and four rockers operating the valves for each cylinder. The inlet valves are of the overhead mechanical type, operated by ball-ended tappet rods. The fan is mounted on a hinged bracket, the hinge allowing the fibre friction wheel to be held against the flywheel by means of a spring. The transmission is by chain to the counter-shaft, on which is mounted the two-speed gear, and thence to the back wheels by belts.



## NEW SWIFT CYCLECAR.

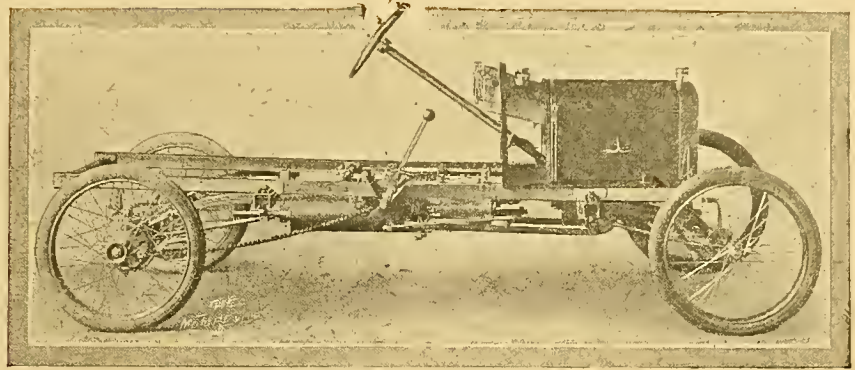
This machine was described and illustrated in our last issue. It has a 6 h.p. twin-cylinder engine, three-speeds, shaft drive and tubular frame.



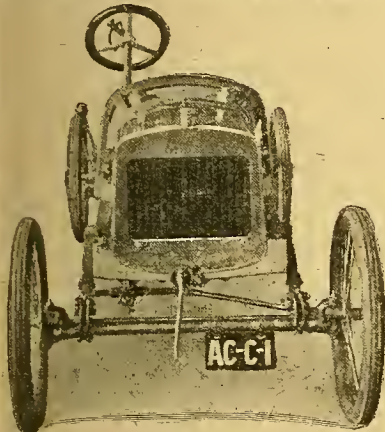
## INVICTA RUNABOUT.

The Invicta is a very smartly designed cyclecar made by Mr. H. E. Clarke, of Clarendon Square, Leamington. We recently inspected one of these machines and found Mr. Clarke busily preparing an example of the Invicta for exhibition. The engine, an 8 h.p. J.A.P. water-cooled, 85 x 85 mm., drives through a leather-faced cone clutch and propeller-shaft to a three-speed Chater-Lea gear box. Thermo-syphon cooling is employed and the water pipes are very large.

The handle starter is geared up by means of a skew gear, thus enabling an easy start to be made. We agreed with Mr. Clarke that handle starting on small twin engines with magneto ignition was rather uncertain unless a gear were employed. In addition to gearing up the



Broadside view of the Invicta.



Front view of Invicta runabout.

starting he has fitted an exhaust valve after which operates by Bowden wire and lever, the latter being attached at the corner of the frame.

The Bosch magneto is bevel driven off the timing shaft. The gear box provides three speeds and reverse, with direct drive on top gear. A universally jointed shaft runs between the gear box and clutch shaft, and also between gear box and bevel cross drive, which is on a counter-shaft behind the gear box. From this cross-shaft to the rear axle the drive is by a single chain. The live rear axle evolves in Skefko bearings attached to

the spring boxes, and only one wheel is keyed to the shaft, the other being connected by a friction clutch plate in the hub. A strong spring holds the friction clutch sufficiently tight to prevent the wheel from slipping when the vehicle is travelling in a straight line. When it is turning a corner it is claimed that sufficient slip takes place to enable one wheel to over-run the other, and so dispense with a balance gear.

The springs are quarter elliptical, and torque rods are provided front and rear, the latter being adjustable to allow for chain stretch. Two external brakes are fitted to the back wheels and one on the counter-shaft behind the gear box. The two former are operated by side hand lever and the latter by pedal. The clutch is also pedal operated.

The main frame is of wood with inside angle plates, the cross members being tubular and brazed to lugs bolted to the frame. There are four ordinary cross members, to two of which are attached the gear box and cross counter-shaft. The front cross member is of angle steel and on it is fixed the geared starting handle, etc. The engine is supported by a sub-frame of tubing, and the same sub-frame supports the gear box.

Steering is by rack and pinion; the tanks for petrol and oil are concealed in the dash, as also are the oil pump and drip feed lubricator.

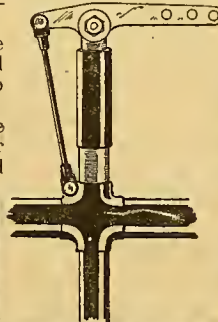
One of the simplest things on the vehicle is the quadrant for the gear change lever. No gate is employed, and

yet it is almost impossible to make a mistake in changing gear. The silencer is of large dimensions, divided into four compartments with the holes decreasing in size towards the end, the final exit of the gases being through a single pipe with flattened end. The torpedo-shaped body is upholstered in leather, and all body corners are nicely shaped off. At the rear a large luggage grid provides ample space for touring bags; underneath it is a box for spares, the top being finished off with a rubber mat. The wheelbase is 7ft. 9in., track 3ft. 11in., and the chassis weight under 6 cwt.

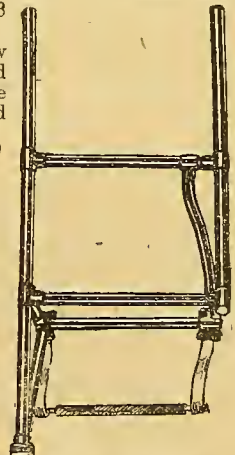
## MONTGOMERY.

Montgomery sidecar improvements include cantilever springs in place of the ordinary cee springs; these are very sensitive, have an increased range of action, save 5 to 6 lbs. in weight, and are readily adjustable to accommodate passengers from 8 to 14 stones.

There are also new attachments fitted with double security locks, and

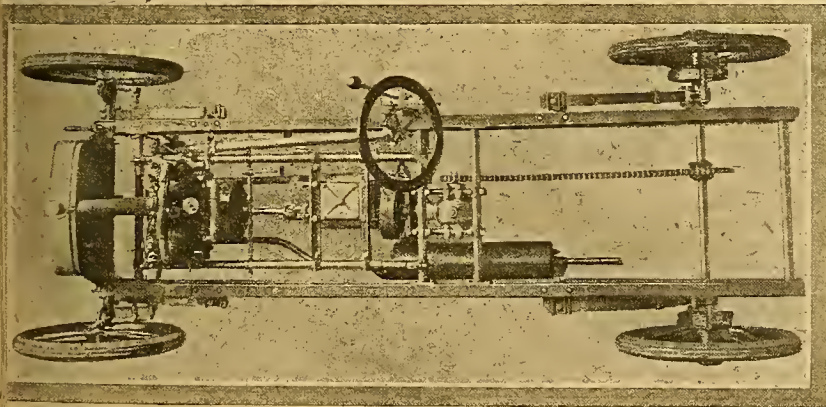


Cantilever springing on the new Montgomery. A spiral spring is enclosed in the tubes.



Unbreakable trussed frame on the Montgomery.

providing adjustment for bringing the sidecar axle parallel with the ground, and also in perfect alignment with the bicycle. This is a most important improvement, because the sidecar wheel can be made to run perfectly upright (even if a 26in. wheel sidecar be used with a 28in. bicycle wheel, or *vice versa*). Perfect alignment adds considerably to easy running, removes fear of spindle breakage, and distributes the weight evenly on both springs instead of straining the spring nearest to the bicycle.



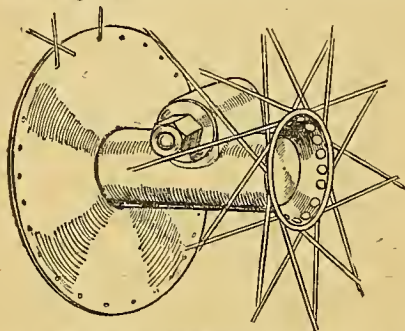
Plan view of chassis of Clarke's Invicta runabout.



## 1913 Models.

The frame has received special attention, and a new design produced, strengthened in every part, and strong enough for use with the highest powered motor bicycles.

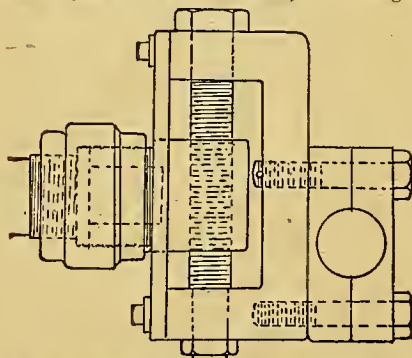
The hub has been made rain and dust proof, by providing the mudguard stay bracket with a flange which half encircles the hub and extends as near as possible to the spokes.



Method of securing Humberette rear wheels with a cotter pin.

The luggage capacity has been improved by providing a sprung grid which accommodates a two-gallon can of petrol, tool box on the lower part, and a specially made valise on top.

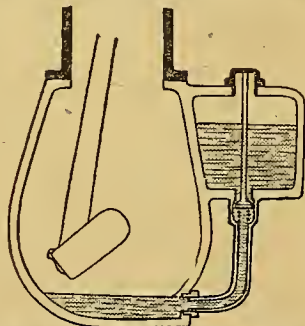
The front extension and lateral adjustment of the frame, used for the past ten years, is retained, although



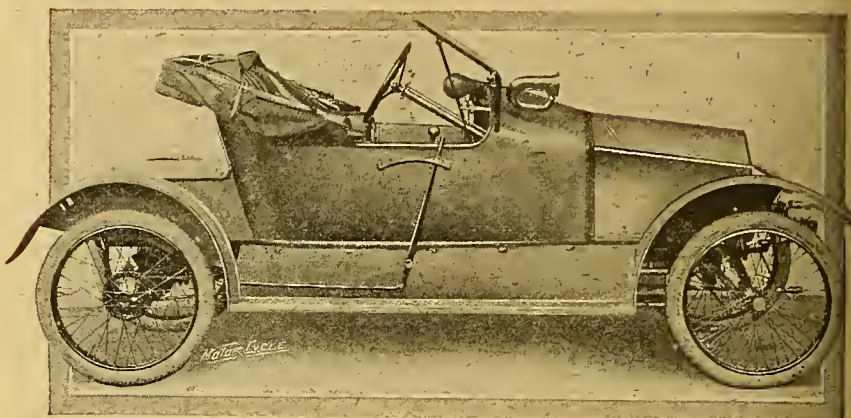
A Montgomery sidecar feature. Adjustment for height of rear portion.

strengthened in all parts to meet the requirements of high-powered machines and fast speeds.

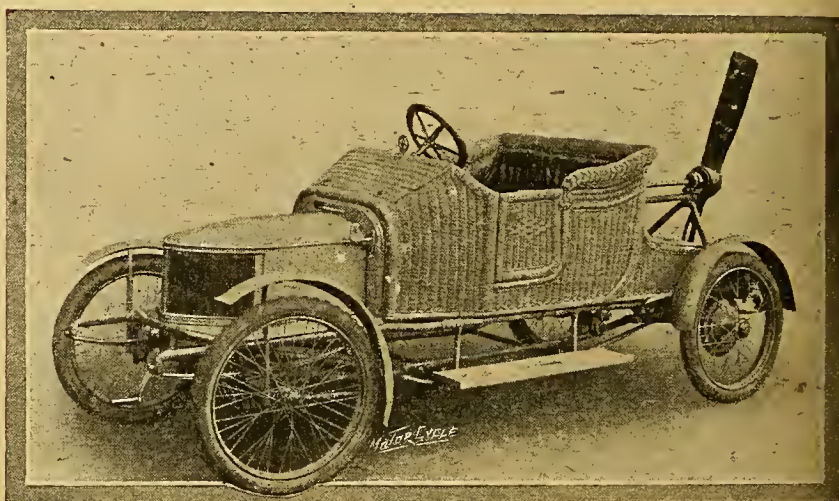
Special attention has been given to the bodies, both in coach-built, cane, and wicker work; deep seats, low backs, and ample leg room being special features. Weight has been considerably reduced.



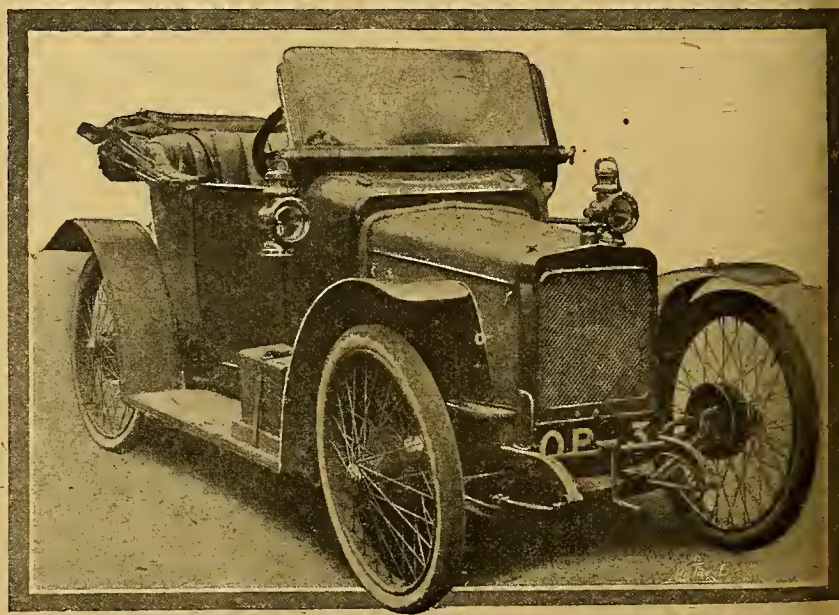
The automatic lubricating system on the new Swift cyclecar. See last week's issue, pages 1264-1265.



A fine example of the Humberette, which has an air-cooled engine, three-speed gear, and shaft drive.

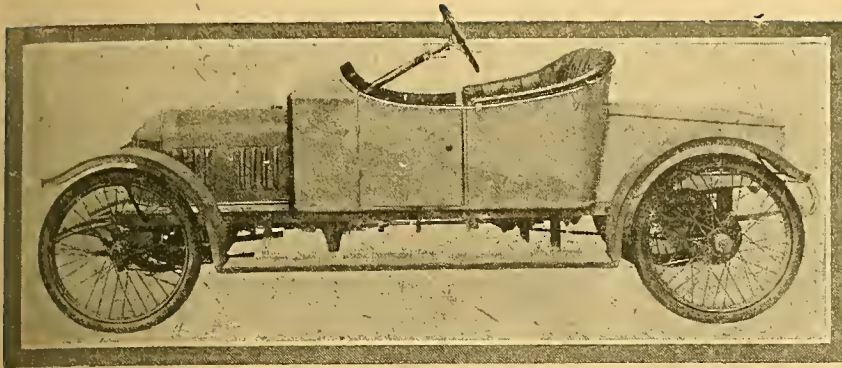


An experimental wind-propelled light car, built by the Beacon Engineering Co. A 3 h.p. J.A.P. engine drives the propeller. A fair speed is possible on the level, but on hills the car is not such a success.



This handsome design of cyclecar may have been seen by readers in the Midlands. It is to make its first appearance at Olympia, but at present we may not divulge its name.

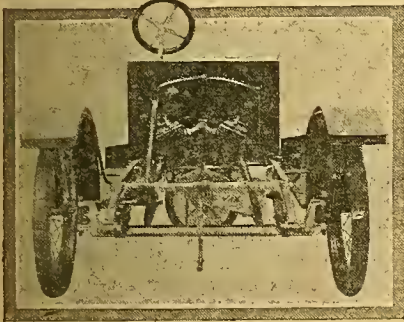




Broadside view of the 8 h.p. Autocrat.

## THE AUTOCRAT.

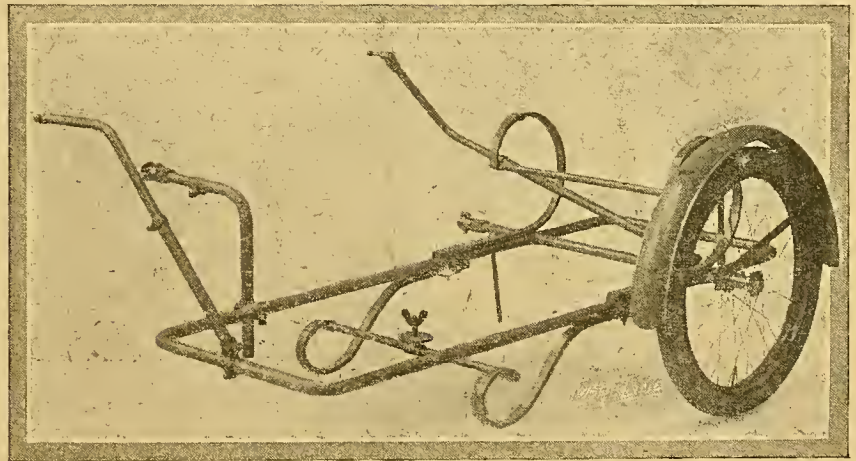
The Autocrat is the production of Mr. W. Ivy Rogers, trading as the Autocrat Light Car Co., Gough Road, Birmingham. The chassis is of channel steel, upswept at the back, while the front axle is dropped, giving a low centre of gravity. The frame



Front view of the Autocrat.

is carried on semi-elliptical three-leaf springs. The 8 h.p. J.A.P. engine and transmission up to the gear box are carried on a sub-frame of angle steel, secured to three tubular cross members, which also carries the clutch control mechanism. A fan (not illustrated) is fitted to assist in cooling the engine. The transmission is by shaft to the gear box, thence by chain to a balance geared back axle. The gear box is

of the sliding gear type, and a gate change is fitted. The clutch is of disc pattern, with one central disc leather-faced on both sides, and is so constructed that there is no thrust on the engine-shaft or gear box pinion. A universal joint connects the propeller-shaft with the engine-



Design of the Wilton Cycle and Motor Co.'s sidecar chassis.

shaft. Steering is effected by rack and pinion. The lubrication is by automatic adjustable drip feed from the dashboard. The petrol tank contains four gallons, and

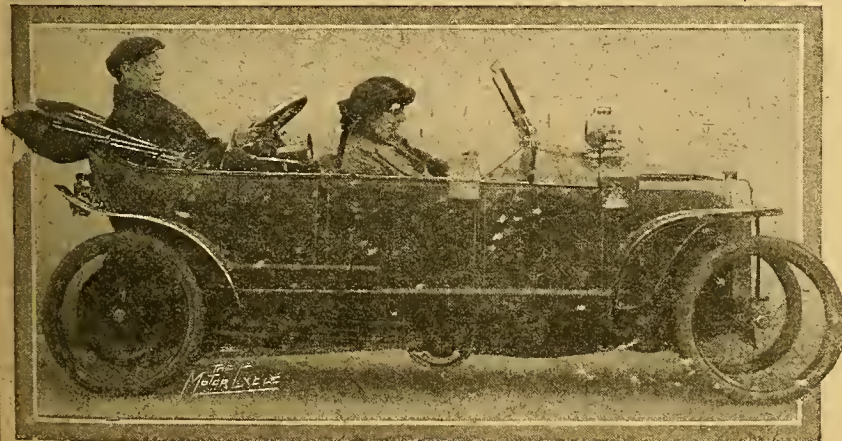
the petrol consumption is about 40 m.p.g. Accessibility to all parts has been aimed at, and Amac, Lukin, or Binks carburettors are fitted to order. Two brakes are fitted to each rear wheel, one internal expanding and the other external contracting. The wings are shrouded, and there is a long step board. The wheelbase is 7ft. 6in. and the track 3ft 10in.

The body is of taking appearance, with a long dashboard, and is upholstered throughout in real leather. It seats two, and there is ample leg room for tall persons. The brake and gear levers work inside the body. At the rear is a luggage box with a hinged lid, which for a slight extra cost may be fitted as a dicky seat. 650 x 65 mm. tyres are fitted. The weight complete as given to us is 7 cwt. and chassis weight 6 cwt.

A four-cylinder water-cooled model is also made, in which the same design is observed.

## WILTON SIDECAR.

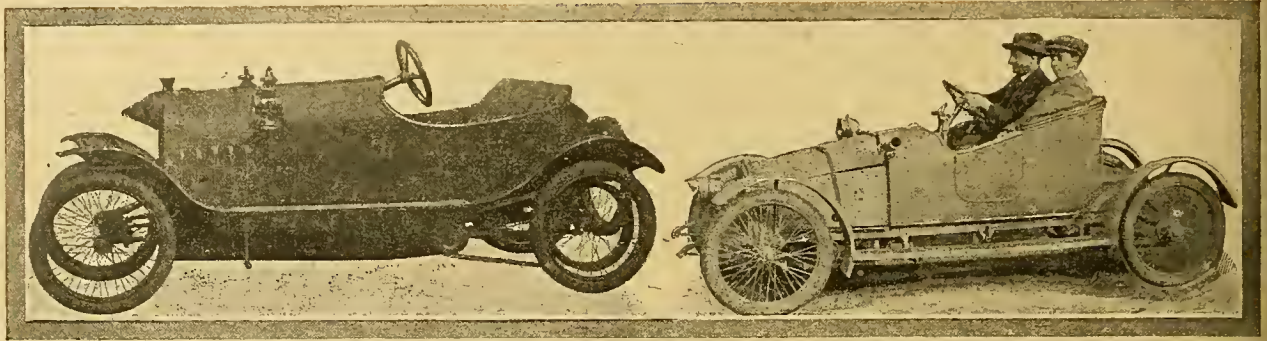
The speciality of the Wilton Cycle and Motor Co., Wilton Road, S.W., is a



The latest type of Rollo cyclecar, with tandem seats.

sidecar of their own manufacture, which possesses a rectangular frame; the chief point in its construction is the use of an additional stay from the centre of the forward part of the frame to a special fitting, which clamps round the lug and tube of the diagonal member of the motor bicycle. The springs are in two parts, one portion being above the frame and the other below. The lower one carries the footboard, which is fastened by a butterfly nut. The attachments are conical pegs on the machine, fitting into conical holes on the sidecar frame, the whole being secured with the aid of a nut. The bodies for this sidecar have been carefully selected; one in particular is provided with a patent leather body, which substance has been found to wear better than the ordinary coach finish. It is fitted to a sidecar known as the "family" model, and has a child's seat in front. Stern aprons are provided with back extensions to fit over the shoulders, or completely to cover in the body of the sidecar when empty. The latest pattern single-seated bodies are gracefully swept away underneath, thus giving ample room for a tool box below the seat.





The G.N. runabout, a racy looking belt-driven machine, fitted with a twin-cylinder engine. The G.N. was one of the earliest cyclecars.

The experimental Douglas, which has an 8 h.p. horizontal engine. It will not be exhibited at Olympia.

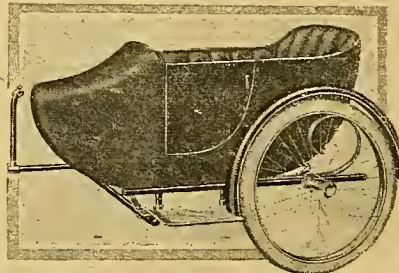
## QUADRANT.

The new 7 h.p. twin engine which this firm is making for the coming season has already been described in *The Motor Cycle*, and the following notes relate to the rest of the machine.

As this model is intended for sidecar work, permanent lugs are attached to the frame. A chain drive is employed with a two-speed gear forming the counter-shaft. It works on the double-clutch principle, and gives a direct drive on both gears. The chains are completely enclosed in oil-bath cases, and the gear is controlled from the top of the tank by a gear lever supported by the top tube. The one end of the counter-shaft is contained within a hole cut in the wall of the chain case, so that the adjustment of the gear can be carried out without taking this off. In order to make the case dust proof, an aluminium disc cast integrally with the footboard is made to register with the hole, making a very neat and readily accessible fitting. Best and Lloyd drip-feed lubrication is furnished, whilst the specification also includes a Bosch magneto and any of the leading makes of carburetter, at purchaser's option. The petrol tank holds two gallons of petrol and three pints of oil.

650×65 heavy tyres are fitted to both wheels, whilst the mudguards are also of sensibly large dimensions. A new type of spring fork is used which

follows the original Quadrant design, but is furnished with an additional spring for taking up the rebound. The sidecar chassis, which has been specially designed for this machine, is four-point suspended. Special rails are provided on the back of the sidecar body to allow a spare tyre to be carried very con-



The Supreme sidecar. This coach-built sidecar is constructed of three-ply birch; no metal is used in the framework. Note the step for the use of passenger.

veniently. No carrier of the ordinary kind is fixed on the back of the machine itself, but instead a very large one is attached to the sidecar.

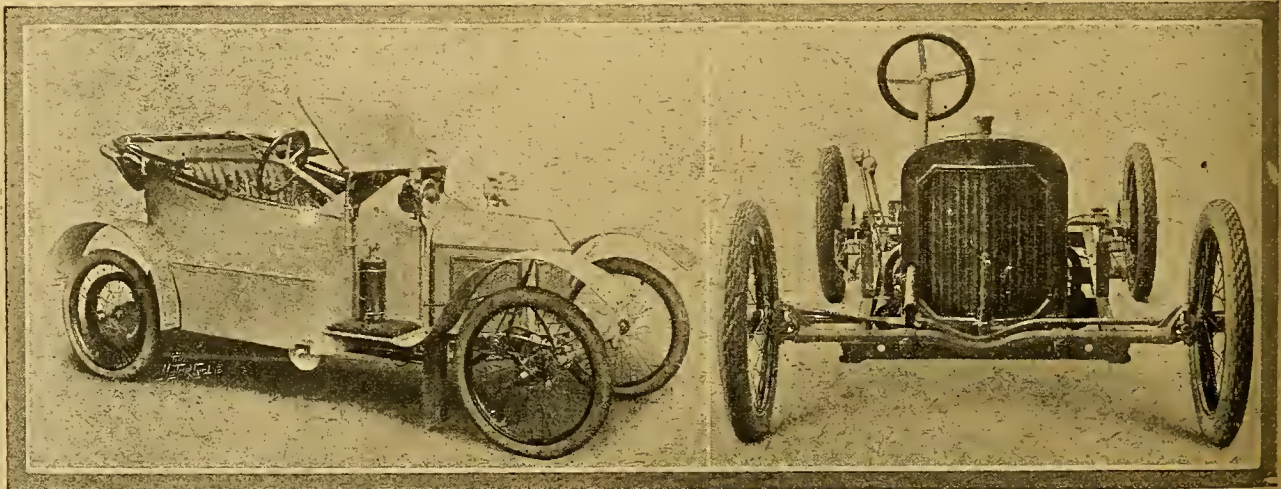
The Quadrant Co. will have at the Show a 3½ h.p. model fitted with a three-speed Humphris gear. This is a very interesting form of transmission, in which each of the gears is direct. Three

equal sized driving pinions with specially formed spherical teeth mesh with three concentric rings of spherical holes in the driven plate attached to the hub, the whole being enclosed in a weather-proof case.

The 4½ h.p. standard machine with a bore and stroke of 87×95, and fitted with overhead inlet valves, will also be shown. A T.T. model will be on view.

## SCOTT.

There are no radical alterations in the Scott, but several minor improvements to details. For instance, four-point attachment lugs for sidecar are brazed into the frame; the tank filler is no longer on the steering head, but a special filler is incorporated with the saddle lug, which makes the filling of the oil tubes an easier matter; the chain sprockets are so fitted that they can be exchanged for solo or sidecar work without removing the change speed gear; the engine is made with air-cooled heads, thus effecting a saving in the size of the radiator and weight; the lubrication system is improved; further improvements have been made to the spring fork; the tank is now leather-covered, which enhances the appearance of the machine; and the chains are entirely hidden by side chain shields. Other small details have also been attended to, such as the improvement of petrol fillers and strainers.



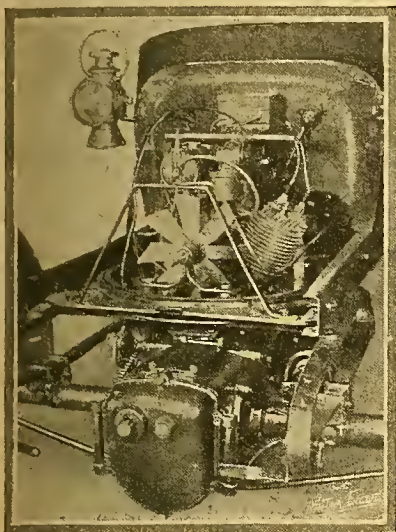
The Duo, a sociable-seated runabout, propelled by a twin air-cooled engine.

A friction-driven twin-cylinder four-wheeler, built by the Rex Co.



## THE LEO.

The Leo, which is sold by Derry and Toms, High Street, Kensington, W., has the whole of the power unit in the forecarriage, and the front instead of the rear axle is driven. The engine is an 8 h.p. J.A.P. 85 x 85 mm. The gear box contains two speeds, a reverse, the clutch and bevel drive to the front wheels. The engine is partly cooled by a chain-driven fan. The steering is by crown wheel and bevel, the latter being attached to a short



Power plant of the Leo cyclecar (front view), showing gear box on front axle, fan-cooled engine, etc.

shaft carrying a worm which meshes with a segment on the movable part of the forecarriage. The petrol tank is carried inside the dash. The engine can be started by means of a starting device from the driver's seat. The steering column is pivoted, and can be adjusted to any angle or height to suit the driver. The large Bowden lever on the offside of the dash controls the change-speed. The frame is hung on semi-elliptic springs in front and transverse spring behind.

## PHANOMOBILE.

Although the No. 1 Phänomobile is the only model bearing this name that, strictly speaking, comes within the definition of a cyclecar, the No. 2 T design is, from the motor cyclist's point of view, to all intents and purposes a cyclecar, and, moreover, it exemplifies a very neat adaptation of the torpedo body of Phänomobile design. The car is fitted with a 10-12 h.p. engine, having its two cylinders of 82 mm. bore and 110 mm. stroke placed side by side, as first introduced in 1912. A Claudel-Hobson carburetter and magneto ignition are fitted. The air cooling of the engine is assisted by a fan, which also serves to keep the mechanism free from dust. For 1913 we understand that the Phänomobile firm is retaining the well-tried and very effective epicyclic gear, and the chain drive. Mechanically, the design for 1913 only differs from that of the previous year in very minor details, but it is worth noting that detachable rims can now be fitted to order.



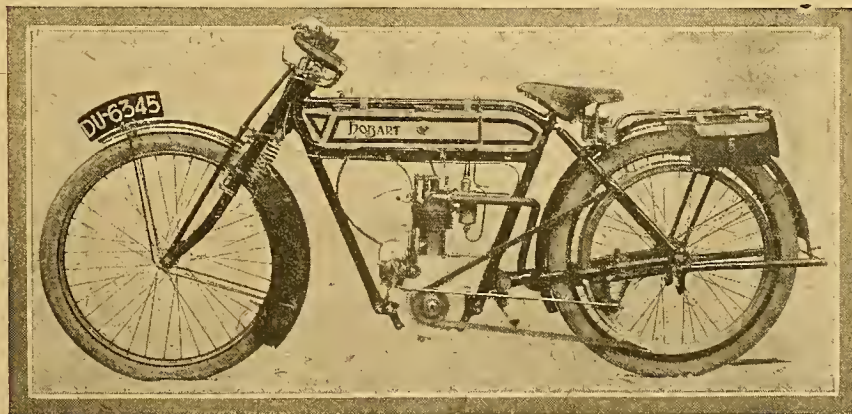
Side view of the Leo, the front steering axle of which machine is driven.

## THE PONETTE.

The Ponette is another vehicle of the cyclecar type, but bordering closely on the small car. It has a four-cylinder engine of 65 x 110 mm., thermo-syphon circulation, and multi-tubular radiator. Lubrication is by plunger pump, delivering oil from the tank on the dashboard to a trough in which the big ends dip. The internal clutch is of the ordinary leather-faced cone type, and the gear box contains two speeds and reverse, the final drive being by bevel. The pressed steel frame is unswept at the front and upswept slightly at the rear, the springing being by means of semi-elliptical springs front and threequarter elliptical rear. The steering is by worm and segment, and the control of the engine by accelerator pedal. It will be exhibited by N. A. Stevens, Godwin and Co., 19, Brick Street, W.

## THE KERRY.

The East London Rubber Co., 29, Great Eastern Street, E.C., inform us that the chief improvement in the Kerry motor bicycle for 1913 will be the fitting of the Armstrong three-speed gear, though the Kerry two-speed is unaltered and will remain on the market.



A new model lightweight Hobart. The engine has overhead valves.

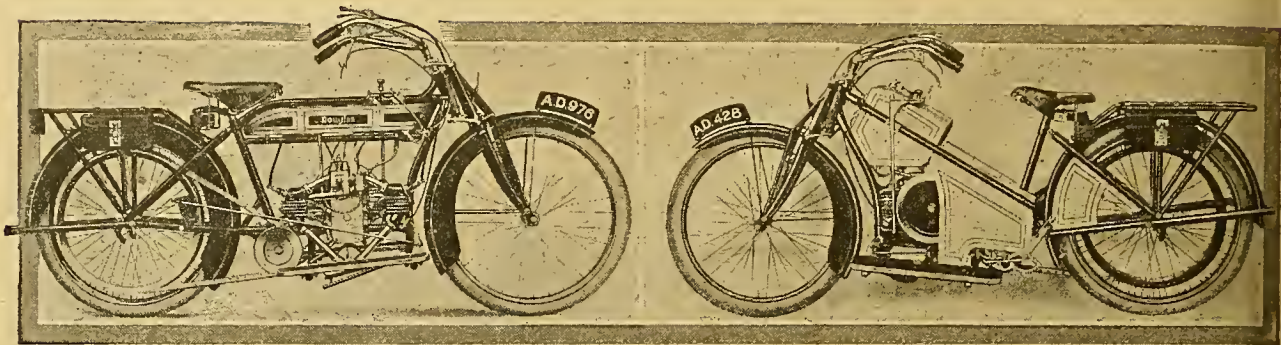
## SILENCERS.

The other day we had an opportunity of driving a Rudge-Multi and sidecar, fitted with a newly designed silencer, which Rudge-Whitworth, Ltd. will probably adopt next year. In the opinion of the works manager, Mr. V. A. Holroyd, who showed us the device, an exhaust box of large dimensions is not essential to quietness, and certainly he has proved to us, by the test we made, that it is possible to make a very quiet exhaust box without apparent back pressure, and not exceeding ordinary dimensions. The interior construction of the new silencer is at present not for publication. The only exit for the exhaust gas is through an inch pipe.

We drove the combination, which carried a total weight of nearly twenty-nine stones at an average speed of twenty miles an hour, and did not spare it on hills. Owing to the quietness of the exhaust, we at least expected the engine to knock when the Multi gear was raised after climbing short sharp hills, but this was not the case, and from the very short trial we had, we are convinced that Rudge-Whitworth, Ltd., have found out how to make a silent exhaust box without rendering its size abnormal.



## 1913 DOUGLAS MODELS.

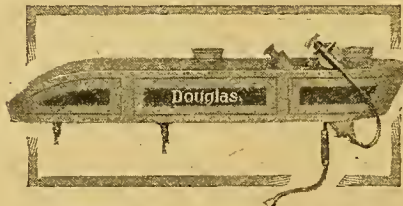


1913 Douglas models. Model O full touring machine.

Model S ladies'.

A visit to the Douglas works at Kingswood, Bristol, last week disclosed the fact that five models will be marketed in 1913. The first is called model N and is a single-gear model with counter-shaft and pedalling gear, but no two speeds. Model O is the light touring model with two speeds, free engine clutch, raised handlebars, footboards and larger petrol tank which now holds a quart more than last year. Divisions are also placed in the tank below the point where the new attachments are fitted. These latter are special brackets brazed to the top tube. The handle for operating the change speed rod is now securely attached to a special bracket also brazed to the top tube. This is very much neater than

and effective, and in addition to the side extension there is a very wide metal wing which is pierced at a point opposite the engine, so that any tendency for a vacuum to be created behind this mud-guard is prevented by the air passing



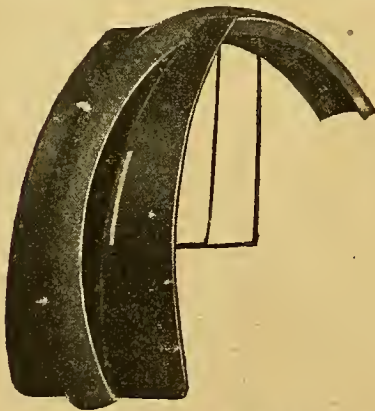
The 1913 tank, fitted with new spring fed oil pump and regulator.

through the slits. At the bottom where the metal guard would be likely to touch road obstructions a leather extension is riveted on to the wing. The side wings of the back guard are only provided on the belt side, as it has not been found necessary to fit them on the opposite side. These extensions keep all mud and water from being thrown on the belt, and should be an additional attraction to the already much sought after compound transmission of the

Douglas machines. The excellent results obtained with this twin horizontal engine have not necessitated any important alterations for next year. However, our illustration will show that the induction pipe has been altered to accommodate the new inlet ports which now form a clear passage direct to the inlet valve.

**Horse-power Extraordinary.**

The exhaust exit is also modified in design to enable a clearer path for the gases. The cylinder dimensions are 60.5x60 mm., and recent tests at the works, under the supervision of Professor Morgan, of the Merchant Venturers' College, Bristol, have shown that with a far brake one of these engines has given 9½ h.p. at a speed of 4,800 r.p.m. A maximum speed of 5,600 r.p.m. has been obtained, but at this speed power fell off. The exhaust pipe is one-eighth of an inch larger, and the Bosch enclosed magneto has been adopted. Previous to the introduction of the 1913 models, Douglas Bros. enclosed the magneto themselves. With a view to improving lubrication, a larger oil pump has been fitted. There is also a needle valve regulating the feed of the oil to the engine, the oil being forced through the regulator by a coiled spring in the pump barrel. If a full pump be

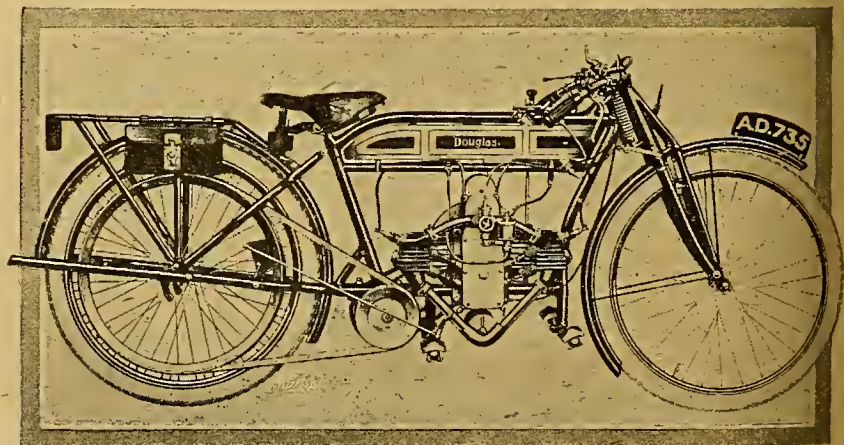


Douglas front mudguard. Note the slits to prevent a vacuum behind the engine.

this year's fittings, which were only clipped to the top tube. Owing to the wider tanks it has been found necessary to build a tube into the tank through which the operating rod passes. Model P is the light touring model with two-speed gear, double footrests, dropped handlebars but no clutch.

**Excellent Mudguarding.**

Model R. is the full roadster model, and in addition to the specification of the other machines this is provided with a kick starting device and special mudguarding, a detail illustration of which we publish. The front guard is very wide



Valve side of the Douglas light touring machine.



**1913 Models.—**

required suddenly to climb an unexpected hill, all that is necessary is to open the needle valve and operate the pump in the ordinary manner. The diameter of the friction clutch has been increased to 7in., and the clutch covering is now Raybestos.

**1913 Fittings.**

A detail improvement to the rear wheel is the shape of the belt rim. Previously, owing to its shape, this allowed mud to run up to the highest point and drop over into the groove for the belt. By altering this slightly in shape and placing a ridge close to the edge of the groove, any mud which climbs to the outer edge is flung off this ridge instead of dropping down into the groove. Both brake and clutch pedals are longer and situated more conveniently than before. The handle-bars are made slightly wider, and the ends are brought into a more natural position. The controls for magneto, carburetter, and brakes are now pinned to the bars by neat bolts which pass through small tubes brazed through the centre of the handle-bars. The lamp bracket of the Douglas machines is particularly strong. It is pressed from sheet steel, and is brazed and pinned to the underside of the steering socket. Passing up between the fork blades, it brings the lamp into the correct position for illuminating the number plate as well as the road. It is a particularly neat bracket, light and strong, and brazing it to the base of the steering socket is a very much better plan than clipping it round the handle-bar stem. The springs of the fork are now made with larger coils and thicker wire. This improves the springing of the fork, and does not destroy its resiliency. Hutchinson studded-tyres have been adopted as standard; the toolbags are slightly larger, and the modèle de luxe touring type will have a pan seat saddle.

**Ladies' Model Retained.**

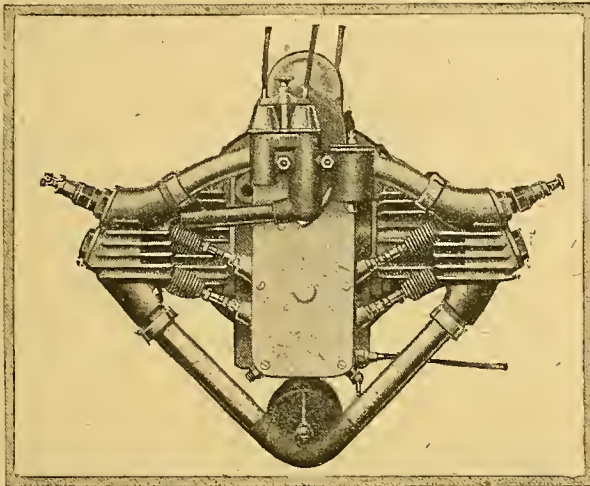
The lady's model is practically the same as the model R. touring machine. The frame remains unaltered, but it will, of course, be fitted with the improved engine, wide front mudguard, and rear mudguard with side extensions.

**L.M.C.**

The new 4½ h.p. L.M.C. sidecar model, 80 × 92 mm. bore and stroke, is full of interesting points. A two-speed gear is provided, in which the drive on the high gear is by belt direct from the crankshaft to the back wheel, whilst on the low gear the drive is conveyed by chains through a clutch on the counter-shaft, which is, of course, always running, as it is permanently coupled to the engine. The gears available are from 4 to 5 to 1 on top, and from 9

to 10 to 1 on low. The belt and chain drive for the two gears are arranged on either side. The chain transmission is on the right-hand side, where is also mounted the pedal of the foot starter. The spindle to which this is attached is carried through to the further side of the machine, where it supports a geared segment meshing with a free wheel on the chain-driven counter-shaft. The engine is therefore started through the low gear chain, whilst the gear is in its free position.

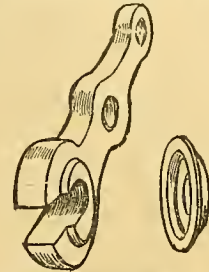
The clutch for the high gear is carried on the engine-shaft, and consists of a



1913 2½ h.p. Douglas engine. The shape of the new induction pipes will be observed.

gun-metal expanding ring working inside a steel case, and operated by a wedge piece. This, in turn, is forced in and out against the action of a spring by a horizontal pivoted lever, which is hinged to a bracket on the front of the crank case, as shown. An exactly similar form of clutch is fitted to the low gear counter-shaft, and both of these clutches are operated by a toe-and-heel pedal placed just inside the right footboard. This pedal is connected up to a cam device, which operates the thrust rod, which in turn controls the action of the two clutches.

The pedal has, of course, three positions, viz., high gear, free engine, and low gear. The footboards themselves, which are rubber-covered, are very neatly sprung, the spring for this purpose being furnished with a means for

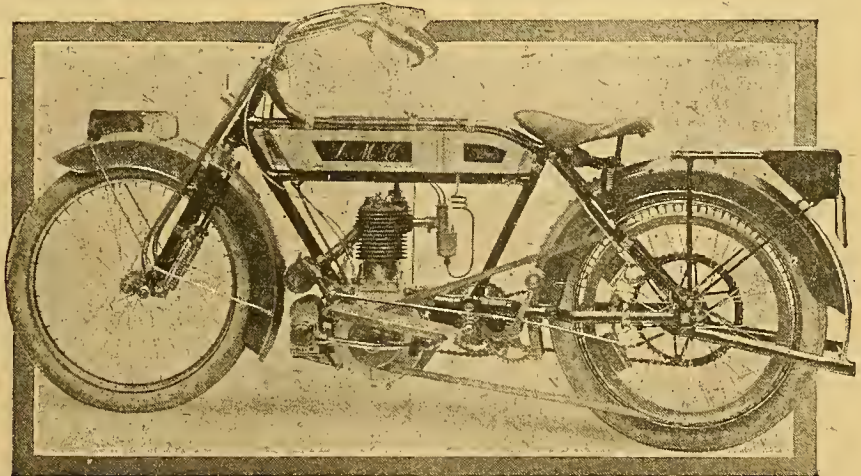


L.M.C. spring fork link.

adjustment, so that the tension can be altered to suit the weight of the rider. A neat half compression device, in which a second subsidiary cam is thrown into action underneath the exhaust tappet, is carried inside the timing case, and is worked by a small lever, giving two positive positions, and supported at the side of the tank.

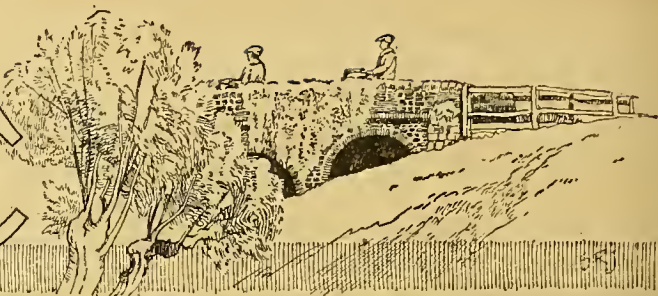
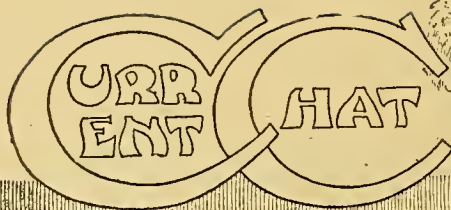
A very good point which has been included in this machine is the use of deeply flanked mudguards to both the front and rear wheels. In the latter case, the larger half of the mudguard is supported by the carrier, which, upon the removal of a single pin, hinges downwards and gives very complete access to the tyre. The spring forks have also undergone some little modification. The fork is shown in the illustration below, from which it will be seen that the spring is now wound open instead of closed, as previously, so that upon the rebound the motion can be softly taken up. The oscillating links supporting the hub are carried in hardened steel and phosphor-bronze bearings, which, in the event of wear developing, are readily renewable.

It will be noticed that the link is slotted to allow free removal of the front hub, whilst the washer underneath the securing nuts is cupped to register with a flat cone on the link itself, and so prevents the possibility of the hub slipping out of position, even should the nuts be slightly loose.



Belt side of 3½ h.p. 1913 L.M.C. Notice the efficient mudguards which have side extensions for their entire length.





#### TIME TO LIGHT LAMPS.

Nov. 14th	...	5.11 p.m.
" 16th	...	5.8 p.m.
" 18th	...	5.6 p.m.
" 20th	...	5.3 p.m.

#### "The Motor Cycle" Show Numbers.

This issue is the first of our three special numbers in connection with the Olympia Motor Cycle Show, and is mainly devoted to passenger motor cycles of all types. Next week "The Motor Cycle Buyers' Guide of 1913 Models" will appear. *The Motor Cycle* for the 28th inst. will contain a complete description, with numerous illustrations, of the Olympia Motor Cycle Show exhibits.

#### Road Dangers.

A motor cyclist member of the A.A. recently suffered injuries—and his machine was badly damaged—through being thrown off his machine while rounding a corner where the road was strewn with refuse dropped from farmers' carts. As it is an offence under the Highway Act 1835, for any matter to be laid on the highway to the injury or personal danger of road users, the facts were reported to the responsible authorities, who are communicating with the farmer in question.

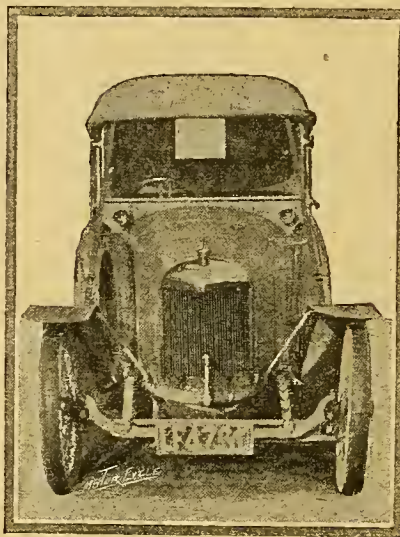
#### Auto Cycle Union Notes.

**RAILWAY RATES FOR CYCLECARS.**—The Auto Cycle Union is now busily engaged in trying to persuade the railway companies to reduce the rates for carrying cyclecars, which are now charged the same freights as motor cars, by train.

**CLUB ROOMS AT OLYMPIA.**—The Princes rooms at Olympia, which are placed at the disposal of the A.C.U. and affiliated club members, are also available for members of the Scottish Auto Cycle Union and the Motor Cycle Union of Ireland, as there are reciprocity agreements between these bodies and the A.C.U.

#### Proposed Ten Days' Trial.

Kendal seems a likely spot as a centre for the proposed ten days reliability trial of the Auto Cycle Union next year. We have already mentioned that there is a proposal afoot to merge the Scottish and English six days' trials into one long event. Mr. C. B. Robinson, the hon. secretary of the Westmorland M.C.C., told us last week that he could almost guarantee £100 worth of prizes if the Auto Cycle Union select Kendal as the centre, influential local gentlemen being interested in the proposals. Hotels and garages are also willing to give assistance, whilst the local press too favour the project.



Parent cyclecar. Front view. See description on page 1319.

#### The Gometz Hill Climb.

The hill climb organised by the Auto Cycle Club de France at Gometz-sur-le-Chatel will be held on December 1st.

#### SPECIAL FEATURES:

THE EVOLUTION OF CYCLECARS.  
B.M.C.R.C. EIGHTH MONTHLY MEETING.  
SOME CONTINENTAL RUNABOUTS.

Motor cyclists anxious to take part, should signify their intention of so doing to the secretary of the A.C.U., who can then make the necessary arrangements as to the prices of tickets, customs' facilities, etc. Members are particularly requested to be prompt.

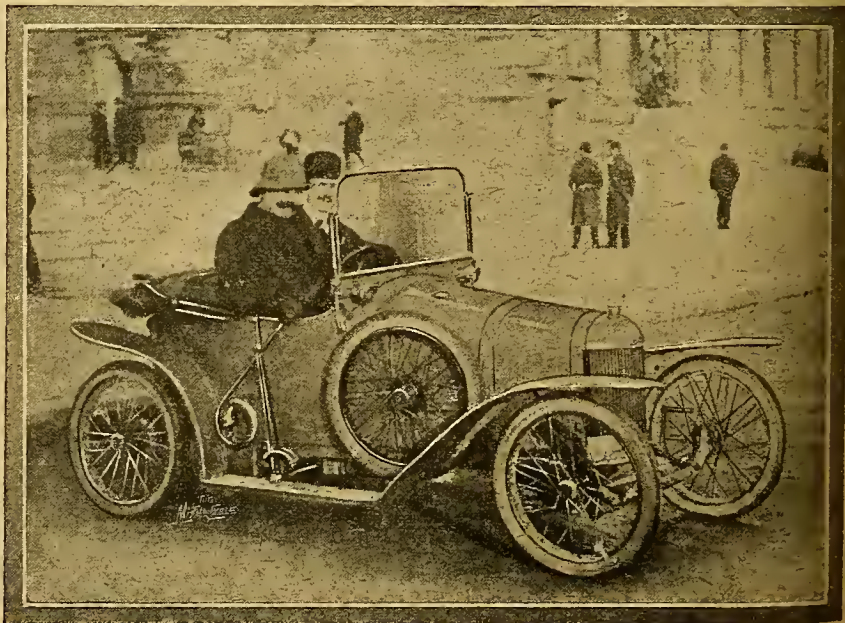
#### A Mystery.

Is it true that a certain rider, who is credited with successfully climbing Blea Tarn in the autumn one day trial, never put in an appearance at the hill at all? There is such a report current in Kendal, confirmed by the local observers.

#### Stolen Machines.

On the 25th ult., at 10.30 a.m., a 3½ h.p. Triumph, registration H 4277, was stolen from the office of Mr. A. Hermon Turner, King Street, Reading.

Another machine was stolen from Mr. T. C. Harrison, Longridge Vicarage, Preston. It has a 3½ h.p. De Dion type engine, and the registration is B 604. The name "Dean" is on the tank, and the machine has a 1911 Bosch magneto and B. and B. carburetter.



Side view of the Parent, a new light cyclecar of French origin (see page 1319).



**A Racing Absentee.**

A notable absentee from the B.M.C.R.C. race meeting at Brooklands last Saturday was G. E. Stanley, the Singer exponent, who has been ill in bed for a fortnight.

**Horse Power.**

It is interesting to note that the horsepower of a 2½ Douglas running at 4,800 r.p.m. worked on Prof. Dendy Marshall's formula is 10.54 h.p. The actual brake-horse-power claimed by the makers, calculated by fan brake at the same speed, is 9½ h.p.

**The Godfrey-Garrett Duel.**

Doubt still exists in the minds of spectators at Brooklands last Saturday as to the actual winner of the 500 c.c. hour race. After all, Garrett and Godfrey should be able to settle all doubts on this score, and from what we know of them both we think that they are sufficiently good sportsmen to prevent doubt existing for long.

**Slow Moving Vehicles in London Streets.**

It will be remembered that the A.A. and M.U. has during the past two years endeavoured to secure the adoption of a byelaw by the London County Council rendering it compulsory for slow moving vehicles to keep close to the near side of the street. *The Motor Cycle* understands that the Home Secretary has approved a list of streets to which the byelaw should apply. It may therefore be anticipated that the byelaw will be adopted in the near future.

**An Engine without a Flywheel.**

Not long ago we heard of an unusual occurrence which is likely to be of general interest. A purely experimental engine of the outside flywheel type was on the road undergoing tests; the flywheel had been altered from the original casting for various experimental reasons, and though the makers knew that the thickness was hardly sufficient for safety, they decided on a trial run. The result was a first flywheel some miles from home, yet the engine (a single-cylinder) was re-started by hand and the machine successfully driven home. It should be stated that a fairly heavy clutch was fitted on the counter-shaft.

**No Lights on Sidecars.**

So far as we have been able to ascertain, there is a byelaw in Glamorgan-ire, sanctioned by the Secretary of State, which makes it compulsory to carry two lights on a motor cycle with a sidecar. It comes about as follows: The Lights on Vehicles Act, 1907, requires all vehicles to which the Act applies to have a light on the off or right side, and the byelaw mentioned requires any vehicles to which the byelaw applies to have a light also on the left side. The 1907 Act does not apply to motor cycles or motor tricycles, but the byelaw applies to a motor tricycle and not to a motor cycle. The byelaw bears a footnote pointing out that it was duly submitted to the Secretary of State on January 28th, 1903, and not disallowed within the time fixed by law. We received a communication a few weeks ago from the Under Secretary of State informing us that he could not supply the names of counties in which

these byelaws existed. A motor tricycle is a motor cycle, and the Act of 1907 does not apply to motor cycles, yet a county byelaw like this can go farther than an Act of Parliament, and a motor cyclist ignorant of the byelaw who is seen riding a sidecar machine, in the

FUTURE EVENTS		
Nov. 8-16.	MOTOR CAR SHOW	AT OLYMPIA.
" 25-30.	MOTOR CYCLE SHOW	AT OLYMPIA.
Dec. ..	Auto Cycle Union Open Silencer Trial.	
" 27-28.	Motor Cycling Club Annual Winter Run.	

county is fined 40s. and costs. The latest information received on the subject just as we are going to press is that the byelaw has been amended so as to require sidecars to carry a rear red light as well.

**Autumn One Day Trial.**

The official awards in connection with the A.C.U. one-day trial in the Lake District have now been issued. Of the total number of starters (54), seventeen in the single and passenger classes have been awarded first-class certificates. They are as follow: C. T. Newsome and D. H. Noble (3½ Rovers), J. R. Alexander (7 Indian), Eric Walker (4½ Monarch), S. T. Tessier (5 Bat), L. Newey and R. C. North (3½ Ariels), G. D. Hardee (3½ Triumph), W. Pratt and P. Shaw (3½ P. and M.'s), S. A. Rowlandson (3½ Rudge), S. Crawley (3½ Triumph), R. G. Mundy and J. T. Wood (3 G.W.K.'s), H. F. S. Morgan (8 Morgan), J. Chater-Lea, jun. (8 Chater-Lea), and F. Smith (5-6 Clyno sc.). Of this list one only is a private owner, viz., G. D. Hardee.

**A Sidecar Feat.**

We hear that last week a 4½ h.p. (650 c.c.) Excelsior succeeded in climbing Sudeley Hill with a load of three full-grown passengers and a low gear of 9 to 1.

**A Long Week-end Run.**

We covered nearly 500 miles in two and a half days on a Humberette last week-end, a performance which goes to prove that cyclecars are thoroughly dependable. The weather, too, was of the worst possible description, yet no difficulty was experienced in averaging the legal limit—and a little over!

**The Limit!**

One hundred and four miles were actually covered by a Premier rider last week, no lubricating oil being given to the engine after the start. Though to some extent instructive, we almost fear to mention the test lest novices may be foolish enough to attempt to emulate the feat. Testing a machine to ruin opens many other fields. To others on the look out for something sensational, we suggest a run on a motor cycle from Coventry to London without tyres, just to test the wheel rims and springing, or, say, a non-stop run at 20 m.p.h. with a gear ratio of 10 to 1.

**Cyclecars at the Motor Show.**

Although strictly speaking no cyclecars whatever are exhibited at Olympia, there are several miniature vehicles to cover which the definition of cyclecar might possibly be stretched. These include one single-cylinder Zebra, 88 × 106 mm.; one single-cylinder Globe, 105 × 120 mm. (described on page 1318); one 8 h.p. Ariel (illustrated November 7th), twin-cylinder, 85 × 85 mm.; one 8-10 h.p. four-cylinder Marlborough, 59 × 100 mm.; and the Baby Peugeot (described October 31st), four cylinders, 55 × 90 mm. These are fairly familiar to our readers. All have engines which come well within the cyclecar qualification of 1,100 c.c.



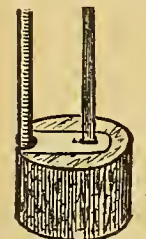
MIDLAND CLUB'S RELIABILITY TRIAL.

After lunch at Cheltenham the competitors were sent away in pairs from Steel's Garage by Mr. Howard Smith. Our photograph shows S. A. Rowlandson (3½ h.p. Rudge) and R. H. Edwards (3½ h.p. Triumph) about to start.



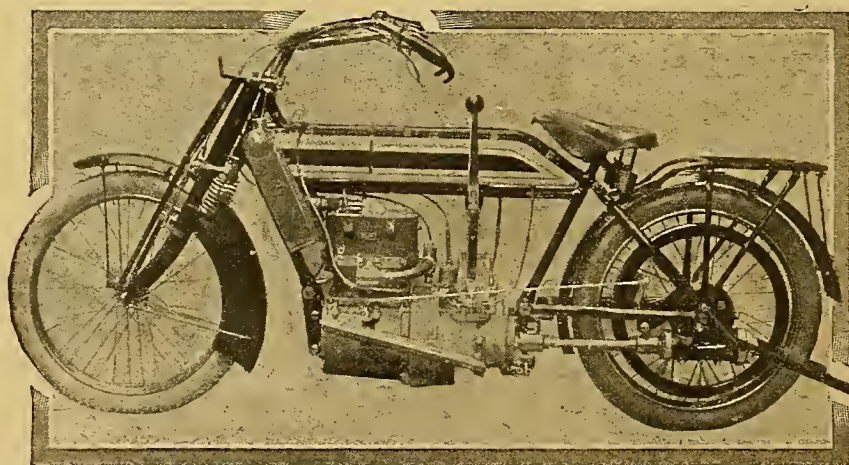
## Accessories at the Motor Show.

MESSRS. ROSS, COURTNEY AND Co. show a neat little petrol gauge adaptable specially for motor cycle tanks. A sketch of this is given which shows its simple mechanism. A varnished cork float is adapted to slide up a helical twisted rod, which carries at its upper end a small finger under the glazed lid of the cap. Vertical motion of the float is accordingly transformed into a rotary motion in the indicator hand which registers on the dial so that the contents of the tank can be seen at a glance.



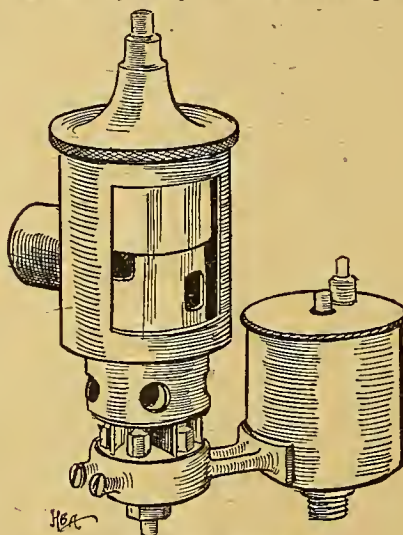
Ross Courtney's petrol tank gauge for motor cycles or cars.

On SIMM'S stand the centre of attraction is the Seebright combined lighting dynamo and H.T. magneto. This machine is quite self-contained, and is not very much larger than an ordinary magneto. It is of special interest to motor cyclists because it foreshadows, undoubtedly, the means which will be adopted for electric lighting of motor cycles in the future, and we believe that a motor cycle model is already being prepared.



The Stuart-Turner water-cooled two-stroke twin-cylinder machine. The transmission is by propeller-shaft with worm drive. It was described in our issue of Oct. 31st.

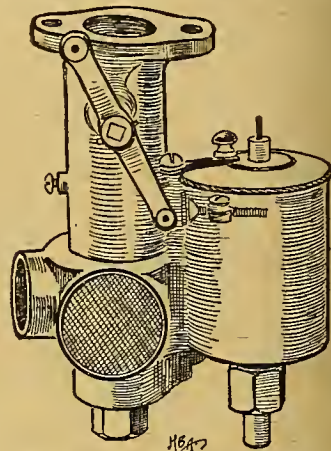
S. SMITH AND SON'S latest introduction is a carburetter for motor cycles, this is a reduced facsimile of the Smith carburetter, which has already earned an enviable reputation for car use in a very short time. This instrument is entirely automatic. The usual type of float chamber supplies four jets, which are contained within a choke tube divided by two diametrical walls which therefore form virtually four small choke tubes. One of these is sharply tapered in order to supply a high velocity of air past the jet for easy starting. At the top of the choke tubes are four ports, one for each, and these ports are uncovered one after the other by a cap which is worked quite



Smith's four-jet carburetter.

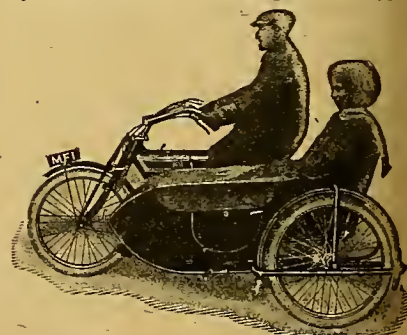
automatically by the suction of the engine itself. An extra air setting is shown as arranged in the sketch in the form of a collar immediately over the base of the jets. No extra air lever is, however, required, as the air adjustment needs attention only from time to time. The throttle is worked by Bowden wire. This carburetter is used on the Humberette.

FENESTRE, CADISCH AND Co.—This firm show an exceedingly neat little Zenith carburetter designed for motor cycle use, which is light in weight, and simple in form. It embraces all the



The Zenith carburetter for motor cycles.

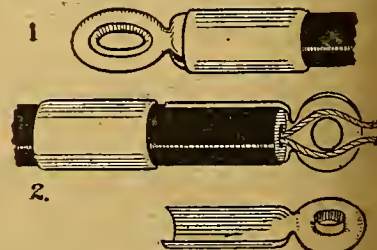
essential parts of the full size Zenith, which has already obtained such an enviable reputation for power, slow running, and flexibility. The motor cycle Zenith is of the single lever type.



The Millford-Cruiser sidecar. This model has a frame encircling the wheel by means of which both ends of the hub spindle are supported.

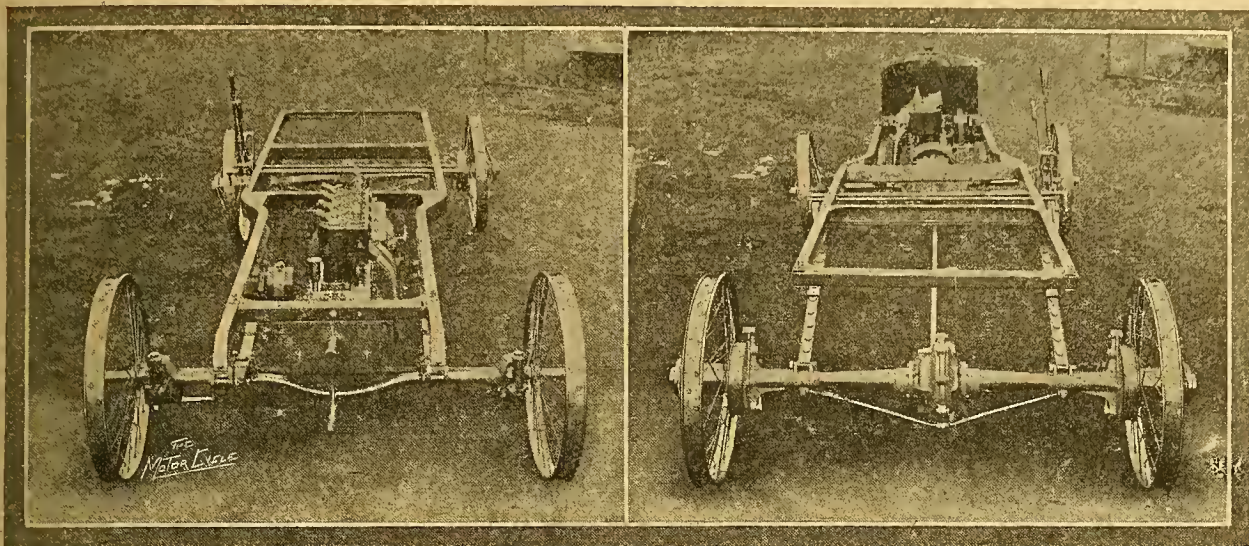
### A NEAT TERMINAL.

An ingenious and effective form of terminal has lately been brought out by Messrs. Delafields, 8, Bedford Street, Plymouth, which is known as the Robshaw. As clearly shown by the



illustration, it consists of two portions, wire is wound round the projecting eyelet, and the two are pressed together, and finally the sleeve is slipped over the whole.





Chassis of the new T.M.C. four-cylinder water-cooled cyclecar to be exhibited at Olympia.

## THE T.M.C. CYCLECAR.

A new cyclecar, built on accepted lines, is the 7 h.p. T.M.C., made by the Wilkinson T.M.C. Co., Acton, W. The engine is water-cooled, has four separate cylinders,  $61 \times 70$  mm. = 816 c.c. A cross shaft, driven by skew gearing, drives the magneto on one side and the water pump on the other. A honeycomb radiator is fitted. The carburetter is the Stewart-Precision automatic. The oiling is by gravity through a sight-feed lubricator. Inside the crank case is a pump, driven off the camshaft, which returns the surplus oil.

Both petrol and oil tanks are carried under the dome-shaped dash. Engine and gear box are carried on a sub-frame, the gear box is close up to the clutch, and no universal joint is employed. The clutch is of the leather-to-metal type, and three speeds and reverse are provided. Universal joints of the slotted ball type are fitted to each end of the propeller-shaft, and the final drive is by bevel gear. There is an external foot brake on the gear-shaft, while internal brakes are fitted to the rear wheels. The frame is of channel steel narrowed in front to allow of ample lock, and suspended on semi-

elliptical springs at the front and quarter-elliptical springs at the rear. The design of the vehicle shows promise of a successful future. It will be exhibited at the Olympia Motor Cycle Show.

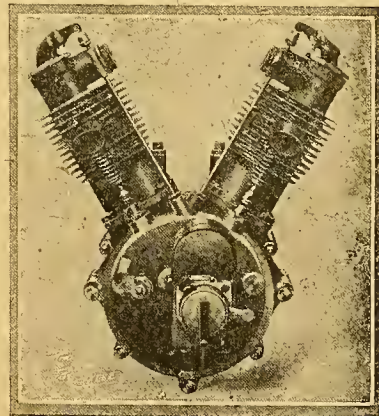
## JOB DAY CYCLECAR.

The cyclecar made by Messrs. Job Day and Sons, of Leeds and London, and designed by Mr. H. A. Smith, has a twin-cylinder V type air-cooled engine,  $55 \times 88$  mm. = 998 c.c. The transmission is through a cone clutch faced with vulcanite fibre and a three-speed gear of sliding type to a pair of bevel wheels and counter-shaft, on which is a straight pinion differential. At each end of the counter-shaft are pulleys for belt drive or sprockets for chains. The makers favour 1 in. V belts.

The tubular frame weighs 60 lbs. The wheelbase is 6 ft. 6 in., and track 3 ft. 9 in. The weight of the chassis is  $4\frac{1}{2}$  cwt., and the complete weight  $5\frac{1}{2}$  cwt.

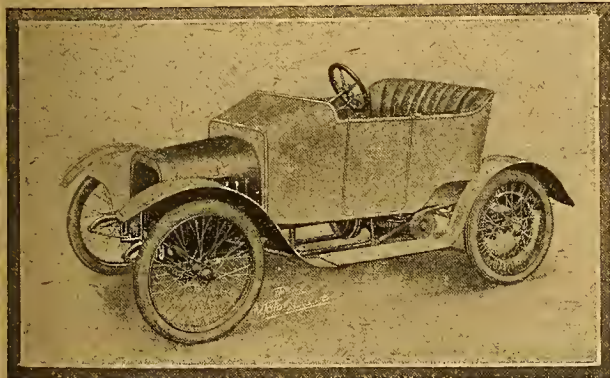
The gear control is through a semi-gate change-speed quadrant. Two brakes are fitted, both acting on the rear wheels. The wheels are 26 in. diameter with 65 mm. tyres, all wheels are detachable and interchangeable, and a spare wheel can be carried. The whole of the bearings, with

the exception of the engine bearings, are of the swivelling two-row type ball bearings. The supply tank holds  $2\frac{1}{2}$  gals. of petrol and 2 qrts. of lubricating oil. Lubrication is pressure fed, and the lubricators are replenished by foot pressure.

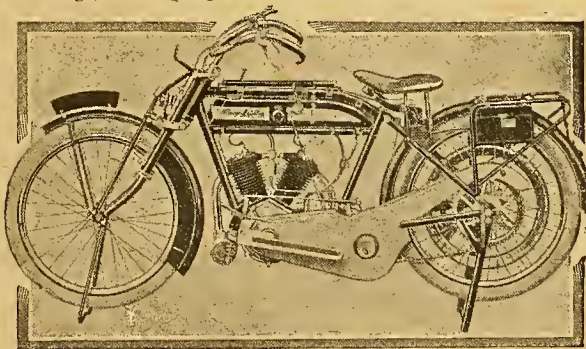


Twin-cylinder air-cooled engine fitted to the Job Day cyclecar.

An easy starting device enabling the engine to be started easily can be put in operation from the driver's seat.

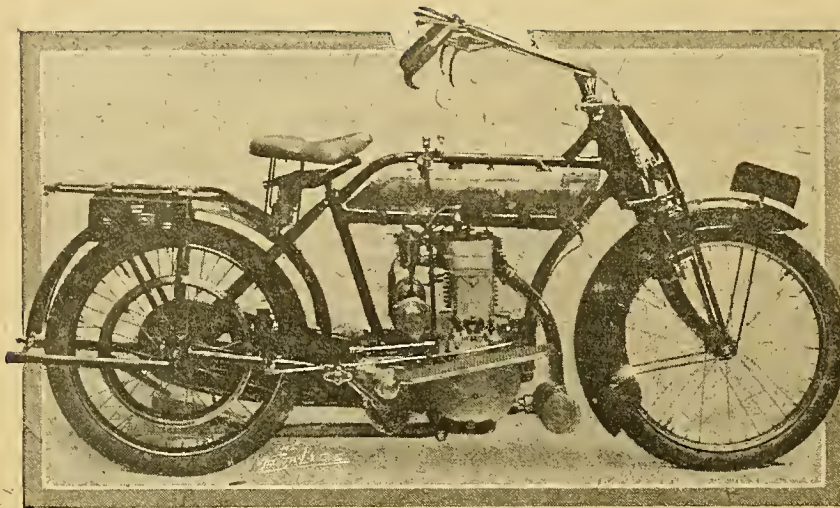


The complete vehicle, built by Job Day and Sons.



6-3 h.p. twin Alldays-Matchless which has chain drive and three-speed gear. The efficient chain guards will be noticed.





Valve side of the 1913 pattern chain-driven Star.

## THE STAR.

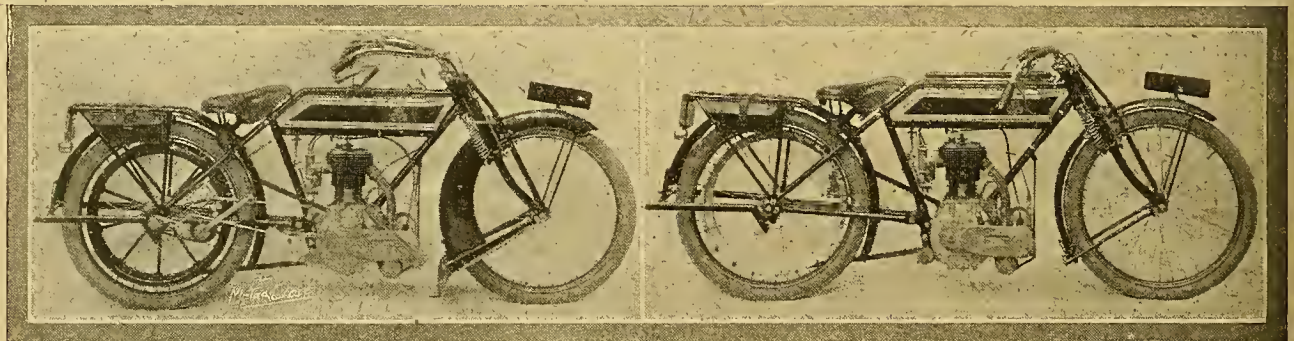
The Star Cycle Co., Wolverhampton, are no new firm to motor cycle manufacture.

magneto is chain-driven and situated at the rear of the cylinder. The transmission is by chain running in a chain case, and neat footboards are fitted. The foot

## THE SWIFT.

The 3½ h.p. Swift standard touring machine, which possesses particularly pleasing lines, has a 3½ h.p. 86×85 mm. engine. The valves are of large diameter and adjustable tappets are fitted. The cylinder, which is provided with large radiating fins, is rendered easily detachable, as the holding down bolts are placed in the most accessible position possible. The tank has been enlarged to carry 1½ gals. of petrol and 3 pts. of oil. Both rear and front stands are fitted. The saddle is Brooks B. 104, with padded top, and is very comfortable and gives a low riding position. The mudguards have been a good deal improved, the front guard being provided with large mud flaps, and the rear guard with an extension piece on the belt side, which is a most desirable feature. The handlebars have been brought well forward and strengthened, and the ends have been dropped, rendering the riding position most comfortable. Two pairs of footrests are provided, those in the front being adjustable. The frame is very strongly constructed and has the top tube dropped at the rear.

The three-speed touring model, similar in detail to the above, is fitted with an



Three-speed touring Swift. The kick starter is a new feature of these machines.

Standard T.T. model Swift.

They have decided to market for 1913 the machine we illustrate. This, as will be noticed, has a somewhat unconventional type of frame. The vertical single-cylinder engine has neatly enclosed valves. The

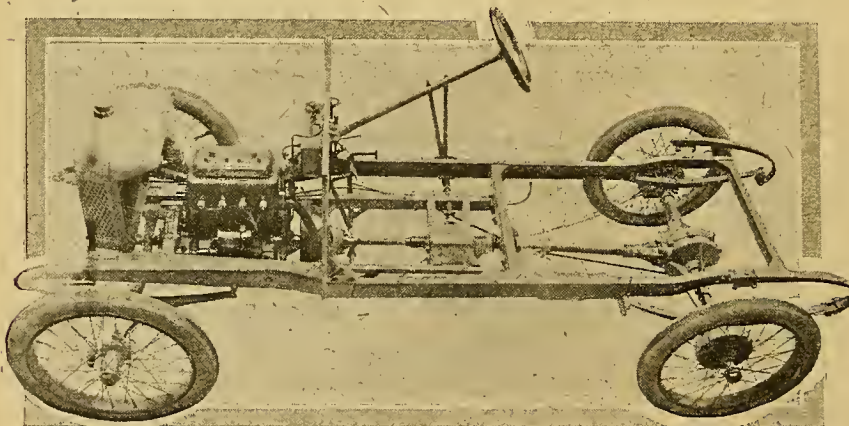
brake operates on a brake rim attached to the right side of the rear wheel. Saxon front forks are employed, and the front guard has side extensions brought well round the wheel.

Armstrong three-speed gear with free engine clutch. This is the new model Armstrong which can be started with the driving wheel on the ground, and for this purpose a kick-starter is provided.

The T.T. model is of similar pattern, but without the special mudguarding devices mentioned above, and can be fitted with Armstrong three-speed gear if desired.

The Swift Company have just completed a most successful season, as during 1912 numerous excellent performances have been accomplished by them. Among these we may mention the ascent of Arms Hill by F. J. Watson on a single-cylinder sidecar machine. All models referred to are fitted with a half-compression device. A special feature is a new petrol filter so placed that it is easily taken apart for cleaning. When the union is detached every drop of petrol can be emptied from the tank.

The new Swift cyclecar was fully dealt with in our last issue. This excellently designed four-wheeler has a twin-cylinder water-cooled engine, three-speed gear, and shaft drive.



Chassis view of the four-cylinder Ponette, a vehicle on the border line of car and cyclecar.



# B.M.C.R.C. EIGHTH Monthly Meeting

THE last meeting of the B.M.C.R.C., held on Saturday, was a fitting conclusion to the club's successful year. Even at an early hour, when the time trials were being run off, and there was nothing of a spectacular nature going on, there was a large crowd brought down to Brooklands by train, car, and motor cycle. The morning was fine and mild for the time of year, but a strong south-westerly wind prevented record times being made. The new four-valve single-cylinder and eight-valve twin-cylinder Indians were the centre of an interesting group of spectators. They have two inlet and two exhaust valves in each cylinder, operated by forked rockers. A large exhaust pipe is fitted, and ports are drilled communicating direct with the air. The machines are ingenious and clever from a racing point of view, but will not be marketed in any form. The long-stroke Rudge is a recent arrival at Brooklands, and is now fitted with a special inlet dome, to which the standard exhaust valve is fitted, thus rendering the valves interchangeable. Among the cyclecars we noticed a new G.N. with the engine set across the frame and shaft drive to a counter-shaft, the final drive being by belt, very large pulleys being used. Below are given the results of the fourth 1912 time trials. Certificates are awarded for the best performances in each class, and the club's gold medal to the riders making the best aggregate performance in each class during 1912 who have taken part in all but two of the series.

## The Time Trials.

### CLASS A (not exceeding 275 c.c.)

Rider, Machine, and Cyls.	Bore and Stroke.	c.c.	Kilometre.	Mile.
	mm.		secs. m.p.h.	secs. m.p.h.
H. Martin, Martin-Jap (1) 76	x 59.5	270	43.89=50.97	71.19=50.57

### CLASS B (not exceeding 350 c.c.)

P. Weatherill, Zenith (1) 76	x 65.5	298	34.33=65.16	55.48=64.87
S. L. Bailey, Douglas (2) 60.5	x 60	350	34.33=65.16	59.6=60.4
H. Martin, Martin-Jap (1) 89.5	x 59.5	340	36.6=57.95	62.2=57.88

### CLASS C (not exceeding 500 c.c.)

O. C. Godfrey, Indian (1) 82.5	x 93	497	34.4=65.03	55=65.44
O. C. Godfrey, Indian (1) 82.5	x 93	497	33.12=67.54	53.74=66.78
J. L. E. Emerson,				
Norton (1) .....	79 x 100	490	—	53.16=67.72
O. C. Godfrey, Indian (1) 82.5	x 93	497	34.4=65.03	—

### CLASS D (not exceeding 750 c.c.)

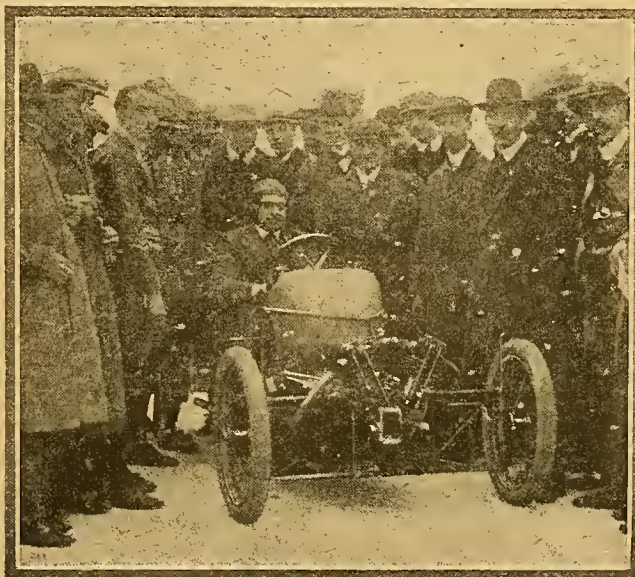
C. R. Collier, Matchless (2) 90	x 58	738	29.71=75.29	48.62=74.05
C. R. Collier, Matchless (2) 76	x 54.5	498	32.2=69.04	52=62.23
H. Hunter, Zenith (2) ..	90 x 58	738	36=62.14	58.2=61.86

### CLASS E (not exceeding 1,000 c.c.)

C. R. Collier, Matchless (2) 90	x 78.4	999	27.66=80.47	45.07=79.87
C. B. Franklin, Indian (2) 82.5	x 93	994	29.2=76.61	—
C. B. Franklin, Indian (2) 82.5	x 93	994	29.2=76.61	46.8=76.92
C. B. Franklin, Indian (2) 82.5	x 93	994	—	47=76.60

CLASS C (with Sidecar).					
S. F. Garrett, Regal					
Green Precision (1) 85	x 88	499	47.66=46.93	74.95=48.03	
S. F. Garrett, Regal					
Green Precision (1) 85	x 88	499	48.6=46.03	76.8=46.88	
CLASS D (with Sidecar)					
A. Mago, Bradbury (1) 89	x 89	534	46.17=43.45	74.35=48.42	
S. T. Tessier, Bat-Jap (2) 85.5	x 64	736	50.4=44.38	—	
CLASS E (with Sidecar).					
F. W. Barnes, Zenith (2) 90	x 77.5	988	37.75=59.20	61=59.02	
G. F. Hunter, Zenith (2) 90	x 77.5	988	30.2=57.07	63=57.14	
G. F. Hunter, Zenith (2) 90	x 77.5	988	40.8=54.83	65.6=54.88	
CYCLECARS.					
A. W. Lambert, Morgan-Jap (2) .....	90 x 85	1021.5	37.9=58.94	67.6=58.86	
J. T. Wood, G.W.K. (2) 86	x 92	1068	40.4=55.37	64.1=55.73	
F. E. Readwin, Sabella (2) 85	x 95	1096	47=57.59	70.4=47.75	

Those who rode more than once had paid extra entry fees, but we understand this will not be allowed in future.



The winner of the cyclecar hour race, H. F. S. Morgan (two-cylinder Morgan-Jap), surrounded by an admiring group. He created a new record.



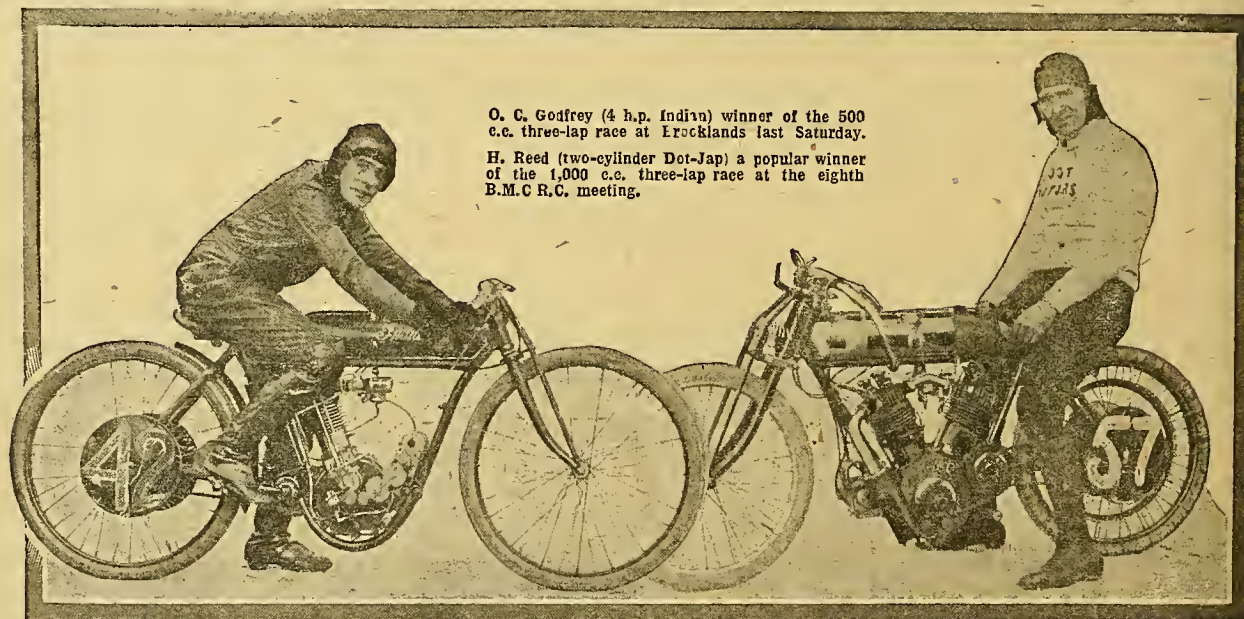
Racing proper began at 11.45 a.m. with the Olympic Cyclecar Race. Prizes: The Club's gold, silver, and bronze medals to the first, second, and third respectively, and the Club's certificate on request to all finishing.

Run together with this race, but started just after it, was the Olympic Sidecar hour race, limited to sidecar machines not exceeding 1,000 c.c. and for similar prizes. The fact that both races were run together made them exceedingly difficult to follow. As regards the cyclecars, Morgan established a lead from the first, but for the first five laps Wood hung on to him gamely until water on the h.t. terminal caused him so long a delay that he did not restart until Morgan had completed his ninth lap. Various troubles played havoc with many. Tessier's flywheels came adrift. Godfrey broke a piston and Ware's cylinder head blew off. In his fifth lap Jones (Bedelia) retired owing to inlet valve trouble. Martin sheared a key in the transmission of the Morgan he was driving. Nash, on a new type G.N., broke a petrol pipe, but re-started later. Gibson (Bradbury sc.) suffered from misfiring. McDonagh's long-stroke Rudge had a stretched exhaust valve, and Carter's Arden broke a connecting rod. In the cyclecar class Wood made a gallant effort to gain lost time, but his undershield came adrift, and caused him to slow up somewhat. Sanger (Bat sc.) had a burst sidecar tyre. Result:

The three-lap race for machines not exceeding 500 c.c. was the next item on the programme, and in it Godfrey on the new four-valve Indian (a machine built solely for racing) signally distinguished himself. Godfrey led from the start, and on the first lap was followed by Brewster, Hill, Bateman, Weatherilt, Spencer, Elce, Greaves, and Woodhouse. The second lap order was, Godfrey, leading by 300 yards, Brewster, Weatherilt, Hill, Elce, Spencer, Bateman, Woodhouse, and Greaves. The result was as follows:

Rider and machine.	Bore and stroke.	c.c.	m.	s.	m.p.h.
1. O. C. Godfrey (1 Indian)	82.5 x 93	497	7	22 1/2	65.6
2. P. Brewster (1 Norton) ...	79 x 100	490	7	26 1/2	64.27
3. P. Weatherilt (1 Zenith) ...	90 x 77.5	494	7	40 1/2	63.9
L. Hill (1 Rudge) ...	85 x 88	499	7	43	
W. H. Elce (1 Rudge) ...	85 x 83	499	7	49 1/2	
F. Bateman (1 Rudge) ...	85 x 88	499	8	1 1/2	
W. S. Spencer (1 Rudge)	85 x 88	499	8	3	

The next event was the Junior Hour Race for machines with engines not exceeding 350 c.c. For the first three laps Harry Martin led the procession, followed by Bailey, Mason, Bashall, Newsome, and the remainder, but in the third lap Martin's petrol pipe broke and placed him *hors de combat*.



O. C. Godfrey (4 h.p. Indian) winner of the 500 c.c. three-lap race at Erocklands last Saturday.

H. Reed (two-cylinder Dot-Jap) a popular winner of the 1,000 c.c. three-lap race at the eighth B.M.C.R.C. meeting.

#### CYCLECARS.

	mm.	c.c.	mls.	yds.
1. H. F. S. Morgan (2-cyl. Morgan-Jap) ...	90 x 76	966	55	329*
2. F. E. Readwin (2 Sabella) ...	85 x 95	1,096	47	1,540
3. J. T. Wood (2 G.W.K.) ...	86 x 92	1,068	46	1,202
F. W. Carryer (2 Duo) ...	85 x 85	964	33	1,260
A. G. F. Nash (2 G.N.) ...	80 x 98	985	33	676
L. F. de Peyrecave (2 Duo) ...	85 x 85	964	33	400

\*Record

Morgan, who gained the hour record (previous best J. T. Wood, G.W.K., 25th September, 1912, 47 mls. 1,390 yds.), also got the 50 miles, time 54m. 39 1/2 s. (previous best J. T. Wood, 25th September, 1912, 1h. 2m. 32s.)

#### SIDECARS.

	mm.	c.c.	mls.	yds.
1. F. W. Barnes (2-cyl. Zenith)	90 x 77.5	988	51	897
2. S. F. Garrett (1 Green-Precision) ...	85 x 88	499	49	420
3. C. B. Franklin (2 Indian)	82.5 x 93	994	47	210
J. Woodhouse (1 Regal-Precision) ...	89 x 99	617	45	1,475
H. Gibson (1 Bradbury) ...	89 x 89	554	40	1,085
A. W. Sanger (2 Bat-Jap) ...	85 x 85	965	38	83
A. J. McDonagh (1 Rudge) ...	85 x 132		6 laps	
G. F. Hunter (2 Zenith) ...	90 x 77.5		4 laps	
G. Griffith (2 Zenith) ...	90 x 77.5		4 laps	
S. T. Tessier (2 Bat-Jap) ...	85.5 x 65	736	2 laps	

Then Bailey went to the front, but a broken tappet delayed him for some time. The lead was now left in the hands of Mason, who maintained it throughout the race, with Newsome a good second. In the seventh lap Thompson's high-tension wire came adrift, while Bashall was troubled by misfiring, and McNab by oil on the belt. Bailey, after re-starting, covered many laps at a splendid speed in a vain endeavour to recover lost ground, but he finally had to retire owing to a broken rocker. The result was as follows:

	mm.	c.c.	mls.	yds.
1. H. Mason (2-cyl. N.U.T.-Jap)	60 x 61	350	52	625
2. W. F. Newsome (2 Douglas) ...	60.5 x 60	350	51	1,368
3. L. Temple (2 Moto-Rève) ...	53 x 77	340	41	688
T. Thompson (2 Douglas) ...	60.5 x 60	350	40	1,680
W. H. Bashall (2 Douglas) ...	60.5 x 60	350	38	1,627
S. L. Bailey (2 Douglas) ...	60.5 x 60	350	38	83
H. P. Beasley (1 Singer) ...	69 x 80	299	33	108

Beasley suffered considerable delay through his oil pump not working properly.

The three-lap race, not exceeding 1,000 c.c., provided a good deal of excitement. Poor C. R. Collier slipped and fell just as his big twin began to fire; he was dragged along for a yard or two, and by sheer pluck and strength he recovered himself, and by a supreme effort reached the saddle, but, despite help from his pusher-off, he had to retire, as the belt broke when the engine fired again. Bashall took the lead at the start, and at the end of the



first lap was first over the line, followed by Franklin, Remington, Reed, Hunter and Rogers, who brought up the rear some way behind. At the second lap, Franklin assumed the lead, with Reed second and Bashall third. Reed's Dot was running magnificently, and brought him in an easy winner. Result:

		mm.	c.c.	m. s.
1. H. Reed (2-cyl. Dot-Jap) ...	90	× 77.5	988	6 31 <sup>2</sup> / <sub>5</sub> *
2. C. B. Franklin (2 Indian) ...	82.5	× 93	994	6 33 <sup>1</sup> / <sub>5</sub>
3. E. F. Remington (2 Matchless-Jap) ...	90	× 77.5	988	7 10
W. H. Bashall (2 Zenith-Jap) ...	90	× 77.5	988	
T. Rogers (2 Matchless-Jap) ...	90	× 77.5	988	
H. Hunter (2 Zenith-Jap) ...	90	× 77.5	988	

\*Reed's time equalled 74.97 m.p.h.

Franklin was riding the twin racing Indian with four valves in each cylinder. The fastest lap was made by Harry Reed, and the fastest lap from standing start by Bashall, 74.12 m.p.h.

The last race of the day was one of the most interesting and exciting events ever witnessed at Brooklands. This was the Senior Hour Race for machines with engines not exceeding 500 c.c. Emerson (Norton) led on the first round, followed by the Rudge riders, Bateman and Hill, and the remainder. Emerson looked a certain winner, but in the early stages of the race Weatherilt promised to cause him some trouble. After leading for many laps, Emerson had to stop through the top of his float chamber coming unscrewed, and the race resulted in a terrific duel after the twelfth lap between Godfrey and Garrett. Emerson's stop lost him two laps, and, despite his strenuous efforts, he got no nearer than two miles to the second man. Towards the end it was a ding-dong race between the two leaders, and, seeing that there would be some trouble in settling who was the leader at the expiration of the hour, Mr. A. V. Ebbelwhite, the senior timekeeper, sent Mr. A. G. Reynolds with a synchronised watch and a pair of strong field glasses to the top of the tower over the club buildings in the paddock. Godfrey and Garrett crossed the line simultaneously on the last lap, after which Garrett shot ahead, and was leading at the members' bridge. That was all we at the fork knew. Garrett was thought to be a certain winner, and the crowd was delighted. A dozen enthusiasts joined hands



S. F. Garrett (1½ h.p. Green-Precision), whose speed in Class C time trial with sidecar was 48 miles an hour.

and danced round Mr. F. E. Baker, the manufacturer of the Regal Green-Precision engine, and when Garrett arrived he was carried shoulder high. When the news came that as the hour expired Godfrey was leading by eight yards, Garrett objected to the decision and lodged a formal protest. The result was as follows:

	mm.	c.c.	mls.	vs.
1. O. C. Godfrey (1-cyl. Indian) ...	82.5 × 93	497	60	1,370
2. S. F. Garrett (1 Regal Green-Precision) ...	85 × 88	499	60	1,362
3. J. L. E. Emerson (1 Norton) ...	79 × 100	490	58	1,047
P. Weatherilt (1 Zenith) ...	90 × 77.5	494	55	1,590
J. Lamb (1 Triumph) ...	85 × 88	499	55	1,276
W. Stanhope Spencer (1 Rudge) ...	85 × 88	499	51	1,119
H. Reed (2 Dot-Jap) ...	76 × 54.5	495	49	1,236
H. Greaves (2 Enfield) ...	60 × 75	425	49	

## A.C.U. Autumn Trial. Judges' Report.

THIS trial, held in the Lake District, starting and finishing at Kendal, proved a good and severe test, both for machines and riders, although the course of 103 miles was shorter than usual.

The weather was ideal for the purpose, first severely cold, then mild and windy, the day ending in heavy rain. The cold proved that the protection of carburetters, either by shields or by exhaust heating, is still not fully provided for. There were several stops owing to frozen carburetters. The mild and windy part of the day proved that overheating of air-cooled engines has still to be contended with, as witness the failures on Underwood Hill and Dunmail Rise, and the fact that many engines that did not actually stop here were labouring heavily and getting dangerously overheated. And, lastly, the condition of machines and riders at the finish, and also the belt-slip noted on the few rises between Ambleside and Kendal traversed in the rain, proved that there is yet room for much improvement in the mudguarding both fore and aft. The magnetos in this trial gave no apparent trouble and caused no stops.

The route was a splendid one for the purpose of the trial, and, with the exception of Blea Tarn Pass, not too severe for the proper testing of the modern motor cycle. The road surfaces were on the whole good, and hardly any tyre trouble was reported. This was also largely due to the fact that the quality of tyres has greatly improved of late, and that motor cycles are not so under-tyred as they used to be.

The condition of machines at the finish was, from a mechanical point of view, good. In a few cases steering heads were loose. On one machine the wheels were badly out of track (pointing to frame weakness). Most engines were noticeably free from waste oil, while several left much to be desired in this respect. Front brakes still require the closer attention of manufacturers. Most of the motor cycles entered proved reasonably silent. The performance of the machines taken as a whole was very good, mechanical

breakdowns were very few, and with two or three exceptions the engines seemed most efficient. The power developed by the engines of the Morgan, the three G.W.K.'s, the Clyno, and Chater-Lea was especially noticeable. The ability of several riders was very poor, and gave the impression that the men had very little experience in districts abounding in sharp turns and steep hills. The old fault of neglecting to lower the gear early enough and trying to change up too soon was noted again and again, and caused several failures, as did apparently too little knowledge of carburation and ignition. On the other hand, the expert driving of the majority of the competitors is deserving of great praise. Exceptionally fine performances were those of Rex Mundy (G.W.K.) on Tow Top, and C. T. Newsome (Rover), D. H. Noblé (Rover), J. R. Alexander (Indian), V. Busby (Alldays), S. Crawley (Triumph), and F. Smith (Clyno), on Blea Tarn Pass.

One all too common a feature was the ignorance of the printed rules shown by the majority of the competitors. Riders would add greatly to their own chances of success, and also lighten the duties of officials, if they would only make themselves conversant with this simple printed matter before they come to the post.

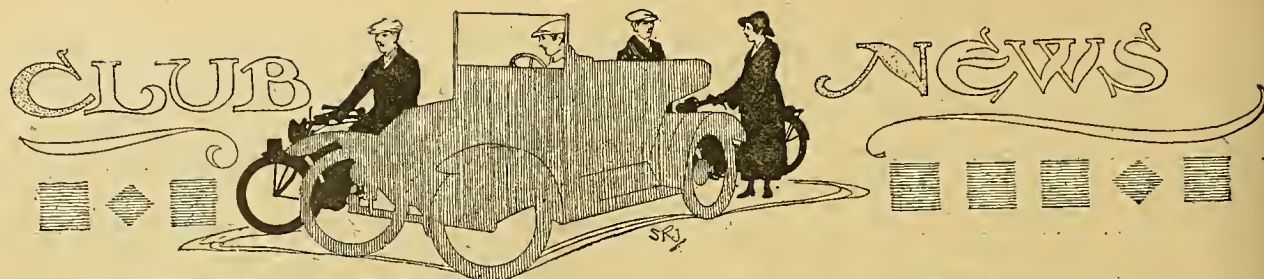
Judges { E. PERCY GREENHILL.  
W. B. LITTLE.  
S. W. CARTY.

### THE AWARDS.

The results table appeared in *The Motor Cycle* of October 31st.

The undermentioned were officially credited with non-stop runs on the day of the event, but the judges have not confirmed the awards: J. E. Greenwood (2½ Sunbeam), assisted on Tow Top, Kirkstone, and Foolstep; G. T. Gray (¾ Rudge), climbed Red Bank under set speed, assisted with feet on Tow Top, and stopped on Foolstep.



**Colchester and District M.C.C.**

It is proposed to form a club with the above title. Riders are asked to communicate with Mr. H. B. Chapple, Butt Road, Colchester.

**North-west London M.C.C.**

At an extraordinary general meeting of this club, all the members of which are amateurs, several new rules defining the amateur status were adopted. No shamateurs need apply.

**Canterbury and District M.C.C.**

A petrol consumption trial took place on the 7th inst. over a course of  $24\frac{1}{10}$  miles. Result:

Competitor and machine.	Miles per gal.	Ton-miles per gal.
L. Rumens ( $3\frac{1}{2}$ Singer three-speed) ...	213	40.25
G. Denne ( $3\frac{1}{2}$ Triumph F.E.) ...	135	24.3
P. Kingsford ( $3\frac{1}{2}$ Triumph F.E.) ...	112	20.75
J. Poxon ( $3\frac{1}{2}$ Bradbury) ...	116	20.25

A speed-judging contest was held at the same time, and won by J. Poxon ( $3\frac{1}{2}$  Bradbury), with P. Taylor ( $3\frac{1}{2}$  Rover) second.

**Oxford University M.C.C.**

The results of this event, illustrations of which were published last week (page 1269) were as follow:

Class 1.—Sidecars: S. P. Openshaw (Christ Church College), 8 Zenith, 40 $\frac{1}{2}$ s.

Class 2.—Scratched.

Class 3.—Touring Singles: J. W. Pedley (Pembroke),  $3\frac{1}{2}$  Triumph, 37 $\frac{1}{2}$ s.

Class 4.—Tourist Trophy Singles: A. C. Hardy (New College),  $3\frac{1}{2}$  Norton, 31 $\frac{1}{2}$ s.

Class 5.—Any twin cylinder: S. P. Openshaw (Christ Church), 8 Zenith, 29 $\frac{1}{2}$ s.

Class 6.—Open class: S. P. Openshaw (Christ Church), 8 Zenith, 28s.

**Rand M.C.C. (Johannesburg).**

Result of mile speed trial held at Johannesburg, 13th October, 1912:

**STANDARD CLASS (seven entries).**

1. J. H. Cutting (Precision) ...	1m. 11 $\frac{1}{2}$ s.
2. F. Dunn (Triumph) ...	1m. 14 $\frac{1}{2}$ s.
3. S. Home (Rudge) ...	1m. 16 $\frac{1}{2}$ s.

**T.T. CLASS (sixteen entries).**

1. P. Flook (Triumph) ...	55 $\frac{1}{2}$ s.
2. W. Hodge (Rudge) ...	59 $\frac{1}{2}$ s.
3. E. Reynolds (Rudge) ...	59 $\frac{1}{2}$ s.

**OPEN CLASS (fourteen entries).**

1. G. Taylor (twin Bat) ...	56 $\frac{1}{2}$ s.
2. F. Layland (twin Indian) ...	57 $\frac{1}{2}$ s.
3. W. Hodge (Rudge) ...	58 $\frac{1}{2}$ s.

**M.C.C. of South Australia.**

The first hill-climb for the season of the above club was held at Snake Gully, a steep rise of threequarters of a mile about sixteen miles from Adelaide. The result was worked out on the formula,  $\frac{C \times T^2}{W}$ , as recommended by *The Motor*

*Cycle*, and first used in Australia by Mr. W. Churchward.

Rider and machine.

Points.

1. N. K. Torode ( $3\frac{1}{2}$ Triumph) ...	360
*2. L. S. Eglinton ( $3\frac{1}{2}$ Rova Kent) ...	306
3. C. Lindsay ( $3\frac{1}{2}$ Norton) ...	323
4. E. G. Clark ( $3\frac{1}{2}$ Rudge) ...	315
5. F. R. Limb ( $3\frac{1}{2}$ Calthorpe) ...	288
6. A. J. Hinton ( $3\frac{1}{2}$ Norton) ...	255

\* Fastest time.

**Mersey M.C.**

The above club held a trial on November 3rd, the course being a secret one of forty miles, embracing some of the most difficult and hilly by-roads in North Wales, the start and finish being at Queen's Ferry. There were over twenty entries, fourteen facing the starter. Result: 1, N. Brown (7 Indian); 2, H. C. Marston (8 Dot and sidecar); 3, J. Fox (7 Matchless).

The annual dinner and prize distribution, followed by the general meeting, will be held at the St. George's Restaurant, Redcross Street, Liverpool, on the 22nd inst.

**Cambridge University M.C.C.**

On the 4th inst. a hill-climb was held on Weston Hill, near Baldock. The hill is about 700 yards long, rising sharply from the main road, with a fairly steep gradient, and terminating in a right-hand bend at the top. The surface was good, except on the corner, where it was loose. Results:

**CLASS I.—Single-cylinders up to 560 c.c.**

On time.

1. E. N. Clifton ( $3\frac{1}{2}$ Triumph) ...	41 $\frac{1}{2}$ s.
2. S. R. Cooke ( $3\frac{1}{2}$ Rudge) ...	45 $\frac{1}{2}$ s.
3. B. de Montigny ( $3\frac{1}{2}$ Rudge) ...	45 $\frac{1}{2}$ s.

On formula.

Fig. of merit

1. E. N. Clifton ( $3\frac{1}{2}$ Triumph) ...	241
2. C. D. Betteridge ( $2\frac{1}{2}$ Singer) ...	248
3. S. R. Cooke ( $3\frac{1}{2}$ Rudge) ...	231

**CLASS II.—Twins up to 1,000 c.c.**

On time.

1. E. I. Gibbons (8 Martin) ...	33s.
2. {E. H. Lees (7 Indian) ... } {J. H. McClure (7 Indian) ... }	38 $\frac{1}{2}$ s.

On formula.

Fig. of merit

1. E. I. Gibbons (8 Martin) ...	277
2. L. L. W. Edwards (5 Bat) ...	329
3. J. H. McClure (7 Indian) ...	356

**CLASS III.—All Comers.**

On time.

1. J. C. Maxwell (8 Bat) ...	38 $\frac{1}{2}$ s.
2. E. H. Lees (7 Indian) ...	38 $\frac{1}{2}$ s.
3. G. F. Randall (8-Bat) ...	39s.

On formula.

Fig. of merit

1. C. D. Betteridge ( $2\frac{1}{2}$ Singer) ...	257
2. W. S. Till ( $3\frac{1}{2}$ Rudge) ...	275
3. S. R. Cooke ( $3\frac{1}{2}$ Rudge) ...	281

Fastest time of the day was made by E. I. Gibbons (8 Martin). Fastest single-cylinder time was made by E. N. Clifton ( $3\frac{1}{2}$  Triumph).

The formula used was that recommended by *The Motor*

$$\frac{C \times T^2}{W}$$

*Cycle*:  $\frac{W}{C \times T^2}$

**NEXT THURSDAY!**

**MOTOR CYCLE**

**BUYERS' GUIDE OF 1913 MODELS**

Containing the full specification of all up to date motor bicycles and passenger motor cycles.

INVALUABLE FOR REFERENCE PURPOSES.

ENLARGED ISSUE.

ONE PENNY AS USUAL.



# Midland Club's Annual Reliability Trial.

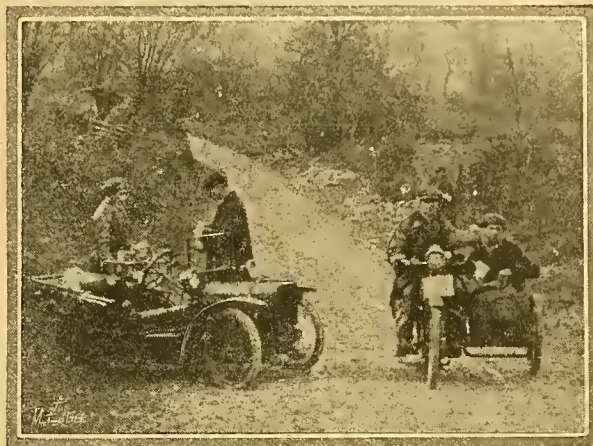
THE annual reliability trial of the Sutton Coldfield and Mid-Warwickshire A.C. was run off on the 9th inst., starting at the early hour of 7.30 a.m. from their headquarters at Sutton Coldfield, the whole course measuring 141 miles. Lunch was taken at the Plough Hotel, Cheltenham, one and a half hours being allowed, the first two competitors being due to arrive back at headquarters at 4.3 p.m., and the others in pairs at minute intervals. The route was well marked with confetti the whole way round, a car for this purpose being kindly lent and driven by Mr. George Patterson.

There were thirty-five starters out of forty entries. Legal limit had to be maintained, and at the secret check, six miles out, at Castle Bromwich, no fewer than fifteen out of the thirty-five starters were within 15s. of schedule time.

On Ilmington Hill (forty-three miles out) there were four failures, these being: G. L. Haydon (3½ Calthorpe), H. E. Perry (3½ Ixion), T. Pollock (3½ James), and G. N. Norris (3½ New Imperial). Pollock was unfortunate here in being unable to change his gear, as the observers on the more severe hills at Saintbury, Sudeley, and Willersey reported him as going well. F. H. Stephenson (Morgan Runabout) retired at Campden with a broken frame, whilst J. Gibson (8 Matchless) was also lost sight of.

On Saintbury Hill (fifty-two miles out) there were five failures, these being: Haydon, Perry, S. E. Elwell (Douglas), Norris, and G. H. Tangye (Forward), who pedalled. Excellent climbs (in thick grease) were made by S. A. Rowlandson (Rudge multi), R. H. Edwards (Triumph), Miss Hough (Scott), A. E. Winchcombe (Scott), W. D. South (5 Rudge and sc.), and H. Newey (2½ Levis and sc.)

On Sudeley Hill (sixty-four miles out) there were eight failures, these being: Haydon, Perry, G. Hill (Rudge), W. R. Jones (3½ Ixion), L. A. Bees (L.M.C.), Tangye, Norris, and K. Clark (6 Corah and sc.); the only lady competitor, Miss Hough, when making an excellent climb, was baulked very



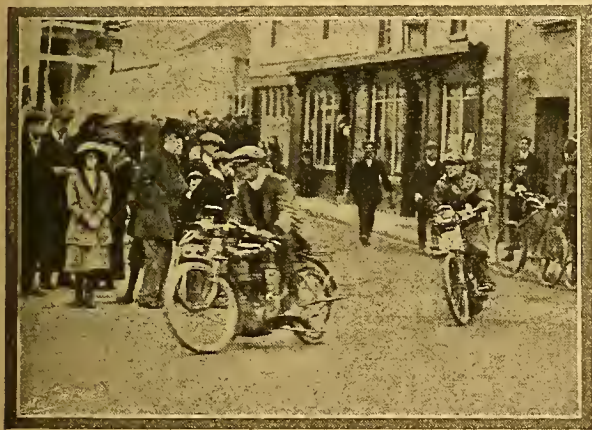
Graham Dixon (3½ h.p. three-speed New Hudson and sidecar) on the steepest part of Willersey hill.

badly by a fallen competitor, but nevertheless succeeded in finishing the hill from a standing start. South ran out of petrol just before arriving in Cheltenham, Perry and Norris ran off the course before arriving in Cheltenham (seventy-seven miles out), whilst Smith and Stuart retired.

After the luncheon interval the only hill worthy of comment was Willersey Hill (sixteen miles out), which was in a fearfully sticky state, and on which there were eight failures, these being: Haydon, Hill, Jones, Bees, Norris, F. Sangster (Ariel), Clark, and G. Bryant (Motorette), whilst B. W. Lee was baulked, his second ascent being good. Specially good climbs were made by Edwards, Miss Hough, Elwell, South, and H. Newey, whilst there was no trace of Tangye. Of the remaining thirty-one competitors Haydon and Bees did not arrive at the finish, and Clark retired at Stratford-on-Avon after colliding with a bridge.

Out of the twenty-eight competitors arriving at headquarters (sixty-four miles out), there were eighteen making non-stop runs, but three of these, Miss Hough, A. D. G. Cleese (Veloce), and S. B. Mayell (Rudge multi), exceeded the time allowance of 2m. either way made at the control at Cheltenham. The other fifteen, therefore, Rowlandson, Edwards, Winchcombe, S. Crawley (Triumph), H. C. Newman (3½ Ivy), F. H. Southam (6 Zenith), W. B. Gibb (Douglas), J. Allday (3½ Allday), S. Smith (3½ Norton), F. C. North (Ariel and sc.), L. Newey (Ariel and sc.), A. D. Arter (James and sc.), H. Newey, H. G. Dixon (3½ New Hudson and sc.), and W. Guest (8 Matchless and sc.), may be considered to be all from which the committee will select the winners of the different prizes, amongst which are the Sutton Cup, two special prizes for amateurs, with special prizes in sidecar class and single-cylinder class.

The competitors were delighted with the way in which the whole route had been marked and the trial conducted. The exceptional way in which both Edwards and H. Newey completed this difficult course deserves to be specially mentioned.



W. R. Jones (3½ h.p. three-speed Ixion) and G. Hill (3½ h.p. T.T. Rudge) leaving Cheltenham.

## M.C.C. WINTER RUN: LONDON-EXETER AND BACK.

The start will be from Hounslow at 7 p.m. on Friday, December 27th. The route to be followed, starting from Hounslow, is *via* Basingstoke, Salisbury, Shaftesbury, Yeovil, Chard, Honiton, to Exeter. The return journey will be *via* Lyme Regis, Bridport, Dorchester, Blandford, to Salisbury, whence the outward route will be followed in the reverse direction to the finish.

Any competitor found more than 15m. ahead of minimum schedule time at any point of the route will be disqualified.

Silencers.—Every machine taking part in the run must be provided with an efficient silencer. Long exhaust pipes, except when these latter form the final outlet to an efficient silencer, are absolutely prohibited. The use of cut-outs in populous places will entail disqualification. No machine will be allowed to start which, in the opinion of the officials, is likely to cause annoyance to the public.

The schedule time for the first competitor at the chief places *en route* will be approximately as under:

Outward.—Hounslow, depart 7 p.m.; Basingstoke, 8.58 p.m.; Salisbury, arrive 11.0 p.m.; Yeovil, 2.31 a.m.; Exeter, 5.4 a.m.

Return.—Exeter, depart 6.34 a.m.; Dorchester, 9.10 a.m.; Salisbury, arrive 11.7 p.m.; Basingstoke, 1.55 p.m.; Hounslow, 3.47 p.m.

Awards.—Gold medals. In order to qualify for a gold medal entrants must sign the checking sheet at Exeter within 15m., either early or late, and the finishing sheet at Hounslow within 15m. early and 20m. late of their schedule time. Silver medals will be awarded to all finishing within 24hrs. who do not qualify for gold medals.

Intending competitors should apply to Mr. E. B. Dickson, The Croft, Pinner Road, Northwood, Middlesex.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### The Taxation of Motor Cycles.

Sir,—I have pleasure in informing you that, as a result of representations made to the Chancellor of the Exchequer by the Hon. Arthur Stanley, C.V.O., M.P. (chairman of the committee appointed by the Auto Cycle Union to represent the following bodies: The Auto Cycle Union, the Scottish Auto Cycle Union, the Motor Cycle Union of Ireland, the Automobile Association and Motor Union, and the Cycle and Motor Cycle Manufacturers' and Traders' Union), Mr. Lloyd George has definitely stated that, having gone carefully into the question, it is not his intention, as at present advised, to propose legislation to give effect to the suggestions made by the Horse-power Rating Committee regarding the increased taxation of motor cycles.

T. W. LOUGHBOROUGH, Secretary A.C.U.

#### The Life of Eriecyclic Hubs.

Sir,—The following experiences, all made with a sidecar and Triumph, may be of interest.

I fitted a N.S.U. two-speed gear last year and have driven 8,000 miles. Recently I had a new pulley flange put on, as the old one was worn; chiefly due to driving with a Whittle belt last year. The wear was not nearly bad enough to make a new flange absolutely necessary, but it conduced to belt slip, otherwise no repair of any kind was done to the gear. I had it once dismantled (after 6,000 miles) prior to going on tour—nothing was wrong.

Tyres: Sidecar (Clincher), 4,500 miles, still on. Front wheel Clincher, 4,000 miles. Driving wheel: (1.) Clincher 1,500 miles; then retreaded, and since has done 1,000 on front wheel. This tyre has not been punctured. (2.) Heavy Hutchinson, 2,000 miles; would have done more, but was badly cut, and the vulcanising did not hold. (3.) Pedley, 2½ in. by 2½ in. rim, 1,500 miles; still on and tread is hardly worn at all. This, to my mind, is the best heavy cover for 2½ in. rims I have seen. The centre ridge wears far better than rubber studs. The same company's belt I found excellent; it stretches a lot at first, but does not crack. Engine: I add this because it has been frequently stated that a 3½ h.p. will not stand prolonged sidecar work. Up to date (5,000 miles with 1912 Triumph, sidecar never taken off) replacements and repairs for engine have been three piston rings. There is now very slight play in the bearings, but rebushing is not yet necessary. Nearly all my riding has been done in the Dublin and Wicklow mountains and in North-Wales. I may add that I am the poorest of mechanics and hate tinkering; also never drive tyres to the bitter end.

CECIL BANCROFT.

#### The Wear of Small Engines.

Sir,—I am very glad to see that "Ixion" has introduced the subject of the wear of small engines for discussion in your columns, and I venture to submit my experiences.

My 2½ h.p. Douglas was new in July, 1910, and has now run 7,000 miles only. From the following list of replacements you will readily understand that the quick wear of the engine parts is a sore point with me. After 3,250 miles the makers prescribed two new cylinders and pistons, one new main bearing, tightening one big end, and a few sundries. Since then I have had another main bush, two more gudgeon pins, both big ends tightened and two new push rods. The valves have been very satisfactory, and only require attention at long intervals, but two inlet valves broke when almost new. After tightening the big ends (not at the maker's) one seized twice, and it seems only fair to conclude that these great shocks were the true cause of the

crankshaft breaking a few days afterwards. I am, however, still an advocate of the "vibrationless horizontal twin," but I do hope that if I go in for a 1913 model I shall not be troubled with such heavy repair bills.

Let us see what owners of 1912 machines have to tell us!

CLAUD MIDDLETON.

[Proper lubrication has a great deal to do with the wear of all engines.—Ed.]

Sir,—I notice that you are inviting readers to give their experiences with lightweights, respecting engine wear, etc. The following is an account of my 1911 2½ h.p. F.N.:

This machine has travelled about 8,200 miles; it has not yet had a bush replaced, the only renewals being a gudgeon pin and two new rings.

My journeys have been chiefly between London and Eastbourne (all weathers); and during the last 2,200 miles I have kept an accurate account of the petrol consumption, which averages 157 miles per gallon.

Since August I have carried a 9½ stone passenger (my weight 11½ stones) 1,200 miles. The engine has not been touched (except externally) since then, and to demonstrate that small engines do not necessarily require constant overhaul to keep them efficient, I went the other Saturday and climbed Westerham Hill, Cudham Hill, and Cudham Church Hill (1 in 4). These hills I had never previously seen, but I climbed them at first attempt.

I retained the F.N. carburetter, but converted it to double control.

D L. FLEXMAN.



A full blooded Chippewa Indian who has deserted his horse for the motor cycle. The machine belongs to an agent and the Indian uses it at every opportunity in preference to his old cayuse.



**Fair Treatment.**

Sir,—For some time past the clutch on my 1912 Douglas has never ceased to slip, and all attempts to improve matters having failed, I wrote to Messrs. Douglas Bros., asking them what they could do to remedy the trouble. By return, I received a reply from the firm expressing their regret that the clutch was unsatisfactory and offering me a new clutch, with pulley and gears complete, free of charge. There was, in fact, only the carriage of the goods to pay for. A few weeks ago the new clutch and gears arrived, but no sooner had they been fitted than it was found that the sliding rod, running transversely through the gear box, was too short to thoroughly disengage the clutch. Thereupon I again wrote the firm, and, by return, a new rod was sent, and now the clutch works as well as the other parts of their efficient motor. I venture to think that such generosity and promptness on the part of Messrs. Douglas Bros. is a matter other motorists might be glad to know of. I am consequently taking the liberty of asking you kindly to insert this letter in your paper. (Rev.) W. A. DOUGLAS HAMILTON.

**Transmission.**

Sir,—As a constant reader of your most interesting and instructive journal, I have noted with interest the numerous letters upon the vexed question of transmission. Until this year I was a firm believer in rubber belt transmission, because I had never ridden a motor bicycle with chain drive. I had read and heard so many objections to a chain drive that I took it for granted that these objections existed, and far outweighed their apparently few advantages. Last spring I bought a two-speed chain-drive lightweight Royal Enfield, and I cannot speak too highly both of the machine and its chain transmission. I have ridden the machine practically every day since its purchase, and the conclusion I have come to is that chain transmission—at any rate as fitted to the Enfield—is almost perfect. In over 3,000 miles I have on two occasions had to shorten the long single chain by pulling back the back wheel a small distance to take up the slight lengthening in the chain; the two short chains have only once required shortening—also a simple matter—and were done at one's leisure at home and not in the pouring rain. The above alterations were not at all dirty, as the chains did not require to be touched by the hands.

The tales of noise, jerking, and last, but not least, wear of back tyre, are all myths. The original back tyre is still being used, and I weigh between 13 and 14 stones, and, moreover, not infrequently have a passenger on the luggage-carrier—a pernicious habit, I grant.

From a medical man's point of view, it is a great comfort to have eliminated that bugbear of belt drive—slipping belt. Then, again, I find a chain drive so much cleaner—it does not fling the mud about like a belt. I am now a decided believer in chain transmission.

(Dr.) B. JACKSON-TAYLOR.

Sir,—At the beginning of this season I was inclined to favour chain drive because I had not tried it. Now I unhesitatingly plump for combined chain and belt drive both for solo and for sidecar work. I have two 1912 machines and some experience with a third. No. 1 has complete chain drive, with two chains to counter-shaft, and one behind. The rear chain requires adjustment every ninety miles, and the front chains every 300 miles. Life of chains is about 3,000 miles. I am somewhat sensitive to vibration, and, although this machine has a smoother running engine and a better spring fork than any other, together with a clutch that slips with the slightest jar, I find that three hours is the limit of enjoyable riding, which I attribute to the chain drive. The snatching of the chains at low speed is unpleasant.

No. 2 is a combined belt and chain drive. The chain is certainly the most troublesome part of the transmission, as it requires adjusting every 300 miles. The machine has run 1,600 miles, and the belt has never been touched, although every time the chain is tightened the belt is made slacker. I can ride all day on this machine without fatigue. On a similar machine last year I found the transmission excellent for passenger work. The life of the chain was 3,000 miles, belt 3,000 miles.

No. 3 is a motor cycle passenger combination, with one chain in front and two behind. The thump of the engine

can be felt by both driver and passenger, and the snatching and noise of the properly adjusted chains is unpleasant.

I note with interest that the Quadrant people are bringing out an 8 h.p. machine with combined drive, and I am of opinion that other passenger machines would be improved if a belt were substituted for the rear chain.

FLEX-DRIVE.

**The Arming of Motor Cycle Companies.**

Sir,—I have read the military motor cycling notes with great interest, and have nothing but good to wish them. I see it is advocated that each of the motor cycle companies should have twenty-five Rexers, and that the thirty-five officers, N.C.O.'s and men should be armed with Mauser pistols. This, in my mind, will be a vast mistake, as, unless you have a first-rate fire control—and you can only get that by prolonged and unceasing training—you will find that ammunition will run out and not be easy to replace. I have seen Rexers on active service, and they eat up a waggon-load of ammunition in no time. I would like to see the units armed with the regulation arm, as it is a well-known fact that magazine fire is not half so deadly as single fire—especially with young troops, who will pull away as hard as they can unless, as I said, they have had a long and careful training, and the military motor cyclist, I judge, will not be able to spare the time for this. I should not care to be the man on the saddle with my half-section dangling a Mauser pistol seated on the pillion in the event of an alarm being suddenly given right ahead.

C.R.L.

Zululand.

**Tyre Levers.**

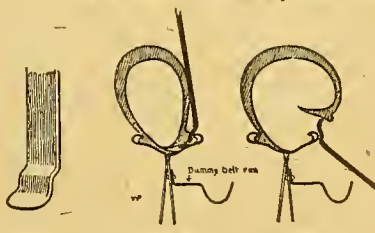
Sir,—I enclose sketch of a lever designed for the removal of the back covers of machines fitted with dummy belt rims.

Fig. 1 shows the lever.

Fig. 2, the lever inserted between the bed of the tyre rim and the cover. This is done at a point which is clear of the mudguard, in order to allow the lever free play.

Fig. 3 shows the lever pressed down, the bead of the cover being free of the clinch before the lever comes into contact with the dummy belt rim.

W. PRETTY.

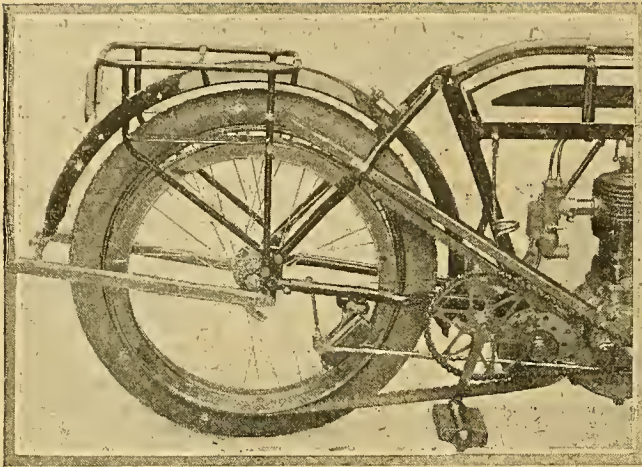
**The Courtesy of the Road.**

Sir,—I am burdened by an accumulating debt of gratitude for help and advice received on the road due to unknown gentlemen whom I cannot repay. I want to tell about it, if you will let me relieve my mind in your columns.

Let me explain. I am a 1912 novice, having bought my first motor cycle and sidecar in May last. I was quite unfamiliar with such things, having no mechanical knowledge or experience. Why, I remember the first time the driving belt came off I did not know how to replace it. I have now done about 2,000 miles, and have encountered most of the beginner's roadside troubles.

What I want to proclaim aloud is this. Never, day nor night, have I been in difficulties on the road but some brother motor cyclists have stopped to ask what my trouble was, and to render practical help, given freely and courteously, and with amazing patience. They have diagnosed the trouble that my inexperience could not detect, and, when the sooted plug, or broken valve, or tappets out of adjustment, or whatever it was, was located, I have been almost pushed aside while the matter was put right for me. And not only motor cyclists have helped me, for, on at least two occasions, motorists have stopped to take my passenger on to the nearest garage and send me help. I still have a sparking-plug lent me on the Brighton Road on the 5th October by a gentleman who said he would be at the Gloucester Hotel that night, but whom I failed to find there on arrival. At another time, when held up in the dark on a country road, a passing motor cyclist took my passenger and myself eight miles to the nearest town.





Belt guard and supporting plate for pannier bags on the 4 1/2 h.p. Singer.

If, sir, there is any other sport where such astonishing decency and good feeling are shown to beginners, I wonder what it is. I thanked all these gentlemen as well as I could at the time, and I thank them again. Each has always said, "That's all right," and ridden away. As it happened, in the case of the breakdown mentioned above, that my passenger was an American guest to whom I was trying to show something of our countryside, I was not a little proud that he also obtained such a favourable impression of the good feeling amongst British motor cyclists on the road, and I know he has not failed to take that impression home with him.

In conclusion, it only remains for me to say that I am trying to catch the spirit that has been shown to me. It was with peculiar satisfaction the other night that I assisted an absolute beginner to locate his trouble, and diagnosed it right (sooted plug) the very first time. "Amongst the blind the one-eyed man is king!" LE 2555.

#### A Long Journey on a Cyclecar.

Sir,—I should like to give my experiences of a long run in a Rollo cyclecar, as I think they will go to prove two very important points which a cyclecar, with any claims to be practicable, must have, namely, simplicity and reliability.

I decided to go to Birmingham, take delivery of my car at the Rollo Car Co.'s works, and drive it to Aberdeen, a distance of close on 500 miles.

Having never before driven a car (my motoring experiences being confined to two years of a motor bicycle), I received an hour's driving instruction from one of the mechanics at the works. So easy did I find the steering and manipulation of the clutch and speeds, that on the next morning, with the utmost confidence, I started off alone on my long journey. The front seat easily held my suit cases, so that I was absolutely independent. With easy running I arrived at Darlington in the afternoon of the second day, the only trouble being a small piece of grit in the jet; this took a very short time to put right and has not occurred again.

After leaving Darlington, the rain came down in torrents for the whole of the day, but I was extremely well sheltered by the hood, while there was no belt-slip of any kind.

North of Newcastle tyre troubles started; two bursts, the first caused by a piece of glass, and the second by a large nail. However, thanks to the four wheels, the covers were easily removed and repairs made. After reaching Scotland, I had no further troubles of any kind and easily did the 220 miles from Berwick through Edinburgh, Stirling, and Perth to Aberdeen in two days.

During the whole run I had only to touch the engine once to replace a sparking plug. There was absolutely no overheating, and the oiling arrangements (exhaust pressure feed) were admirable.

The belts had only to be adjusted once, two links out of each. Since then I have only had to take out one more; in fact, three links in close on 800 miles. The three-point suspension of the car is admirable. The roads in places could not have afforded better tests.

c28

The improvement over a motor cycle and sidecar is immense; handy in traffic, with speed sufficient for most people, the Rollo cyclecar in reliability, simplicity, and comfort (that is in springing and protection against dust and rain) is far ahead of any motor cycle combination I have seen, and all these advantages are obtained at very slight extra initial cost and expense in upkeep.

J. F. MACDONELL.

#### Tyres and Tyres.

Sir,—We notice that your correspondent, "Roadside Solutioner," complains that he has not yet found a satisfactory tyre for heavy work, and we can only come to the conclusion that he has been unfortunate in his choice. We think it a pity that he should have felt constrained to utter such wholesale condemnation, and, under the circumstances, we trust you will allow us sufficient space to draw his attention to at least one make, of which, apparently, the extraordinary merits are not sufficiently known. This tyre, the Rom, has a very heavy tread formed by combination of rubber bars and steel studs, these being placed alternately.

Every motor cyclist to whom we have recommended this make has been most enthusiastic about the results obtained. One rider of an 8 h.p. two-speed machine with sidecar found no appreciable signs of wear on the back wheel tyre after it had been 2,500 miles, and for the first thousand he had no occasion to use a pump. HITCHINGS, LIMITED.

Sir,—I shall be glad if you can find space to insert my reply in your paper, *The Motor Cycle*, to "Roadside Solutioner," who must have had cheap covers or else is a bad driver, because I have just done 1,000 miles on my 5-6 h.p. V.S. and sidecar, having been through Lincoln, Yorkshire, etc., covering up to 137 miles in a day, and have not had one puncture or even had to pump up my tyres, which are 26in. x 2 1/4in. Palmer cords, and am pleased to say are good for at least another 2,000 miles, as the rubber studs are not worn smooth; this proves that all tyres are not the same as "Roadside Solutioner" buys, and as I have no interest in any tyre company I cannot pass his remarks without a murmur, but advise him to give these tyres a trial. Then, perhaps, he will have a different opinion.

GEO. BENNETT.

#### THE CRAVEN PATENT FOUR-SEATED SIDECAR.

A four-seated sidecar is somewhat of a rarity, and its introduction was due to the exigencies of the growing family of its designer, who can now take out his wife and four children. The body has side doors, is coachbuilt, and



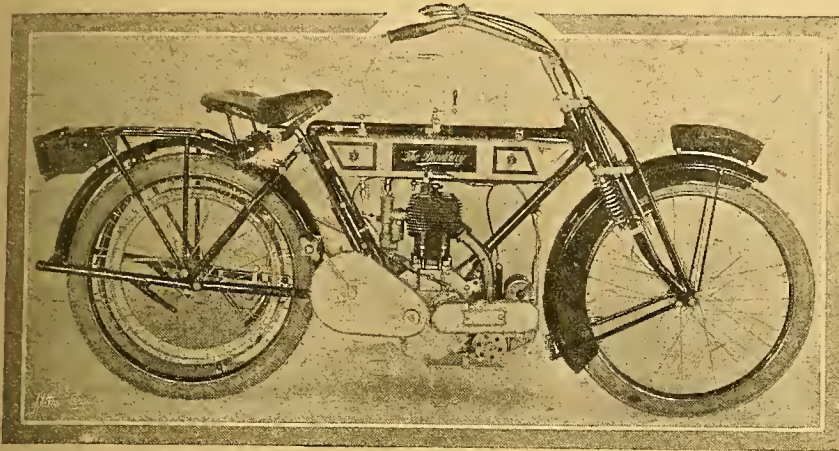
An interesting type of family sidecar.

of not unpleasing design, while the upholstery is comfortable. The machine, which, like the sidecar, is built by the Craven Motor Co., 116, Greenwood Road, Dalston, is propelled by a 9 h.p. J.A.P. engine, and has a three-speed Chater-Lea gear box, multiple disc clutch, and 650 x 65 mm. Dunlop tyres.



# MOTOR BICYCLES FOR 1913.

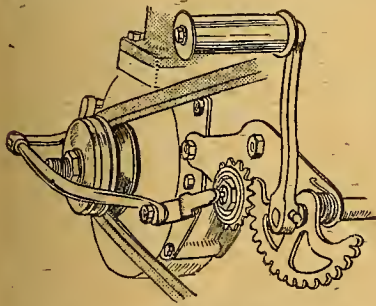
Details and Illustrations of the Latest Models.



Valve side of the Bradbury, with two-speed engine shaft gear.

## BRADBURY.

The standard Bradbury for 1913 will, in all essentials, remain as heretofore, and still have an engine of 89 mm. bore and stroke, but the side flaps on the front mudguard will extend right to the front, and a belt guard will be fitted. The two-speed belt-driven model will be fitted with an engine-shaft gear made by the Bradbury Co. and a kick-starter. Special heavy 2 $\frac{3}{4}$  Dunlop tyres will be standard. There will be two models fitted with the Bradbury counter-shaft gear, one with chain drive throughout and the other with combined chain and belt, both having a new gear changing device. In these machines it is worthy of especial note that the transmission will be fully guarded and the chain connected with the kick-starter enclosed in a case. The Sturmey-Archer or Armstrong three-speed hubs will also be supplied. The Druid forks will have improved springs. Four models of sidecars will be marketed, one having a coach-built body of three-ply, wood finished in French grey or dark green.



L.M.C. kick starter, high speed clutch and operating mechanism.

## CORAH.

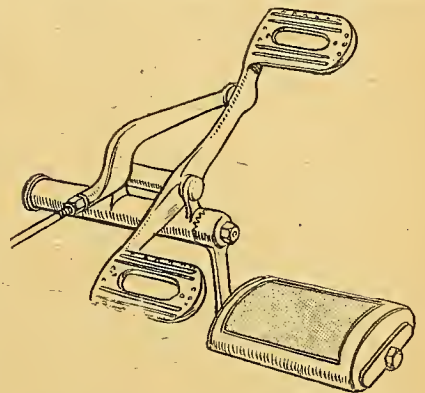
A recent call at the Corah works at King's Norton established the fact that this firm will fit J.A.P. engines exclusively next year. The T.T. 3 $\frac{1}{2}$  h.p. model will be supplied either with the 85x85

mm. or 90x77 mm. J.A.P. and overhead mechanical inlet or side by side valves. The 6 h.p. twin sidcar model will be fitted with the Rigby two-speed gear, which is of the selective clutch type, the standard ratios being 4 $\frac{1}{2}$  and 8 to 1. The lugs for sidcar attachment are brazed to the frame, and the Corah Co. will make their own sidcar. The frame improvements include double tubular chain stays, the lower stay being extended and attached to one of the lower crank case bolts. The ball head is one inch longer than before, and the lower rail is of D-shaped tubing with the flat portion uppermost; this allows half an inch more head room for the cylinder. The tanks of the single-cylinder machine are half an inch wider, and those of the twin model three-quarters of an inch wider. A feature of these machines is the foot-operated oil pump; this is made for the firm by Best and Lloyd, and is charged by depressing a pedal hinged to one of the crank case cradle bolts. The pedal

is connected by a rod to an eye at the bottom of the pump plunger, and this latter is returned by spring pressure, the oil flow being regulated by an adjustable needle valve. The action of the pump plunger is the reverse of the usual type, viz., the plunger descends to charge the pump barrel and ascends to feed the engine.

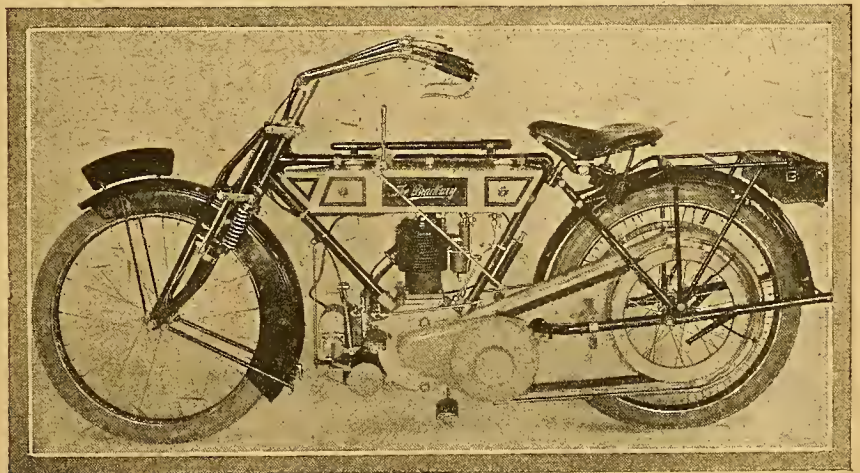
## BROUGH.

Two types of motor bicycles only will be produced in 1913 by W. E. Brough and Co., of Basford, Nottingham, viz., a 6 h.p. twin and a 3 $\frac{1}{2}$  h.p. single. The twin-cylinder engine has a bore of 77 mm. and a stroke of 88 mm. The cylinders are very clean castings, and an air passage



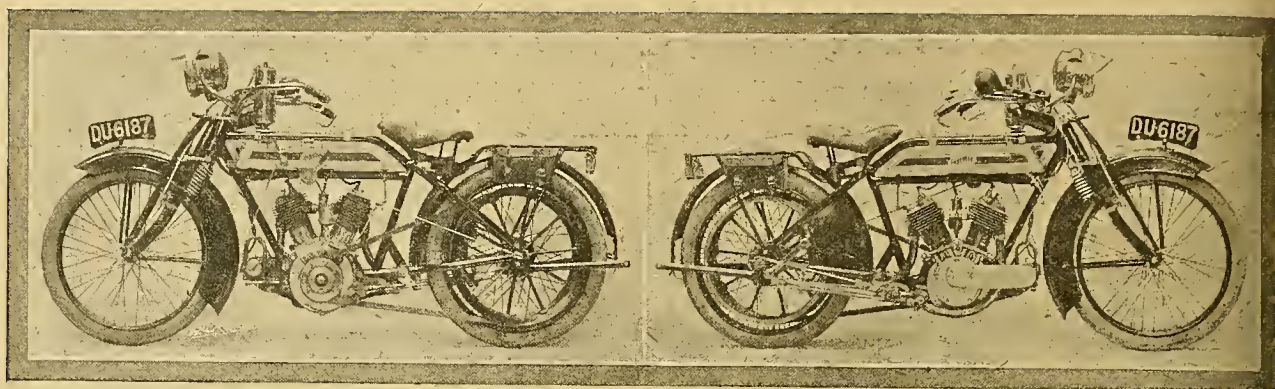
Geared down clutch pedal on the new Triumph.

is left between the valve chests and the cylinder. Very large valves having 1 $\frac{1}{2}$  in. ports are fitted. The timing gear is unusual, as the gear wheels are set one above the small crankshaft pinion and one directly below. By this means one cam operates both inlet valves, and the other both exhausts, so that the inlet and exhaust valves are synchronised on both cylinders. The big end bearings are set side by side and are of large diameter.



The 1913 model 3 $\frac{1}{2}$  h.p. Bradbury chain and belt-driven machine.





(1) Belt side. (2) Valve side of the new model 6 h.p. three-speed Brough. A starting handle is fitted.

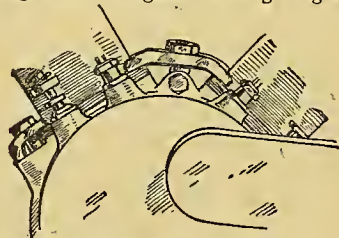
The flywheels are of large diameter, and the magneto platform is cast with the base chamber. The Senspray carburetter will be a standard fitting, as also will the Sinms magneto.

Transmission is by lin. belt and Armstrong Mark VI. gear. This gear gives a

riding position, a ground clearance of 4½ in. is obtained below the crank base.

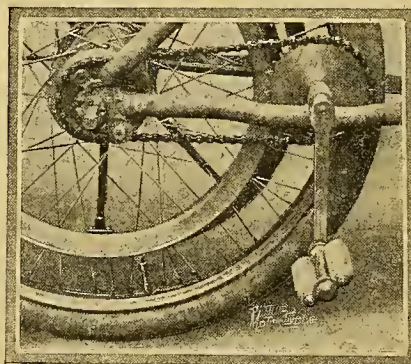
The control for the gear change is fixed to the lower rail so that the lever is not liable to be damaged. A finger adjustable pulley is supplied which enables one to alter the ratios in a few seconds. Another important item is the inlet pipe which is cast and fixed with bayonet joints, particular attention being paid to the prevention of air leaks. The neat arrangement of the machine will be noticed from the photographs. The engine

be obtained, the chief alteration being that it has a fixed gear instead of the three-speed hub. All models have enclosed brake cables, and three lengths of piston can be ordered—high, medium, or low compression.



Method of holding down cylinders on new 3 h.p. twin Enfield.

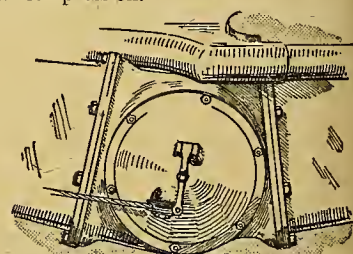
direct drive on top, and the engine is started by a handle, which rotates the driving gear through the medium of a short chain. The frame has a dropped top tube, and is designed to give a very low seat position, the actual height to the top of the saddle being 29½ in. Druid forks are fitted, and the carrier has special lugs for supporting the pannier tool-bags and the pump. The front mudguard has side extensions for its full length, and is supported by flat stays. There are no stays on the rear guard to interfere with tyre changing, as it is supported by the carrier. The tank has a capacity of one and a half gallons of petrol and three pints of oil. Lubrication is by means of a ball valve pump, a tap also being fitted to prevent waste. Though held from the top, the tank is very securely fixed and the seams are double. In spite of the low



The Wulfruna pedal starting mechanism.

pulls well and runs very smoothly, and our readers will remember the fine reliability records set up by Mr. G. Brough in various trials throughout the year.

The 3½ h.p. model has a bore of 85 mm. and stroke of 88 mm. and a shorter frame, but in other respects resembles the twin. A T.T. type of each model can



Clutch operation and chain cases on the new Clyno.

## N.S.U.

Ever since the N.S.U. motor cycle has been sold in England, its manufacturers have made a careful study of English requirements, so that, notwithstanding the fact that it is made abroad, the N.S.U. has always met with a favourable reception in this country and its colonies. The new models are the 3 h.p. twin and the 3 h.p. single. The motive power of the former is a twin-cylinder engine with horizontal radiating fins, bore and stroke 58×75 mm. The magneto, the waterproof Bosch, is gear-driven, and is placed in a protected position behind the rear cylinder. The cover of the transmission gearing, which is a particularly neat job, forms part of the cover of the distribution gear chamber. The chief novelty is the new double lever control carbur-

## THE 1913 PATTERN N.S.U. CARBURETTER.

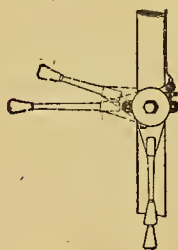


FIG. 1.

Air and throttle controls on the handlebar. They open inwards.

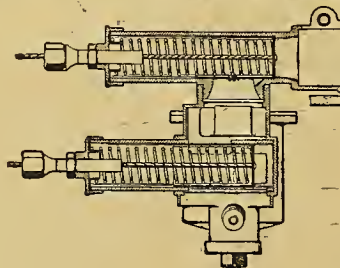


FIG. 2.

Section of spring controlled throttle and air pistons operated by Bowden cables.

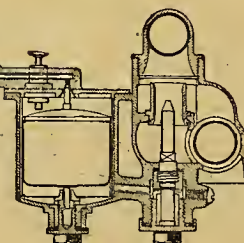


FIG. 3.

Section of the N.S.U. carburetter, showing float agitator, petrol pipe union, and jet.

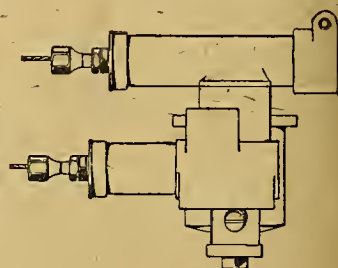
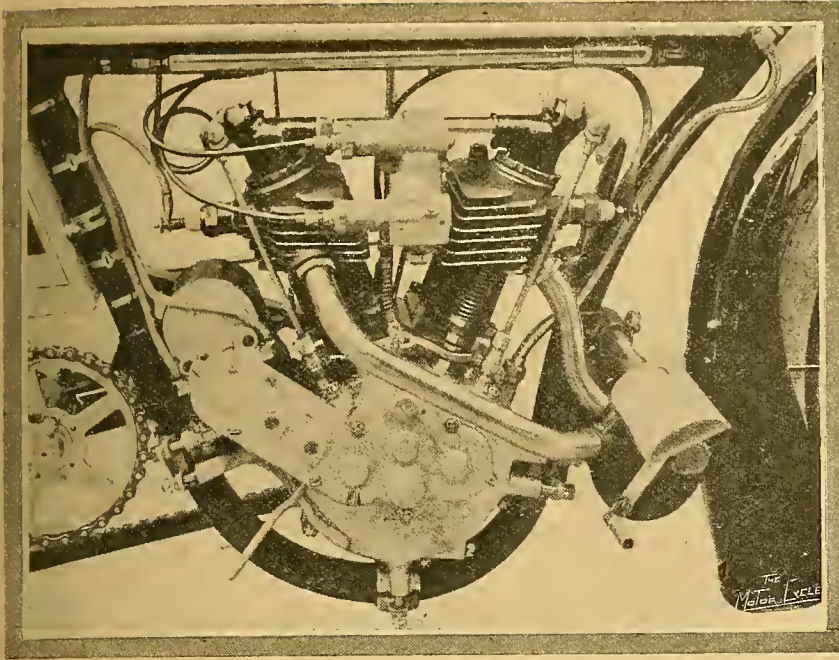


FIG. 4.

Exterior view of complete carburetter.

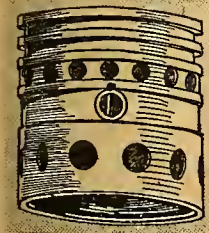




The latest N.S.U. twin-cylinder engine and carburettor.

etter. Last year the N.S.U. carburettor had a single lever, but, owing to the request of riders, the makers have reverted to the double control, as they feel that more perfect results can be obtained thereby. As will be seen from the accompanying illustration, the flow of oil and gas is restricted by means of piston slides, all the air being controlled from below the jet. Both tappets are adjustable, while footrests and a pedal-operated cut-out are now fitted. Large filler caps are now supplied. The frame has the top tube slightly dropped at the rear; the engine is carried in a loop. The hinder portion is sprung as before, and the excellent spring forks are retained. The N.S.U. gear remains unaltered, except that a slightly stronger type is fitted to the  $6\frac{1}{2}$  h.p. twin for sidecar work. Another new model is the 2 h.p. single,  $50 \times 72$  mm. Both this and the 3 h.p.  $73 \times 78$  mm., single, which we illustrate herewith, are practically identical as regards the details we have described, except that the 2 h.p. model

is supplied with a Ruthardt magneto and a coaster hub brake. It is interesting to note that the brakes on all the other models act on the rear wheel; that bearing on the belt rim is shod with wood, while the band brake, introduced during the latter part of last year, remains the same as

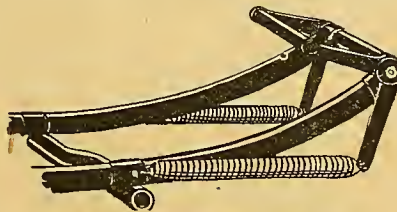


Drilled steel piston tested on the A.J.S.

before. The lightweight N.S.U. models may be purchased fitted with an adjustable pulley, an under-geared pulley, or a two-speed gear.

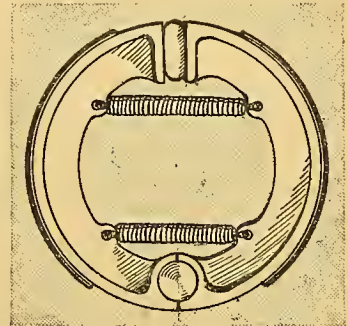
### O.K. SIDECAR.

The chief departure in next year's programme of Messrs. Humphries and Daws is the addition of their existing models of a 6 h.p. chain-driven twin-cylinder sidecar



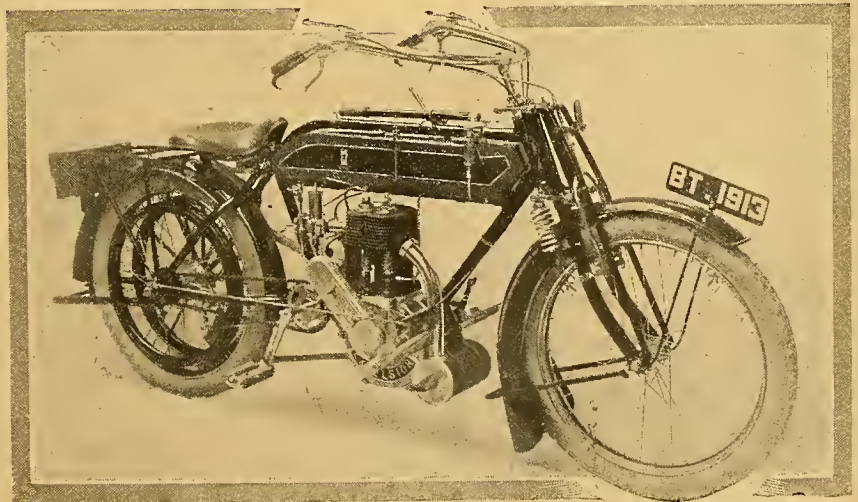
System of rear springing adopted on the O.K. sidecar.

combination. This machine will be fitted with a two-speed gear of a simple type, which, by means of expanding clutches, engages either a high or low gear chain. A shock absorber is also fitted to the rear driving sprocket. The engine is a 6 h.p. J.A.P., and the frame and fittings are particularly neatly carried out. The tank, which is enamelled all over, is supported on lugs brazed to the lower rail, and is fitted with a Best and Lloyd semi-automatic lubricator and large hinged filler cap. The Amac automatic carburettor will be fitted as standard, and a Bosch magneto supplies the current. Attached to this machine is a sidecar of unusual construction; the sidecar side members are bent in a long sweep which follows the lines of the body, and across the rear lies a tubular member. This forms a long bearing for a cross-shaft, which carries at each end a bell crank lever, one arm of each being attached to the body, while the



Shoes and cam of A.J.S. internal expanding brake.

other arm is connected to the frame by a coil spring, thus giving a very comfortable suspension. The front is suspended on a small check spring. Besides this model, there will be T.T. and tourist models fitted with a single-cylinder  $85 \times 88$  mm. engine and a  $2\frac{3}{4}$  h.p.  $70 \times 90$  mm. lightweight. All these machines are carefully finished, and much attention is given to details.



The big single-cylinder three-speed Excelsior, a bicycle particularly suited for sidecar work.



## TRIUMPH.

Six patterns of Triumphs will be marketed during 1913, all as usual possessing the same type of power unit. The 85 x 88 mm. engine has been very little altered, though it has been found by reducing the size of the port opening that the possibility of fouling the plug has been almost eliminated.

The two new models adopted are a Tourist Trophy model with free engine clutch in rear hub and a three-speeder, the gear used being the Sturmev-Archer hub gear.

We have been privileged to test one of the three-speeders on the road, and can speak in high terms of the new silencer design.

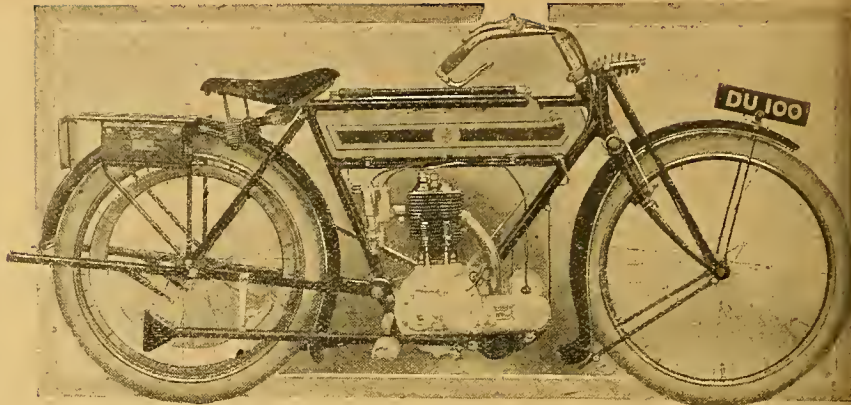
Encased ratchet of the Triumph gear changing mechanism, also showing petrol indicator at top of tank.

So far as the rider is concerned, the exhaust being swept to the rear of the machine renders the driving much more pleasant, especially on a long run, for the continual "pop, pop, pop," which becomes so irritating to some on a long day's ride, is noticeably absent.

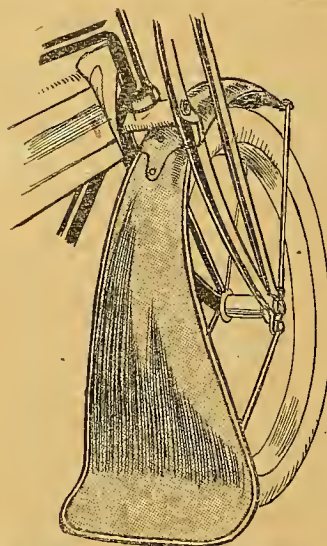


Top of Triumph new tank. The dial showing the amount of spirit in the tank can be seen by the rider when in the saddle.

Amongst the special points which have received attention in the new models are several important ones making directly for the general convenience of the rider. First of all there is the new gear lever arrangement, two sketches of which are



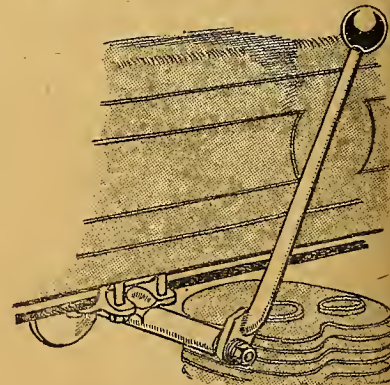
1913 model T.T. Roadster Triumph.



Extra wide mudguard on the 1913 Triumph, doing away with the necessity of a shield over the magneto.

given. The lever, which is ball-headed, is of good size, and conveniently placed alongside the tank on the right-hand side and almost immediately above the engine. The shaft of the lever is carried on a bracket on the lower horizontal tube,

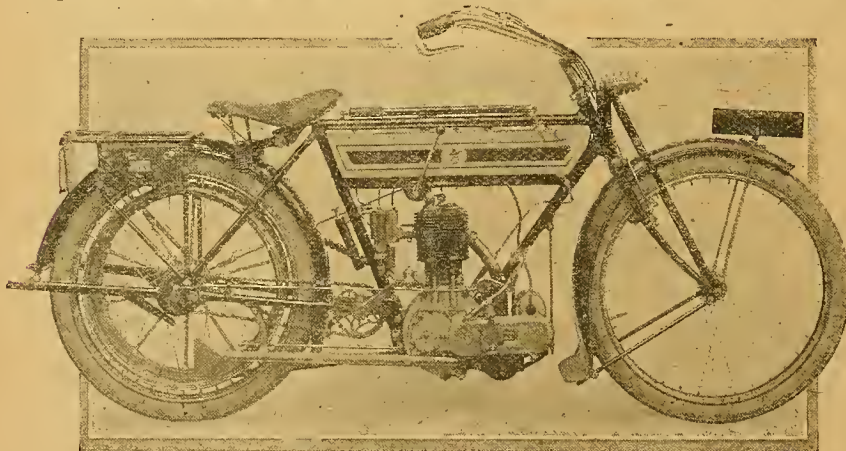
which, as shown in the second sketch, terminates in a circular ratchet and pawl device, and is neatly covered in with a dust cap. The dimensions of the device are thoroughly sensible in every part, and, while it works quite easily, the ratchet provides that the accidental slipping of one gear to another is absolutely prevented. The petrol gauge, consisting of a clock dial carried under the glass lid of the petrol filler cap, will be noticed in the first sketch of the gear lever. The Sturmev-Archer hub gear is used, and for the control of the clutch of this, a special toe-and-heel pedal, working on the dead-centre principle, has been designed. In this attention has been given to providing means whereby the clutch engage-



The large change speed gear lever adopted by the Triumph Co.

ment can be performed exceedingly gently and progressively. The sketch shows what a large amount of leverage is available. The brake mechanism, as applied to the rear wheel, has also been redesigned, and, as shown in the sketch, now contains nothing but straight-pull links. The first link from the pedal itself is placed between the belt pulley and the crank chamber, and is connected to a cross pivot which runs through to the further side of the machine, and there operates the brake through a crank and a second straight lever.

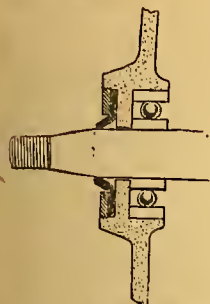
In the Triumph engine itself very few changes have been made; adjustable tappets are provided, and work on a simple screw principle with a lock nut. A very good point, however, is the provision of a special washer to keep out mud and



The new three-speed Triumph, which has a special design of gear changing lever.



## New Models.—



Crank case washer on the new Triumph to prevent escape of oil.

dust from the ball race of the crankshaft at the pulley side; a section of the crank chamber at this point is given, showing how the leather washer is specially formed so as to tend to grip the shaft. The washer is shown in the sketch in black, and is held in position in the housing by a left-hand

threaded nut.

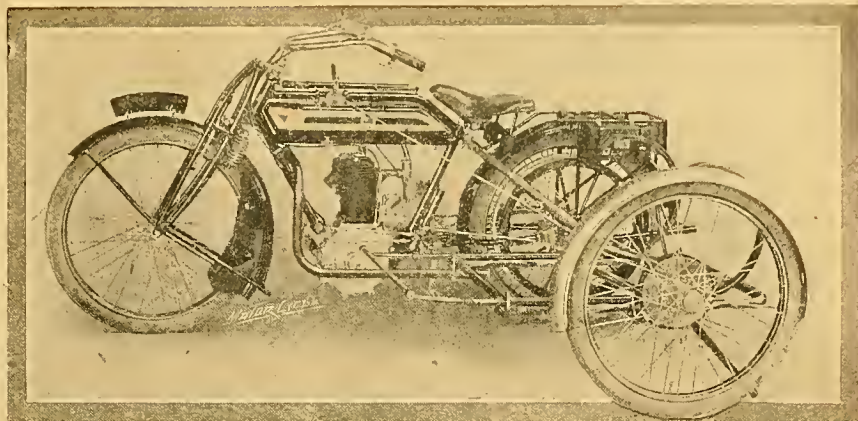
The mudguarding arrangements on the front wheel of the new models is very complete, a deep wide flap of the form shown in the sketch being fitted to the front wheel. This acts so well that any further mud-shield for the magneto, etc., becomes unnecessary.

2 3/4 in. covers have been adopted as standard on 1913 Triumphs, which will undoubtedly prove a great convenience in the long run, and should prove more comfortable and give greater mileage than the smaller section.

### REX-JAP.

It is expected that the largest demand next year will be for machines fitted with the 6 h.p. (76 x 80) and 8 h.p. (85 x 83) side by side valve twin-cylinder J.A.P. engines. A new type of single-cylinder J.A.P. engine, 85 bore x 95 stroke, with mechanically operated overhead inlet valve, will also be fitted.

The frame has been strengthened at the ball head, which is considerably longer, and the steering rake has been increased. The sidecar lugs are brazed solid with the frame, thus ensuring correct alignment and longer life for the back tyres. The sidecar has four point attachment and vertical coil springs in addition to the usual Cee springs. The bodies are made in two types—one a torpedo coachbuilt



The Rover Co. has added a sidecar to its range of models. We illustrate above the chassis design. Observe the band brake, stand, and long Cee springs.

body, painted to match the machine, and the other a torpedo solid cane body. The springs in the upholstery of the body and the special springs on the chassis insulate the passenger from all vibration.

The tank has been improved by having the corners rounded off. The petrol capacity has been increased to two gallons. The oil tank is fitted with a small air pump, which is used to raise a pressure in the tank of about 5 lbs. per square inch. This forces the oil under pressure through a sight feed drip lubricator on the top of the tank, where the flow of oil can be regulated by a hand-controlled needle valve.

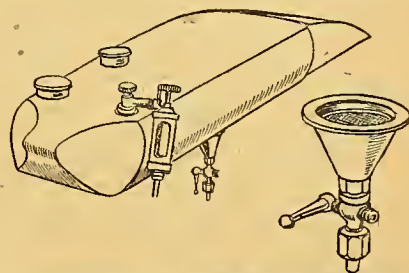
Every machine will be fitted with a belt guard, which extends round the engine pulley and underneath the belt to the rim. The mudguards have been improved, and the side flaps extend right round the front mudguard. This is an excellent point. Front wheel stands will be fitted to all models.

The gear is unaltered, except that the low gear contracting V shaped band has been replaced by a flat one. The leverage on the foot brake has been increased. The cantilever springing for the saddle pillar and comfortable rubber-covered footboards ensure the comfort of the driver.

### CALTHORPE.

The Calthorpe models for next year will be three in number, viz., a 4 1/4 h.p., a 3 1/2 h.p., and 6 h.p. twin. The last named is being specially constructed for use as a sidecar combination, for which purpose lugs have been permanently brazed into the frame.

It will be fitted, as with the other models, either with a two-speed Calthorpe counter-shaft gear, complete with kick starter,

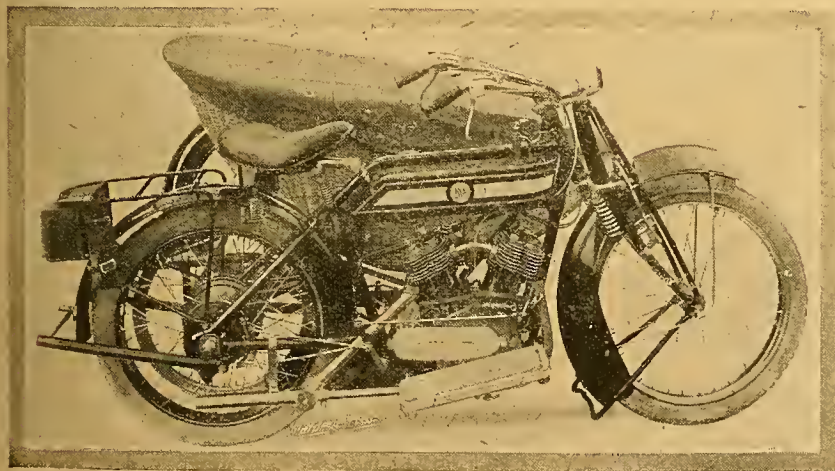


1913 Calthorpe two-gallon tank and detachable sump filter.

and driving both by chain and belt, or with an Armstrong three-speed gear, or with the usual single gear.

Several important improvements have been made in the 6 h.p. model. To start with it has a really sensible sized tank, holding two gallons of petrol and three pints of oil. A sketch of this is given, showing its nicely rounded sides, the Best and Lloyd drip feed lubricator, and also the petrol sump and filter—a special feature. This last is also illustrated in detail, and has the advantage that the last drop of petrol is used from the tank, whilst should water get into the petrol one can ensure that upon emptying the tank it gets away. The filler caps are of the screw-down type, and that of the petrol tank has a glass lid. Druid forks are standard.

Practically no change has been made in the Calthorpe gear, which is driven by a chain from the engine and then transmits through a belt to the back wheel, except the provision of an adjustable belt pulley. The rear chain stays in all models are made sufficiently wide to allow a hub gear to be fitted to the fixed gear models at any time and without structural alteration should a change be required.

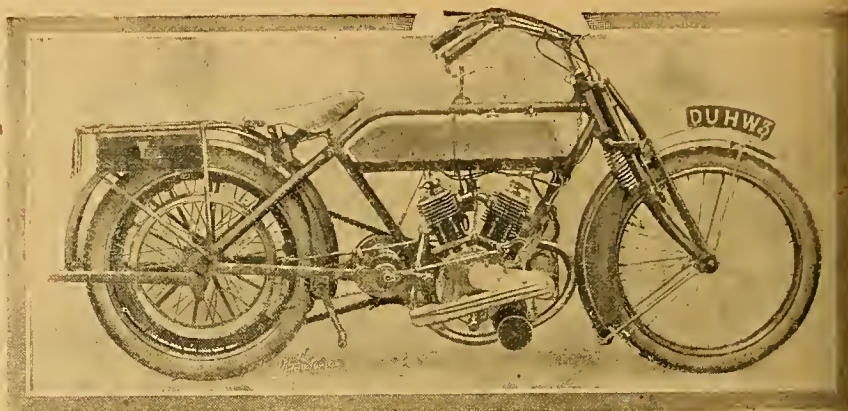


How the 6 h.p. Rex-Jap sidecar model will appear in 1913.



## NEW HAZLEWOOD.

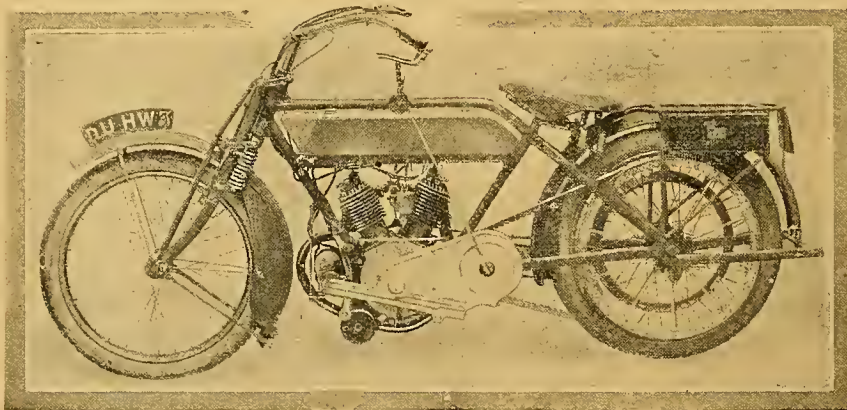
As mentioned in our last issue, the Hazlewood Co. have produced a new model with an Armstrong Mark V gear in the bottom bracket. The fitting has been particularly neatly carried out, and the gear is mounted in eccentric trunnions to allow for front chain adjustment. One of these trunnions has a serrated outer edge which effectively prevents the adjustment from slipping. A chain connects the gear to the engine, and is enclosed by a quickly detachable aluminium casting. The engine is a specially constructed twin J.A.P. of 70 mm. bore by 76 mm. stroke; it has extra large flywheels to ensure smooth running and an oil well on the timing side. The fittings of the motor cycle are little altered but two points are worthy of notice. The rear rim on which the brake shoe works is now made in the form of an inverted V, so that the wheel may be detached without disturbing the brake-gear. The second interesting point is that the rod actuating this brake is supported in the middle by a bracket, which also forms a spring stop for pulling it off the rim. This machine is sure to attract a considerable amount of atten-



Valve side of new twin Hazlewood, with counter-shaft gear.

tion for sidecar work. The engine, which is being made throughout at the Ariel works, is 83 x 88 mm. bore and stroke. The valves are side by side, and the cylinders are set at an angle of 60°.

The drive is by chain throughout, a two-speed selective friction clutch gear taking the place of the usual counter-shaft. This is operated by a quadrant lever on the tank. The machine is built especially for sidecar work, and has lugs especially for this purpose brazed into the frame. A handle-starter is provided.

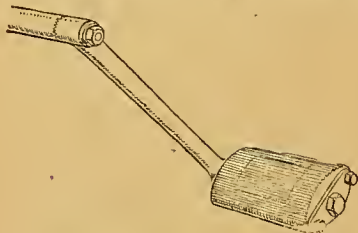


Belt side of the new twin Hazlewood which has an Armstrong three-speed gear in the counter-shaft.

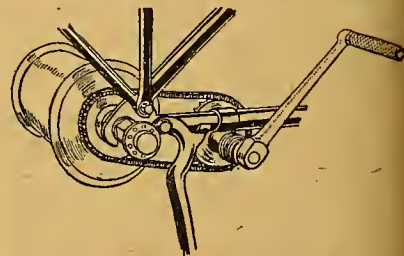
tion, as we have frequently heard the desire for a three-speed counter-shaft gear expressed. Its obvious advantages are accessibility, neatness, and the possibility of using a large belt pulley. Its disadvantages are considerably harder to discover.

## ARIEL SIDECAR.

The principal introduction for next season which this firm are making is a 7 h.p. twin machine, designed especially

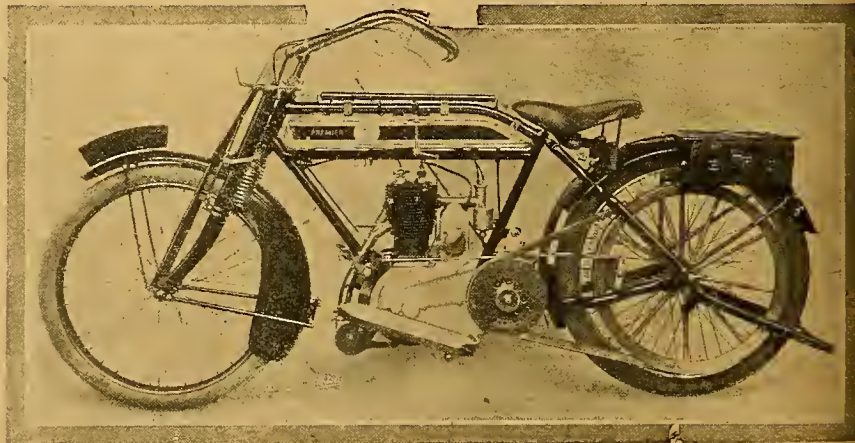


Ariel adjustable footrest. Different lengths to suit tall or short riders are now obtainable.



The kick-starter fitted to 1913 Ariels.

In the 3½ h.p. Ariel machine using an Armstrong three-speed hub a kick-starter is now included. It is, as can be seen, very neatly arranged, and has its pedal in a very convenient position.

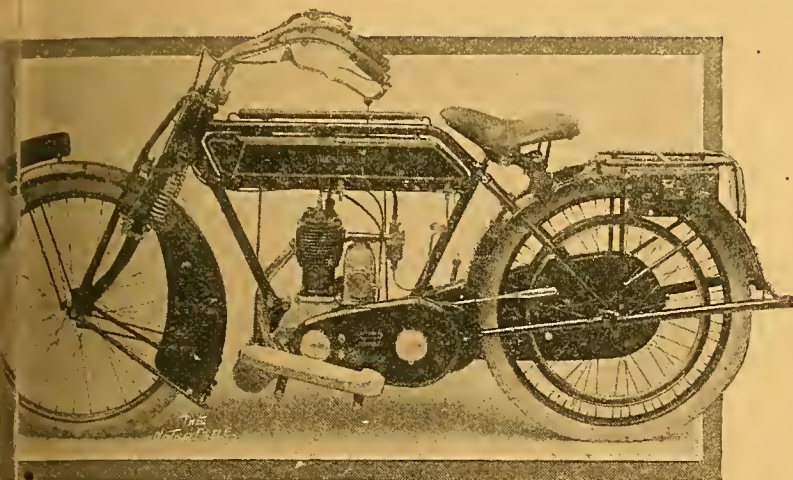


A SINGLE-CYLINDER SIDECAR MODEL.

New 3½ h.p. Premier fitted with the company's counter-shaft two-speed gear. An enclosed chain transmits the power to the gear, a 1" belt being used for the final drive.



**THE NEW 2½ H.P. TWO-SPEED SUNBEAM WITH OIL BATH CHAIN CASES.**



2½ h.p. two-speed Sunbeam, a newcomer for next year.

**SUNBEAM.**

is week we took the opportunity of  
ing one of the 1913 2½ h.p. Sunbeam  
es, and were particularly impressed  
its clean and workmanlike lines.  
hole of the transmission and kick  
is enclosed, rendering it practically  
the proof, in addition to which the  
old model will be finished in black  
out, that is to say, black celluloid-  
handle-bars, black hubs, and  
spring fork fittings, which latter  
most important point, as they are  
awkward to clean. The edges of  
is are, of course, plated where the  
shoes touch, but this is almost the  
point liable to rust. The tank also  
is, finished with broad gold lines.  
it be imagined that this would give  
any appearance to the machine, but  
not so, as we can say after seeing  
ished article.

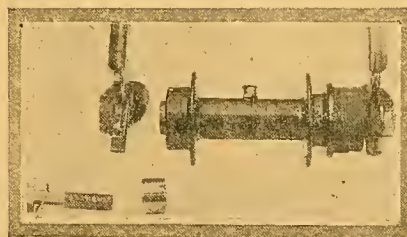
**The Motive Power.**

h engine has a bore of 75 and a  
of 79 mm., and has a clean compact  
ence. The crankshaft is fitted with  
m roller bearings, which, of course,  
ne and not point contact. Adjust-  
ppts are fitted, and the cams are  
external type. A striking point is  
se of the timing gear bearings, which  
ide of cast iron which has particu-  
ood wearing qualities. The valves  
ge for the size of the engine, having  
port diameter of 1½ in. From the  
at port a 1½ in. outside diameter pipe  
also a large silencer, which consists  
expansion chamber from which the  
escapes through a series of ¾ in.  
e. The flywheels have eccentric  
for balancing purposes, and the  
on pin is hollow and driven into a  
two-ring piston, and prevented from  
ing the cylinder by copper studs.  
are type enclosed Bosch magneto lies  
hip behind the engine, and is gear-  
through a short train of gears.  
the end of the crankshaft lies a  
g sprocket half by a spring between  
erodo faced plates, which act as a  
g clutch to take away the harsh-  
of the chain drive. A Hans Renold  
transmits the power to a multi-  
clutch on the counter-shaft, and

thence through a neat two-speed gear of  
the sliding dog type to a sprocket on  
the offside of the machine, and finally by  
chain to the rear wheel. Behind the  
clutch a kick starter of the wheel and  
quadrant type is mounted, and both chains  
and starter are enclosed in quickly de-  
taenable oil bath cases.

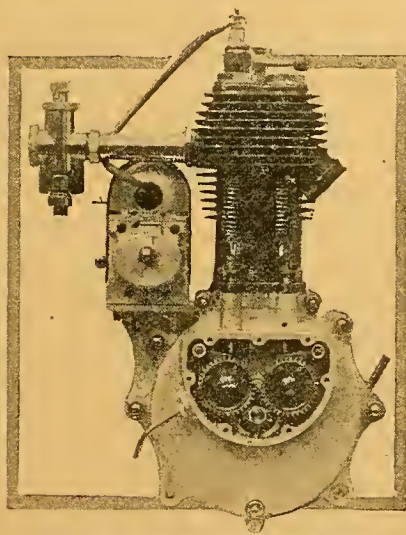
**Tyre Repairs Easy.**

The rear wheel is mounted on a divided  
axle, so that by detaching a central bolt  
and a distance piece the air tube may be  
removed entirely without dismounting the  
wheel from the frame. The adjustment of  
the front chain is carried out by sliding  
the gear box, which, however, cannot come  
out of line. The rear chain is adjusted  
by moving the rear wheel backwards;  
26×2½ tyres are fitted, and the machine  
is protected from mud by extensions on

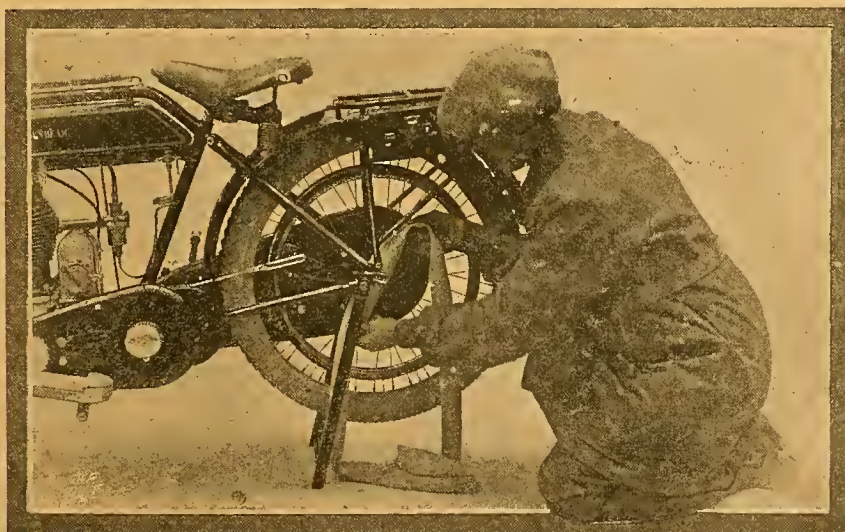


Sunbeam back hub, showing the divided axle.

each side of the rear guard and side  
flaps on the front guard. All Bowden  
wires are enclosed in the handle-bar, in-  
cluding that from the hand-operated clutch  
lever. The tank is supported from below  
and is fitted with large filler caps and a  
Bost and Lloyd sight feed drip. The  
filler caps have large gauze strainers  
within. The carrier is welded into one  
piece and carries pannier tool bags; the  
machine is finished off with neat rubber  
covered footboards. On the road we  
found the machine quiet, flexible, and  
powerful, while the manipulation of the  
change-speed is very simple. In all we  
consider the machine a very handy and  
serviceable mount, which should still  
further enhance the high reputation of  
the makers of Sunbeams.



The Sunbeam engine, showing timing gear.

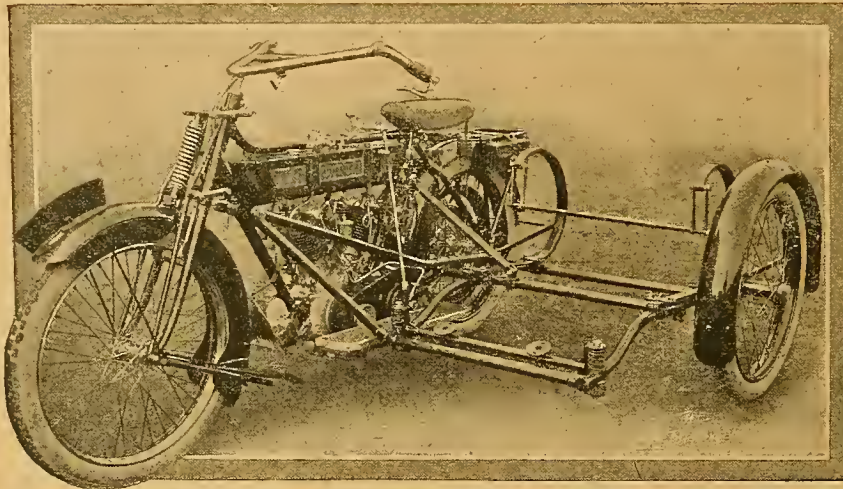


Removing air tube from back tyre through divided axle.

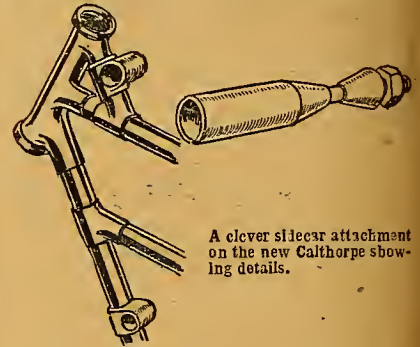


## 1913 CANOELET.

The popular Canoelet sidecar, made by Messrs. Mead and Deakin, of Ladypool Road, Birmingham, has undergone a few slight alterations for 1913. The frame now has a square front, and the attachments have been somewhat improved; notably the rear fixing which has an additional stiffening piece. The body itself follows the popular lines of its predecessor, but is now fitted with comfortable unholstered arm rests. While in the works we inspected a most interesting form of friction driven cyclecar, but this is entirely in the experimental stage, and we were asked to give no details of its construction at present.



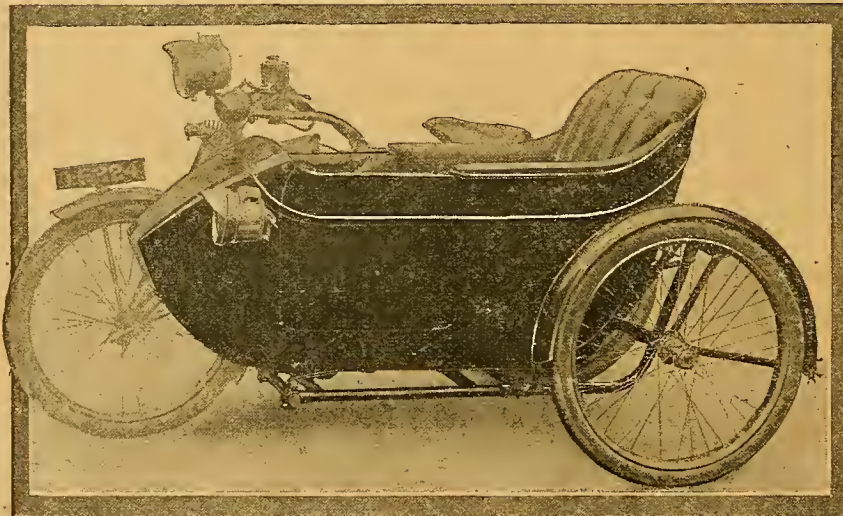
Efficient sidecar chassis; the framework is exceptionally strong and it is impossible for it to get out of alignment.



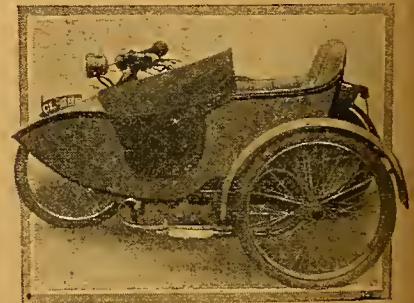
A clever sidecar attachment on the new Calthorpe showing details.

## THE FORWARD.

M. J. Varley, 57, Stoney Lane, Sparkbrook, Birmingham, has introduced several improvements in connection with the Forward sidecars. Four-point suspension has been adopted, the chassis is lower, and the front and rear springing are separate, the rear springs being carried on the main outer tubes. The four diagonal tubes between the sidecar and motor bicycle are straight, and steel forgings are used for all the attachments. Luggage carriers can be fitted to all models, and a spare petrol can holder is also supplied to order.



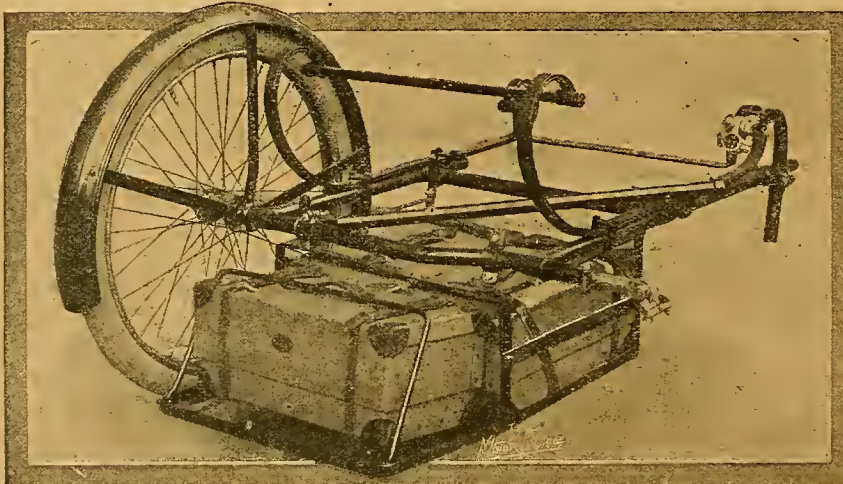
Latest design of Canoelet sidecar made by Mead and Deakin. The body is deeper and the back higher than formerly.



M. J. Varley's latest design "Forward" sidecar, which will be seen at Olympia.

## DUNHILL'S SIDECAR.

Many people who have sidecars require to carry a small child as well as the passenger, and this has been overcome in the sidecar body lately introduced by this firm. The seat has been neatly incorporated into the body, so that the child does not encroach upon the room occupied by the adult. The sidecar has received careful study at the hands of this firm.



A special sidecar attachment, by Alfred Dunhill, Ltd., showing luggage-carrying capacity.



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FOR GENTLEFOLK NO VIBRATION

NO OILY DIRT NO NOISE NO GYMNASTICS

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### LIGHTWEIGHT

machine for middle-aged men and for medical men especially is the  $2\frac{1}{2}$  h.p. (289 c.c.) with change-speed gear—It is clean, silent, and the control is simple—it is known as . . . . .

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# $3\frac{1}{2}$ H.P. (500 c.c.)

### MEDIUM WEIGHT

is fast, powerful, and clean for solo use, and it will pull a sidecar if desired, with one of which it will be shown at Olympia. . . . .

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SPECIFICATION—2-Speed Gear, Chain Drive, Footboards, Starting Handle, Front and Back Wheel Stands.

Our machines are constructed from the finest materials procurable, and you take no risks and make no experiments when you purchase either of the above Motor Cycles.

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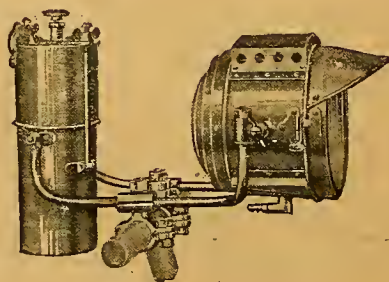
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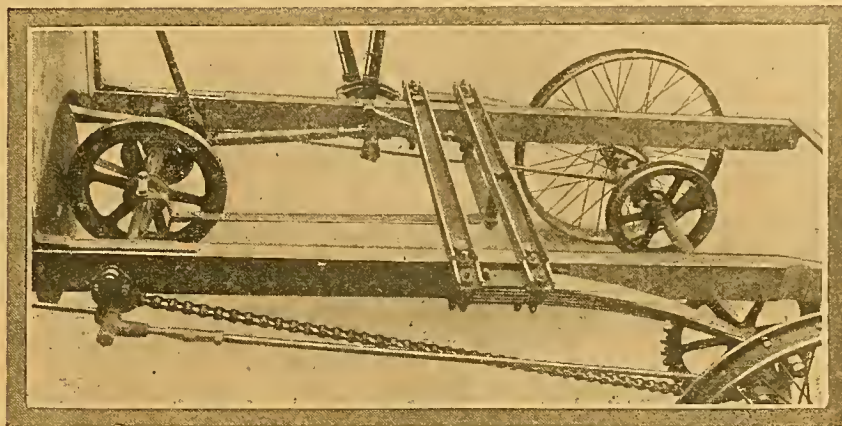
# OLYMPIA STAND 210



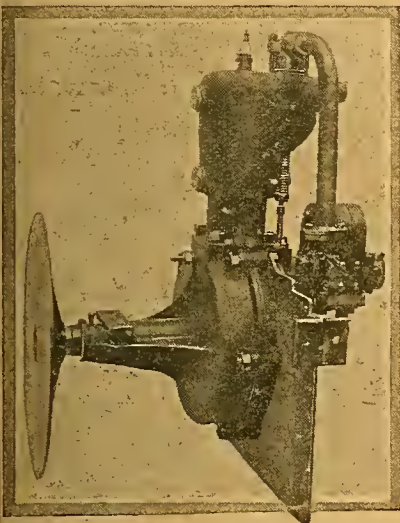
# SOME CONTINENTAL RUNABOUTS.

Light Four-wheelers which come within the Cyclecar Definition.

La Violette has performed very satisfactorily in French competitions this year. It is sold in England by Mr. Jacob, 13, Grape Street, New Oxford Street, W.C., and is fitted with a single-cylinder water-cooled engine  $80 \times 140$  mm. The magneto is a U.H., and the carburetter a Claudel. Internal flywheels are employed, and the compression is moderate. The inlet valve is automatically operated; the water-cooling is by thermo-syphon with very large water spaces. Lubrication is assured by means of a sight feed drip



Rear portion of La Violette chassis, showing springing, friction wheel bearing on disc, also long chain drive to axle.



Single-cylinder engine of La Violette, a friction-driven, French cyclecar. Oils are the long mainshaft bearing and friction disc.

lubricator. It will be noticed that the rear portion of the crankshaft is exceptionally long and provided with bearings to take up the thrust of the friction drive.

On the shaft is keyed a large diameter friction plate; the surface is polished, and the back of the plate is strengthened by ribs. The friction wheel is on a cross-shaft, and is made narrow and covered with a special wear-resisting material. To change gear the friction

wheel is moved inwards towards the centre of the disc to lower the ratio or outwards towards its periphery to provide a higher gear. The friction wheel is kept in close contact with the disc by means of a compression spring, and before changing the friction wheel is withdrawn from the plate by a pedal which takes the place of the usual clutch operation.

The power is taken from the friction wheel cross-shaft to the rear axle by means of a single chain running over jockey pulleys. The rear axle has no balance gear, but one wheel is keyed to the shaft and the other is connected to it by a friction disc, and it is claimed that one wheel can over-run the other when turning corners.

The main members of the frame are of wood strengthened with flitch plates on the outside and strutted by cross bearers of channel steel. Quarter elliptic springs are used fore and aft, and there is a cross spring in front. The brakes are internal-expanding on the rear wheels.

Among the latest refinements may be mentioned coil springs to the steering connections and brake connections, detachable wheels, and complete metal undershield.

Our representative had a trial run on one of these vehicles, when it carried three passengers, and performed satisfactorily. The humming noise from the friction gear was slightly more pronounced than some other friction-driven cars we have tried, otherwise there was nothing to complain of. A racing car of this make is said to have accomplished in a timed trial on the road a distance of twenty-four kilometres in 14m., and also to have climbed a gradient of 22%, which equals about 1 in  $4\frac{1}{2}$ .

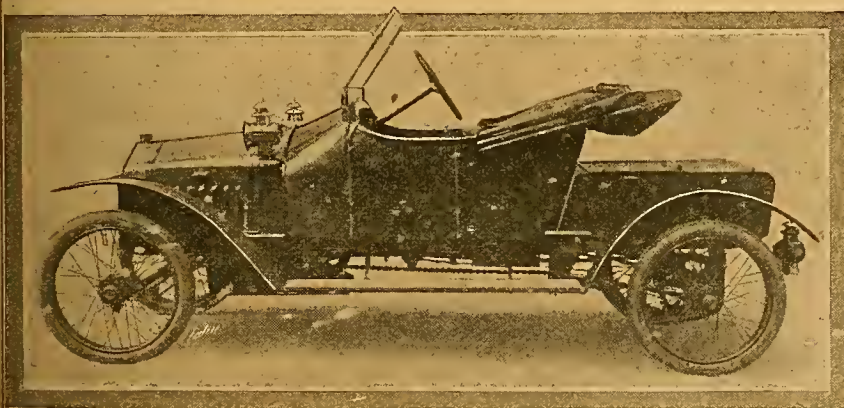
## The Metropolitaine.

Although rather close to the cyclecar and small car border line, this vehicle is worthy of attention. It has a four-cylinder *monobloc* engine  $60 \times 120$  mm., three speeds and reverse, balance-geared back axle, and pressed steel frame. The makers employ the U.H. magneto and Claudel carburetter. The wheelbase is 7ft. 10in., and the track 3ft. 11in. Wood or wire wheels are fitted. The crank case, gear box, and clutch form one unit, and the machine presents a very neat appearance. It is made by Cochez et Jeanne, Puteaux, near Paris.

## A Cyclecar with Rotating Valve Engine.

The voiturette C.L.C. is rather over the border line of a 6 cwt. chassis, but as it will be considerably reduced in weight for 1913, we think a description of the engine and one or two illustrations will interest our readers.

The C.L.C. is made by the company of that name at 165, Avenue d'Italie, Paris. The engine, which is called valveless, is a rotating valve engine made under Da Costa patents. The rotating valve consists of a sleeve outside the piston, which is rotated by gearing driven off the engine-shaft by a chain. The ordinary working piston reciprocates inside the rotating sleeve, the result being that, with suitable ports cut in the cylinder for inlet and exhaust, which register with other ports cut in the sleeve, the gas is induced and exhausted through the ports when the holes in the sleeve register with the holes in the cylinder.



The complete Violette friction-driven cyclecar. The weight of this vehicle, as illustrated, is under 7 cwt.

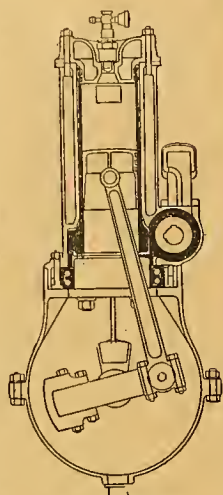


## Some Continental Runabouts.—

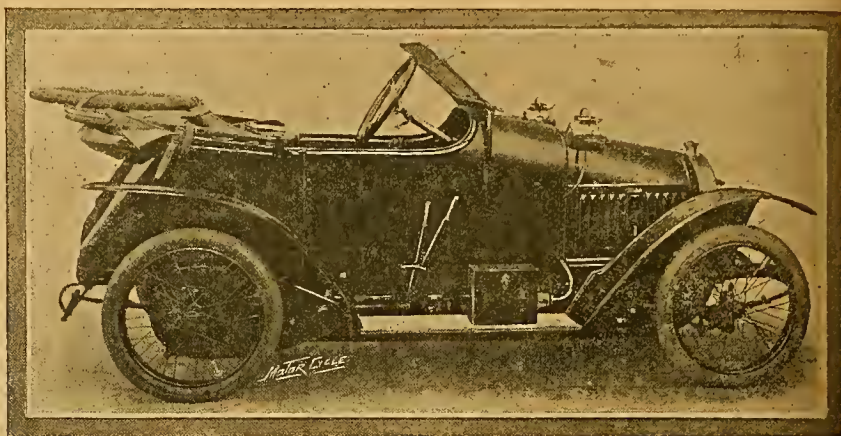
To enable the sleeve to revolve easily and to prevent any undue friction on the walls of the cylinder it is supported on a double ball bearing. That the engine

is not inefficient is proved by the trial made on August 9th last by the Automobile Club of France, when a C.L.C. standard engine, 80 x 140, running at 2,188 r.p.m., gave 11 brake horse power. This, the makers claim, is approximately 25% more than can be obtained from a similar engine with poppet valves. The rotating sleeve extends, of course, right up into the combustion head, and the compression is there retained by means of suitable rings. Lubrication is by a mechanical oiler in the scuttle dash, separate leads being taken to the base of the crank case and also to the mechanism by means of which the sleeve is rotated. On the present type of vehicle the gear box is in one with the crank case, but it is the makers' intention for next year to move the gear box to a position midway between the rear axle and the engine, as the construction at present is rather heavy. The weight of the chassis is 800 lbs., but the makers are contemplating a lighter model with air-cooled cylinder, as they are confident, owing to the cool running, that it would be quite successful as a motor cycle engine.

Incidentally, they are on the look out for an English firm who would like to take up the engine for motor cycle work and make it under royalty; they are prepared to carry out the necessary experiments required over and above those made for the water-cooled type and to build the first engine. Firms interested in this proposition should address enquiries to C.L.C., c/o the editor.



C.L.C. rotating sleeve valve engine.



The Globe voiturette. This neatly designed runabout has a flat belt and single chain transmission. The final chain drive runs in a metal case.

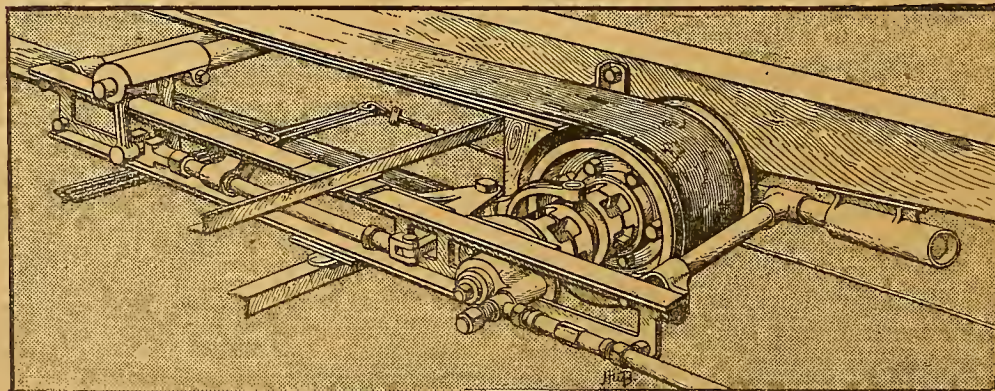
## The Globe.

The Globe, which is the name of a cyclecar sold in England by Globe Cars, Ltd., 37b, Duke Street, W., is an ingeniously designed four-wheeled voiturette, known in France, its country of origin, as the Sphinx. The latest type is illustrated herewith.

The vehicle differs from others in the design and construction of the transmission, which is distinctly ingenious. In front, under a bonnet, is placed a 9 h.p. single-cylinder Aster engine. This transmits its power to a counter-shaft by means of a flat leather chrome belt four inches wide. The counter-shaft has on it a pulley, and in the centre of this pulley is an epicyclic gear which runs solid on the top ratio and comes into action only when the low gear is required. The drive from the counter-shaft to the rear axle is by one chain, which runs in a chain case. The clever part about the device is that the counter-shaft is interconnected with the rear axle, and the axle, with its chain transmission and the counter-shaft, can all be moved slightly towards the engine-shaft, so slackening the belt and enabling a change of gear to be made. The axle and counter-shaft are then moved back to their original position and the belt can also be tightened by this device if necessary, although a protected

flat belt, when run in, seldom requires any shortening. The change of speed is effected by means of positive clutches, the teeth of the dogs being used to lock the central sun pinion of the epicyclic gear. The movement of the back axle is effected by means of a long lever, which is operated quite easily when the vehicle is in motion, and the belt gives a very supple form of transmission to the gear and the back axle; one rear wheel only is driven. The 9 h.p. Aster engine is of rather heavy construction, and we think if this vehicle were made with a lighter multi-cylinder engine or a single-cylinder engine specially designed for cyclecar work, with large outside flywheel, the vehicle would be still more enticing. The 9 h.p. Aster engine is made for a much heavier type of car than the one under discussion, and our reason for pointing out that a lighter multi-cylinder engine would improve the vehicle is because the weight of the engine used adds considerably to the weight of the vehicle.

The frame is made of ash bars, strengthened with steel fitch plates, and the rods connecting counter-shaft and rear axle serve the purpose of torque rods as well as connections between these two portions of the vehicle. The engine is started by a handle which fits on to a starting clutch behind the front wheel. The method of springing is unusual. The frame is made rather narrow, and the springs are fitted at each side in such a manner that the frame is able to go down below the springs when the latter are depressed. Although the writer did not have an opportunity of trying this vehicle on the road, he was informed by the makers that it steers and holds the road better than ordinary types, because the gyroscopic action of the flywheel is in the direction of travel. The engine is placed with its axle across the frame, so that all the transmission shafts are parallel, a feature which must lead to efficiency.



Sliding under-carriage of the Globe runabout. The wide flat belt from engine to countershaft will be clearly seen, also the dog clutches for operating the epicyclic gear in pulley.

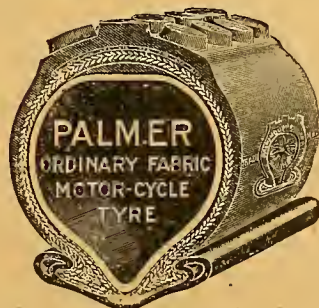


# PALMER

## MOTOR CYCLE TYRES.

Palmer Motor Cycle Tyres are now made in three types. The first with the patent "Airless" Cord, called the Cord Tyre, the second with four layers of Fabric, called the Palmer Heavy Fabric Tyre and the third with two layers of Fabric, known as the Palmer Ordinary Fabric Tyre.

The Palmer Fabric consists of parallel threads of extraordinary strength, each thread being thoroughly insulated with rubber, rendering the fabric practically impervious to moisture. The woven canvas used in most other tyres does not possess this feature to the same extent as the Palmer Fabric, with the result that it is more liable to rot if a gash or puncture occurs in wet weather and water enters the breach.



The Palmer Cord Tyre is extra strong, and constructed on similar lines to the well-known Cord Motor Tyre, which has gained so many successes on road and track.

Every Motor Cyclist should know that there is a vast difference between Palmer Cord Tyres and all other Motor Cycle tyres. Instead of three layers of canvas, the foundation of a Palmer Tyre consists of two layers only of cotton cord, impregnated and coated with the finest rubber. Canvas as the backing or foundation for a tyre has many defects. It rots, for one thing, and being a woven fabric of coarse manufacture, the cross threads cut one another.

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**STAND No. 136.**

**THE PALMER TYRE, LTD.,**  
119, 121, 123, SHAFTESBURY AVENUE, LONDON, W.C.  
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is being prepared for the exhibition of all the latest improvements in

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It would be impossible to attempt to give here, even a small description of the many good things we shall have ready to show you at the

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We have pleasure in making this preliminary announcement and extending

**A CORDIAL INVITATION**  
to all old customers and friends to meet us there.

We hope to see also those to whom the pleasures of Motor Cycling are as yet unknown.

Advice and information for beginners freely given at **DUNHILL'S.**

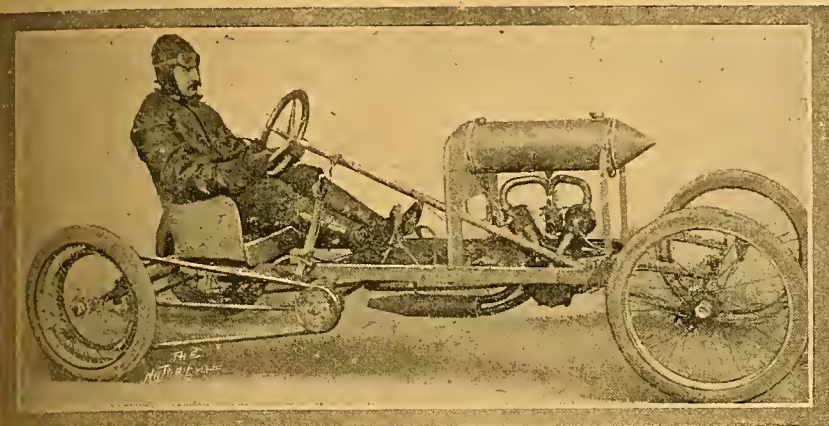
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Manchester: 88, Cross Street.      Glasgow: 72, St. Vincent Street.  
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Some Continental Runabouts.—



A new French cyclecar, the Meyer, which has an 8-10 h.p. Anzani engine, channel steel frame, Lanchester springs for and aft, chain and belt transmission with sliding back wheels and brake blocks acting on belt rims. It weighs 5 cwt., approximately, and is said to be capable of 50 m.p.h.

### A Single-cylinder Runabout with Large Outside Flywheel.

A little voiturette which will in all probability be seen in English competitions next year is the Parent, made by the firm of Parent et Cie., Paris. A call at their works recently elicited the information that they intend to make one thousand of these little vehicles, and have already put on hand one hundred, the parts for which were sawn in the factory. Illustrations of the machine appear on another page of this issue. The engine is a single-cylinder  $100 \times 140$  mm., and gives 6 h.p. at about 500 r.p.m. The cylinder is offset, and water-cooled by thermo-syphon system. It has a three-speed gear box, which is of the sliding type with three speeds and reverse, as in an extension of the engine crank case so that the engine and gear box with magneto are what the French style *en bloc*. The flywheel is carried in front of the engine just behind the bonnet, and is of very large diameter to assist the engine to pull the vehicle slowly in traffic on top gear. The carburettor is a Solex automatic and the magneto a Bosch. With the aid of the large flywheel and automatic carburettor the engine speed can be as low as 100 r.p.m., which is an extremely slow speed for a single-cylinder engine that will run up to nearly 3,000, and shows itself with an outside flywheel of large diameter, very great flexibility can be secured even with a single-cylinder engine. The compression of the engine is comparatively low, which is, of course, correct for a voiturette of this type. The whole of the power unit is suspended at three points, the gear box ending at the rear in a run-in, which allows the whole frame to turn on it when it is subjected to shock. The friction cone clutch is a single disc clamped between two friction plates. The gears are all made of chrome nickel steel, and all running parts revolve on double ball bearings. The propeller-shaft drives from the gear box on to a back axle with the usual type of car bevel gear, only, of course, made very much smaller and lighter. The shaft runs in a tube, which acts as a torque tube as well as a tunnel for the shaft to run in. The back axle has no balance gear in the ordinary sense, it is constructed as follows: One rear

hub is keyed to the axle, and the other wheel is driven through the intermediary of a conical friction clutch which connects the axle and the hub, contact being kept at a constant pressure by means of a spring washer. The wheels are interchangeable and detachable, and a spare wheel is carried. The frame, which is made of channel steel, carries on it the starting handle which is fitted in front, the radiator for the thermo-syphon circulation, clutch pedal, accelerator pedal, rear wheel brake pedals, charge-speed hand lever, and brake hand lever. The last two are fitted inside the body.

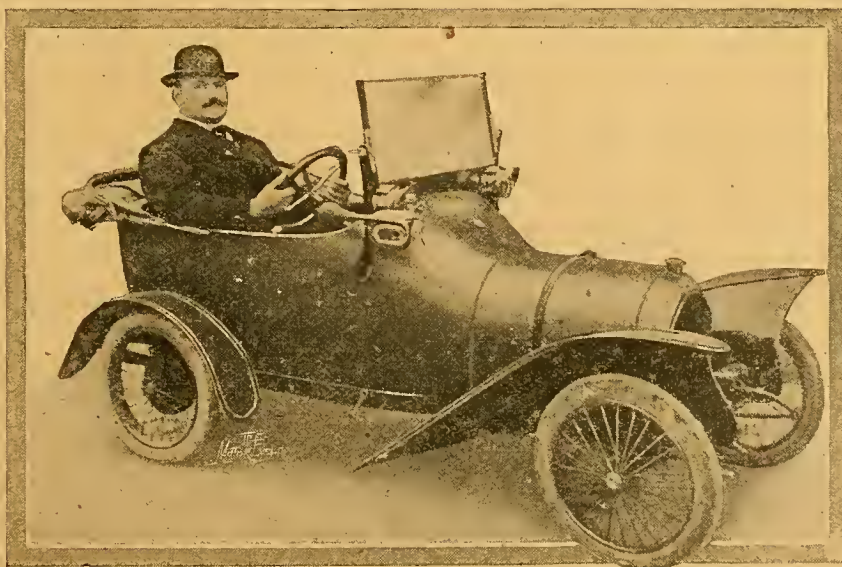
In connection with the brakes, it might be argued, owing to the friction cone clutch arrangement in place of balance gear, that the braking action would not be effective. We are assured, however, that it prevents side-skidding. The springing is by means of four semi-elliptical springs, and the two-seated body is of torpedo shape, the driver's seat being set a little in front of the passenger's.

This vehicle is sold at an extremely moderate price, taking into consideration that it has a hood, screen, spare wheel, and electric lamps. These latter are fitted in neat recesses in the dash. The steering is not by worm, wheel, and sector, but by levers; the front wheels are inclined so that a line drawn through the steering centres strikes the ground slightly in front of the vertical line drawn through the wheel, so that any shock to the wheels is not directly transmitted to the steering wheel. The steering is, moreover, claimed to be irreversible.

The lubrication of the engine is by gravity from an oil tank in the dash. The petrol tank is also carried in the dash with the batteries for the electric lamps. The wheelbase is 7ft. 6in., and the track 3ft. 9in. The chassis weight is 4 cwt., 3 qrs. 7 lbs., and the total weight of the vehicle is only 5 cwt., 3 qrs. 16 lbs. It will, therefore, be seen that this is a true cyclecar. The control of the engine is by means of an accelerator pedal. There is no advance lever for the magneto; the lubrication is automatic; and one rod, which pushes in and out like the handle of a pump and protrudes from the dash, cuts off the petrol, oil, and ignition at one movement. All that is necessary is to push it in to shut off everything, and to pull it out to turn on everything ready for starting. The firm making this vehicle are engineers with a very fine equipment, and have been making parts for the trade for a considerable time.

### Baby Peugeot.

The Baby-Peugeot is a vehicle we have already described and illustrated, and it is safe to say that when the firm of Peugeot Frères, London, are in a position to give delivery there will be a run on this model of a bigger vehicle. The chief items of the specification are: Pressed steel frame, four-cylinder water-cooled engine ( $55 \times 90$  mm. = 886 c.c.), two speeds and reverse, propeller-shaft and balance-geared rear axle, 22in.  $\times$  2½in. wheels and tyres, irreversible steering, Truffault suspension, and two-seated torpedo-shaped body. The price is to be £160.



Another view of the two-speed shaft driven Baby-Peugeot. This vehicle has 22" wheels.



# The Ronteix Four-cylinder Runabout.

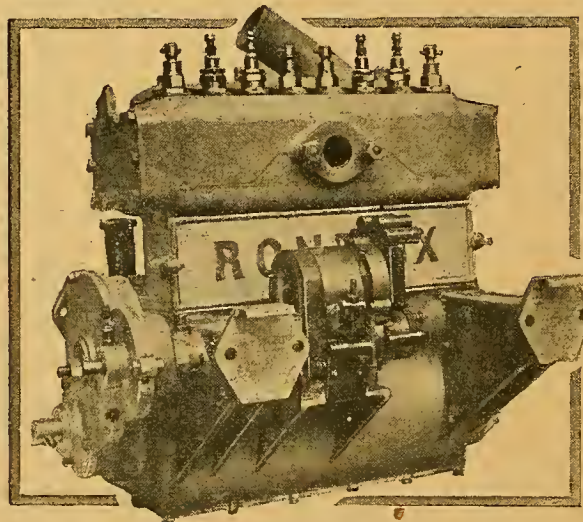
A French Cyclecar with Concentric Gear and minus a Differential.

**A**MONG the light runabouts which attract general attention, the Ronteix 6-8 h.p. four-cylinder has the merit of solving several mechanical problems in a particularly simple manner.

The vehicle is built for two or three people, and the engine being economical, the running expenses should be small. Both engine and chassis consist of a few strongly built parts that are easily interchangeable, the construction enabling the owner to effect repairs under the most inconvenient circumstances, as, for instance, where expert workmen are not to be found.

## Engine and Transmission.

The motor is a four-cylinder, cast *en bloc*, bore and stroke 60 x 80 mm., and rated at 6-8 h.p. The gear box is quite unique of its kind, as the transmission is obtained by a direct drive on all speeds, including the reverse. It acts in the following way: the transmission shaft



Neat design four-cylinder engine. Observe the valve casings.

carries a pinion which meshes at will with three concentric gears, and thus effects the change of speed as it is moved from one to the other.

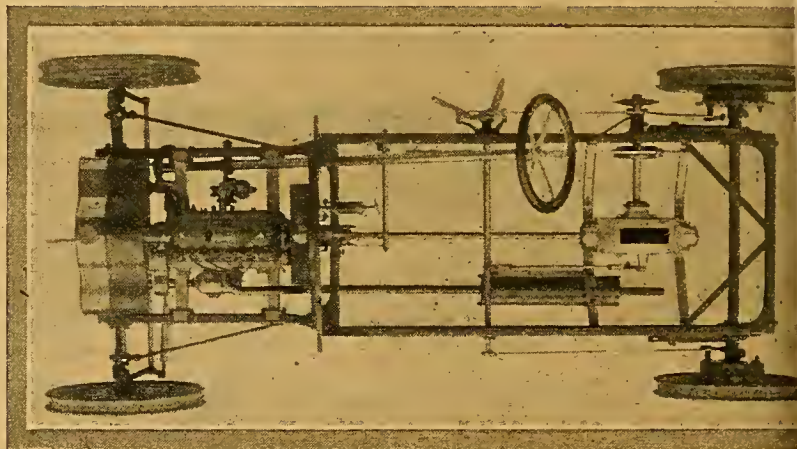
The transmission acts through a chain only to one of the hind wheels, and there is no differential.

Another innovation in automobile practice is found in the suspension, both in front and rear. This suspension, which our pictures explain sufficiently, is very flexible and strong; it is specially suited for colonial use.

The steering column operates through an eccentric and a rod.

## Chassis details.

The chassis is made of pressed steel and has a total length of nearly 10ft.; the wheelbase is 8ft. 4in., and the track nearly 3ft. 6in. A leather cone clutch, thermo-syphon cooling, lubrication by forced feed, ignition by Nilmelior magneto, and automatic Claudel carburetter are other features. The tank contains



Plan of chassis, from which it will be seen that the drive is on one wheel only.

about four gallons of petrol, which is sufficient for a 125 mile ride.

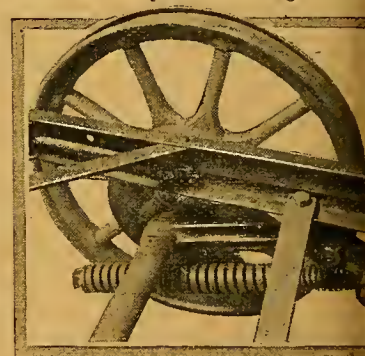
Two brakes acting on the rear wheels by extensible segments are operated by a hand lever; a pedal works also in the same way on the shaft of the gear box; this pedal also controls the clutch.

Either wire or wood wheels can be supplied at the option of the purchaser.

The acceleration is effected by a hand lever fixed under the steering wheel and controls the carburetter.

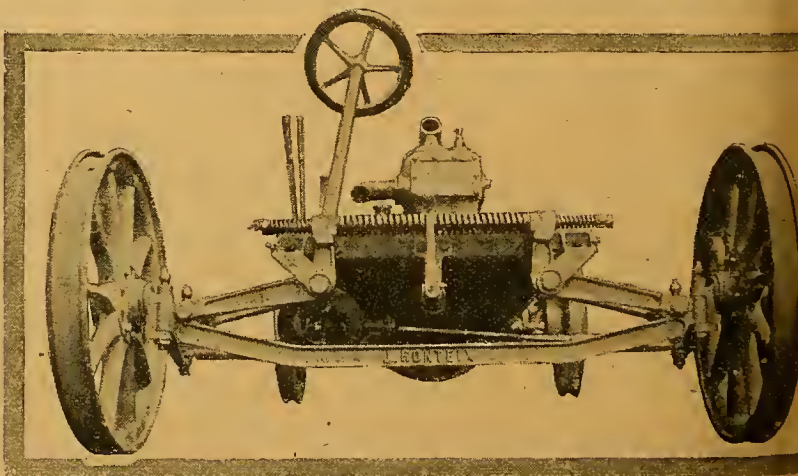
Weight: two seats, 9 cwt.; three seats, 10 cwt. The whole vehicle strikes us as being strongly built and

likely to be very serviceable. Although slightly over the R.A.C. definition, could obviously be made lighter.



Special form of rear springing on the Ronteix.

Next week's issue will contain "THE MOTOR CYCLE" BUYERS' GUIDE. An annual feature.



Front springing of the Ronteix. Any one wheel can lift without affecting the others.



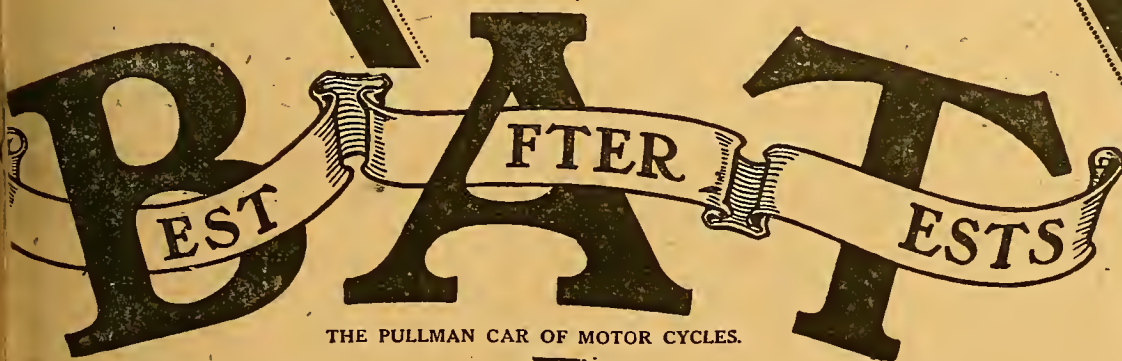
# We extend a cordial invitation

to all old and new friends of  
the "BAT" to make Stand  
No. 97 their rendezvous at  
OLYMPIA. While waiting  
you can pleasantly pass the  
time by inspecting the new  
models of this favourite motor  
cycle. That you will find  
plenty to interest we know from  
the many features exclusively  
embodied on these machines.

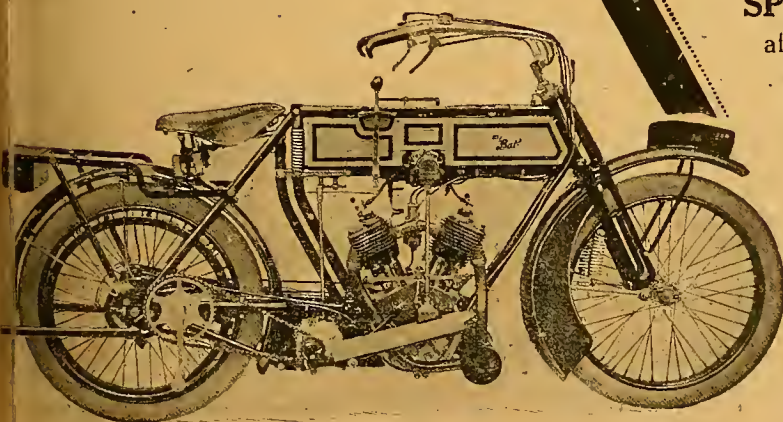
# MEET YOU AT 97

Book of the Bat  
sent free on request.

THE BAT MOTOR MFG. CO.,  
LONDON, S.E.



THE PULLMAN CAR OF MOTOR CYCLES.



Among other items are the—

**SPRING FRAME**, sprung fore *and*  
aft, making riding easy on the roughest  
roads,

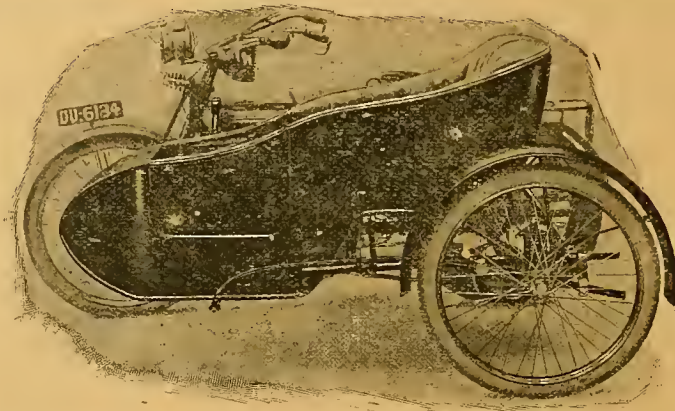
**MAGNETO POSITION**, out of  
the wet, and unaffected by rain storms,

**FOOT STARTER**, enabling  
the machine to be started with  
both wheels on the ground,  
and the

**TWO-SPEED GEAR**,  
permitting the slowest pace  
on treacherous surfaces

*In answering this advertisement it is desirable to mention "The Motor Cycle."*





# GLORIA

## Sidecars.

### Dangerous Sidecar Attachments.

*A Correspondent in  
"Motor Cycling" writes:*

"I am looking round for a safe and properly constructed sidecar, but as far as I can see the only correct fittings on the market appear to be the Gloria double tube attachments, which embrace the top tube and backbone of the machine at the front and the seat stay and bottom stay at the rear."

The Gloria has a positively safe attachment, no other Sidecar like it, and it is most readily attached and detached.

Then again, the wheel is spring suspended, which allows it to rise and fall and so correct the irregularities of the road surface. However uneven the surface the passenger rides in perfect comfort.

There are several Models to choose from, each one beautifully appointed, and they will be on view on

**Stand 76,  
Olympia.**

*Be sure and see them before ordering your Passenger Outfit.*

**Gloria Cycle Co., Ltd., ————— Coventry.**



# QUESTIONS and REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Magneto Cut-out.

Some little time ago I fitted a magneto cut-out to my 2½ h.p. machine, and have used it for the purpose of retarding the engine, in preference to raising the exhaust valve. Am I correct in this, or has such use any ill-effect on the compression of the engine?—C.H.

There is no harm in using a magneto cut-out in preference to the exhaust valve, though it would cause the machine to stop and start more jerkily, owing to sudden acceleration when current is washed on.

## Overloading.

I have a 3½ h.p. two-speed machine and sidecar. After running about five miles the engine seems to tire and knock when on the high gear. How should the spark lever be advanced or retarded for ordinary riding on the level and on hills?—A.H.P.

The trouble seems to be overloading, which, of course, is due to the machine being too heavy on the high gear. The spark lever should be fully advanced, or nearly fully advanced, on the level, and if the engine shows signs of labouring on hills it should be slightly retarded. Perhaps after the engine has been running a little while it will improve.

## Licence and Registration.

A short time back I had a trial run on a motor cycle with a view to purchase, but, owing mainly to a defect in carburetter I had a collision with a car. This happened under the eye of a police constable. I was requested to produce my licence, which, although I had written for it, did not arrive until the next day. I then received a summons for failure to produce same, and also for riding an unregistered cycle, as the registration had been cancelled by the owner just previously. I was perfectly ignorant of the cancellation of the number.—HAN.

We should say that if you can prove that you had actually written for a licence, or had paid the fee, this part of the case would be dismissed. Also, you might plead ignorance that the registration of the machine had been cancelled. You might also point out that you were having a trial run, and it is quite possible that the bench may take a lenient view of your case.

## Old Number for a New Machine.

Last week I sold my motor cycle, which was registered at Sunderland, on the condition that I retained my registration number (BR 109) for my new machine.

I notified the Sunderland authorities of the sale and also that I wished to keep the old number for the new machine. I have received a letter from the chief constable of Sunderland to the effect that my action is irregular. Have I any ground to take exception to his demand for a further fee of 5s.? I am not keeping two motor cycles, but only one for which I have already paid the registration fee required.—PERPLEXED.

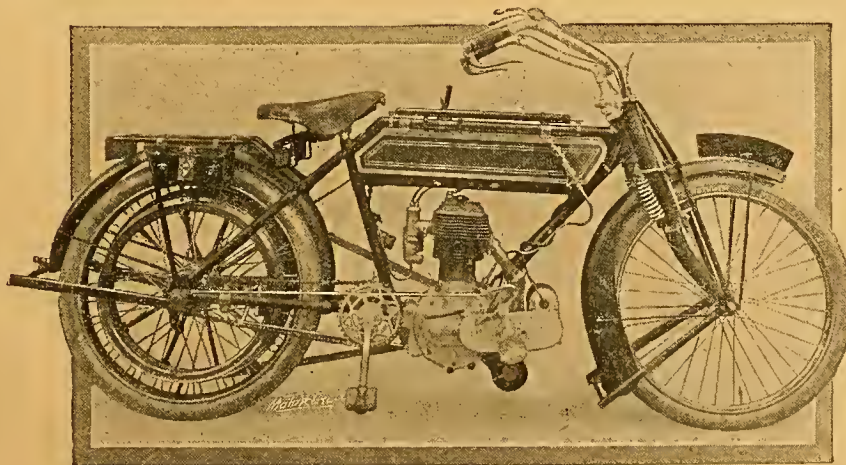
The chief constable is quite in order. In making your application for retaining the old number you should have asked him to cancel the registration of the former machine, and for permission to use the old number. There is no alternative to your paying the full registration fees again; this is the usual procedure. It is the machine, not yourself, which is registered, and the registration can be transferred to another owner for a fee of 1s., but it cannot be transferred to another machine, although, as a rule, the same numbers can be used. In the case of the Inland Revenue licence of £1, it is the owner who is licensed to keep one motor cycle, and so long as he keeps only one

at a time, it does not matter how often he changes his mount, but each new one must be registered at a charge of 5s.

## Air Lock in the Tank.

I have noticed on motor cycles, with or without automatic carburetter, the following fact: While riding under heavy rain the carburetter from time to time stops feeding the engine with mixture, this being a consequence of the float chamber being without the necessary petrol flow from tank. As soon as I open the petrol filler cap on tank the wanted petrol flow is re-established and engine fires again. I cannot understand why this only happens while raining heavily. What influence can the damp atmosphere have on the air pressure in the tank, and how is a remedy possible without opening the petrol filler cap on tank?—C.A.S.

Evidently what you are suffering from is an air lock in the tank. Wet, mud, or dust gets round the edges of the filler cap at the top and into the vent hole and hermetically seals it up so that the air cannot get into the tank. The remedy is to have an additional hole in the filler cap, so as to ensure an ample access of air to the interior of the tank, otherwise the atmospheric pressure in the pipe will prevent the petrol from flowing freely. Some firms fit a hub lubricator in the vent hole.



3½ h.p. three-speed single-cylinder Torpedo to be exhibited at Olympia. The Torpedo machines are made at Barton-on-Humber, by F. Hopper and Co.



## Adjustment of Contact Breaker.

Q

I have bought a second-hand Quadrant and I think the timing of it is wrong. The contact breaker, I think, is what is called make and break. Can you tell me how to adjust it?—J.W.B.

You should adjust the platinum screw, roughly, so that engine just fires; then set engine running with the machine jacked up; unscrew the platinum screw until the engine begins to misfire, then revolve it half a turn in the opposite direction and lock it. You will find hints on tuning engines in the latest edition of "Motor Cycles and How to Manage Them," which can be obtained from these offices.

## Liabilities of County Councils.

Q

I am writing you regarding an experience that befell my wife and myself lately. My wife being an invalid, I took advantage of the very fine afternoon to motor to South Cave. From there we decided to return *via* Ripplingham and Kirk Ella. All went well until coming down the hill from Ripplingham, when we suddenly ran on to a patch of stones thrown loosely all over the road, and I may add that before we pulled up we had run over several more patches, having no alternative, as they practically stretched the full width of the road. The result was that, though we managed to keep our seats, I had to repair a burst in my new tyre. This was not all, for after being delayed a considerable time (in the dark), I had then to push the combination fully half a mile, passenger included, to say nothing of having to walk in places on the loose granite. My reason for writing is to get to know if the East Riding Council (Beverley) are justified in leaving the main road in what I call a dangerous condition, for that is what it amounts to.—A.A.T.

Our legal adviser writes as follows: "I think it is possible that 'A.A.T.' would succeed in any action brought, but the circumstances of the case would have to be very carefully gone into, and he should consult a solicitor. The local authority is not liable for any damage caused by the non-repair of a road, but if damage is caused through the negligent way in which the repairs are carried out then the authority would be, unless there was contributory negligence on the part of the one injured. The fact that it is a common thing for local authorities to repair country roads by covering the surface with rough stones and leaving the same for some time might weigh with a judge or jury as to whether that was to be considered a negligence. On the other hand, it might be held that whether it was negligence or not, if the motor cyclist had a good light on, he ought not, in the dark, to have been going at such a speed as to be unable to get off when he saw that the state of the road would be likely to injure his tyres. A very interesting case was decided in 1909, where damages were claimed for the loss of a horse attached to a waggon. In a lane through which the waggon had to go the defendants were repairing the road, and for 130 feet five inches of granite stones had been laid down over the whole roadway. On part of it a steam roller had been at work, but part

of it had not been rolled at all. The driver was unable to get his horses along the part that was unrolled, and one of them fell down and died from a ruptured vessel. The waggon could not be turned round in the lane, and there was no warning notice at the commencement of the lane. It was alleged that the road had not been closed, that it should have been made up by halves, that the road should have been scarified, and that no warning notice had been put up. The jury held that there was negligence on the part of the council in the way they carried out the repairs, and that the driver could not, by taking reasonable care, have avoided the consequence of such negligence, and also that the death of the horse was the natural consequence of such negligence. This judgment was supported in the Court of Appeal, although one of the judges said that there was no evidence that the death of the horse was the natural consequence of the negligence. In another interesting case, decided only this year, a county council were engaged in repairing a road, and had employed a steam roller to roll down and level in new metal. The operations were confined to half the width of the road. A man driving in a donkey cart was going along the half left open, and was jerked from his seat by the wheel colliding with a large stone lying close to the grass margin. He was thrown under the wheels of the steam roller and received injuries from which he died. It was found that the stone had been there two or three days, and it was held that in repairing a road the county council must take care that the portion left open for public use should be reasonably fit and safe for user."

## How to Obtain Driving Licence.

Q

I should be obliged if you would inform me whether it is necessary to possess a motor cycle before getting a driving licence, as I anticipate having several opportunities of riding a friend's machine, not possessing one myself. Also please state the necessary procedure for obtaining same.—A.G.M.

Anyone over 14 years of age can obtain a driving licence; the ownership of a machine is not necessary. All you have to do is to apply to the offices of the nearest police authorities, whoever they are (any policeman will tell you), then fill up a form, and pay 5s.

## Registration of Tricar.

Q

I am in the possession of second-hand tricar, 4½ h.p. water cooled, coach built, one seat behind and basket seat in front. Weight is exactly 4 cwt. The local taxation authorities demand a registration fee of £1. Is this charge correct, should it be 5s., the same as motor cycle and sidecar? I feel sure there are some of the latter outfits heavy as the tricar I have, and registration fee of 5s. is asked for them. Are they not both tricars or tricycles as far as the Act goes?—J.M.R.

Yes, we are afraid you will have to pay a £1 registration fee, as the weight is over 3 cwt. The local taxation licence will be £1, as the machine is a tricycle.

## EXPERIENCES WANTED.

"E.B.L." (St. Helens).—1911 P. and with Senspray or Binks carburettor.

"T.D.Y." (York).—3½ h.p. Zenith Speed, power, tyres, belts, and flexible.

"L.P." (Roxburgh).—B. and B. Senspray (variable jet model) carburettor on 3½ h.p. Brampton variable gear.

"H.S." (Nottingham).—P. and M. water and without sidecar.

"O.G.P." (London).—Mabon variable gear with Triumph and sidecar.

"T.B.R." (Cleethorpes).—Clyno and sidecar. Reliability.

"E.W.F." (Slough).—Brampton gear.

"B.P." (Hampstead).—3½ h.p. Sco last quality.

"W.S." (Huddersfield).—8 h.p. water cooled Williamson. Reliability, hill-climbing, and petrol consumption.

"J.G.L." (Childs Hill).—6 or 8 h.p. Zenith, Matchless, or No. 7 Chater-I with sidecar, particularly as regards wear of tyres, belts, and chains.

"F.N." (Barnard Castle).—Best type for wear on 8 h.p. Chater-Lea sidecar 650×65 wheels; mileage.

"W.J.W." (Cardiff).—Four-cylinder F.N. and four-cylinder T.M.C. Special reliability, and consumption. Also two stroke Scott.

"Harrigan" (Cork).—5 h.p. A.J.S. hill climbing with sidecar, transmission and clutch.

"T.V.B." (Gateshead).—2½ F.N.; consumption, upkeep, wear of rear tyre, and reliability of bevel drive.



As evidence of the growing popularity of the Arden cyclecar, we reproduce the above, showing five complete vehicles awaiting delivery. The Arden has already been described in "The Motor Cycle."



# THE MOTOR CYCLE

ESTABLISHED IN 1903

AND FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

FIVE HUNDRED AND FOURTH CONSECUTIVE ISSUE.

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SOUTH AFRICA.—Central News Agency, Ltd.

PARIS.—Smith's English Library, 243, Rue Rayoll.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

## Show Features.

**N**EXT week's Cycle and Motor Cycle Show at Olympia will be more a motor cycle and less a pedal cycle show than ever. Practically every stand in the exhibition will have on it either motor bicycles, passenger motor cycles, or accessories appertaining to the motor cycle. During the past few weeks we have dealt with nearly every new make of motor cycle, practically all of which will be on view at Olympia, and this week, in addition to further new models, we repeat *The Motor Cycle* Buyers' Guide, which includes specifications and prices of all machines on the British market.

Reviewing the principal features of 1913 machines. Side by side valves are most popular in both singles and twins, and the overhead inlet valve, successful as it has been, is not gaining ground, *i.e.*, there is no sign of a rush on the part of reputable firms of long standing to change from the former to the latter design. Bore and stroke ratios are practically unaltered; the motor cycle engine in this respect differs greatly from car practice. In car engines it is common for the ratios of stroke to bore to be nearly two to one, whereas in motor cycle construction the stroke rarely exceeds the bore by more than five millimetres in single-cylinder engines of 500 c.c.; this is doubtless almost wholly due to lack of head room. In some twin-cylinder engines of small bore the ratio is 1.4 to 1, this being brought about by the division of the bore into two cylinders of small bore instead of one of larger dimensions, without decreasing the overall length of the engine. An article in the current issue of *The Autocar*, written by a practical designer of a most successful engine, shows that, even for the comparatively slower running motor car engine, a ratio of 1.3 to 1 produces an engine which is quicker in acceleration, more durable, and smoother in action than those which exceed the proportion named. It appears, therefore, that motor cycle engineers are on the correct lines. The two-stroke engine has not, despite its great success in this year's T.T. Race, been adopted by many manufacturers: two or three new models with two-stroke engines will be shown, but there is no sign of this principle becoming in any way general. This we regret because the two-stroke simplifies design to such an extent that it is possible to make a two-stroke engine with only three moving parts—crank, piston, and connecting rod.

There is a slight tendency, perhaps, to revert to detachable heads, which simplifies valve grinding and the removal of carbon deposits, but this again is not general, for by far the greater number have one-piece cylinders. Partly enclosing the valves and tappets is a noticeable tendency in the right direction; it makes for a cleaner and slightly quieter valve action, and if carried further the guides, etc., might work in oil, which would tend to reduce wear and absolutely exclude grit. Lubrication methods are receiving far more attention than previously, and many more engines will be exhibited this year with various forms of drip feed either entirely automatic or depending partly on the rider for replenishment of the pump barrel; forced lubrication has been adopted by several firms this year, whereas last year there were only two examples in the Show. The introduction of a special force feed apparatus for motor cycles by a leading firm may revolutionise motor cycle engine lubrication.

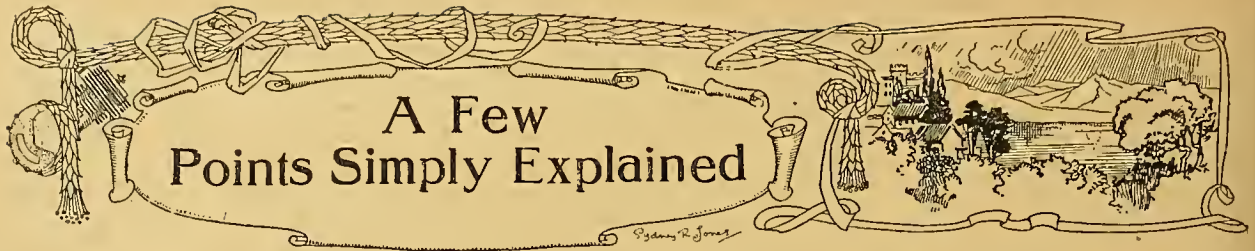
Nearly all motor cycle engines remain air-cooled, but examples of water cooling will be shown. The control of engines is little altered, the twin handle-bar control for the carburetter is almost universal, and few machines will be offered without a handle-bar-controlled magneto. The fittings for these in many notable instances are permanently attached, and where they are not the clips have been dispensed with and neater methods adopted.

Silencers will be inspected with more than usual interest this year in view of threatened legislation. The question of a quieter exhaust has been settled in most cases by the fitting of an expansion chamber and a rearward extending pipe which certainly reduces noise, particularly to the rider. The transmission question still remains a vexed one. All types have their advantages; direct drive by belt is still the most popular, followed by the all chain system. The compound type either by chain and belt or gear and belt is third in popularity from a manufacturing standpoint, and shaft drive comes last.

Frames are little changed, and we are surprised that more attention has not been given to springing; there are one or two notable efforts to improve in this direction, but the majority still adhere to a rigid rear frame. In regard to sidecars the passenger's convenience has been further studied, and it is now easier to obtain a sidecar giving all the comfort obtainable on a touring motor car than ever before.

Cyclecars were fully dealt with in our last issue.





**W**HEN I first became the possessor of a motor cycle, and had been initiated into the simpler problems connected with it, such as how to make an ancient crock whose maximum effective horsepower was .25 or thereabouts surmount a humpbacked canal bridge, I became desirous of penetrating further into the mysteries of the petrol engine. For instance, I used to ask why does an engine take more air when travelling fast than when travelling slow? The answer I usually received from my motor cycling friends was, "Oh, because when she's going fast she can fire a weaker mixture," and when I again asked "why," I was regarded as a duffer or an utter lunatic not to understand so simple a statement. Perhaps some of my brother motor cyclists have not yet discovered the reason, so I will attempt to explain. In a properly adjusted carburetter there is no flow of petrol through the jet when the machine is standing, but as soon as the piston begins to move there is a flow of air through the carburetter, due to the partial vacuum in the cylinder on the suction stroke. This vacuum causes not only air to flow but also petrol from the jet, and in this way the explosive mixture is formed. The vacuum in the carburetter increases with increase of piston velocity, and hence the flow of petrol also increases, there being a definite rate of petrol flow for each piston velocity. But the petrol flow is not related to the piston velocity by a "straight line formula," as the mathematicians would say. That is to

say, if the piston velocity be doubled the petrol flow is not doubled, but is increased in a still greater ratio, making the mixture too rich. Hence the experienced rider, as the speed increases, opens his extra air valve, which has the effect of reducing the air velocity, and hence the vacuum decreases and the petrol flow returns to its normal value.

#### Combustion Chamber Design.

Another point about which there is a good deal of misconception among motor cyclists is combustion chamber design. We are continually hearing the praises of the spherical chamber sung by the makers of this or the other machine, and every motor cyclist, even if he is only of the "potterer" type, knows that the combustion chamber which approaches the sphere most nearly in shape is the most efficient. Now, I am afraid that some bold bad advertiser, for reasons of his own, first created the idea that efficiency is what is wanted in a motor cycle engine. I think every practical motor cyclist will agree with me when I say that the average man, whether he favours the 90 lb. lightweight or the mighty 7-8 h.p. twin, would rather run ten miles less to the gallon and be able to tackle every hill he meets without fear of having to indulge in a furious spell of l.p.a. before he reaches the summit. What the motor cyclist wants is a large reserve of power, provided the machine is reasonable in other respects, such as weight, life of tyres and



A SUMMER TOUR MEMORY. Sunset on the Thames at Pangbourne.



**A Few Points Simply Explained.—**

belt, and so on. Now, a spherical combustion chamber may be economical as regards petrol, but I will endeavour to prove that it is not suited to hill-climbing.

Suppose we have two cylinders with equal piston displacements and compression ratios, but let one have a combustion chamber of spherical form and the other a very flat chamber, as is necessary when the valves are placed on opposite sides of the cylinder. Let us call the engine with the spherical chamber A and the other B. Now the combustion chamber of A has a certain volume and a certain superficial area, while B has an equal volume but a much greater area, and will, in consequence, be able to dissipate heat much faster than A. Let both machines tackle a long steep hill. In my opinion, at first A and B will pull fairly equally, A being more economical of petrol. Soon, however, owing to the smaller cooling surface, A will begin to get hot, and consequently the power will fall off owing to a smaller weight of gas being admitted on each suction stroke. To counteract this the rider will open the throttle and close the extra air, admitting a richer mixture, which, for a time, will increase the power, but will also tend to raise the temperature of the cylinder higher and higher until the increased friction and diminished charge weight pull the engine up. B, on the other hand, owing to the large surface available for cooling, will not over-heat so soon, though at each stroke a greater percentage of useful heat is lost when running at a low power; when overloaded this very loss of heat enables the engine to run cool much longer. Of course, by making a bigger engine with a spherical combustion chamber the hill could be climbed satisfactorily, but then, look at the disadvantages of a big engine—more weight, which of itself means increased petrol consumption and increased tyre bill, to say nothing of minor disadvantages such as increased difficulty of handling and starting.

**Scavenging.**

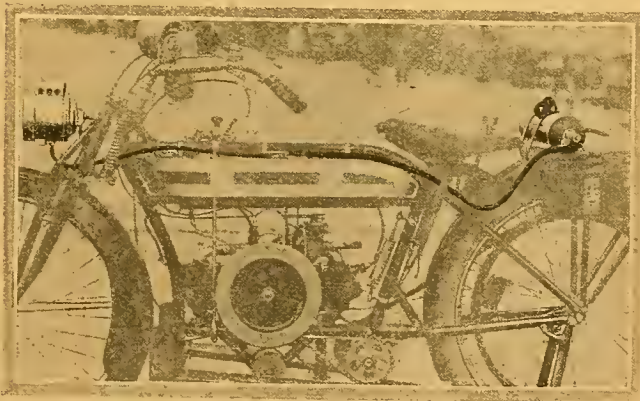
Some time ago we heard a good deal about scavenging the combustion chamber, and there were dozens of letters in the motor press, some of them by people who knew what they were talking about, and a great many by people who did not; and we have had suggestions made which their originators as a penance should be made to experiment with. The one thing that everybody seemed agreed on was that scavenging would increase the power of the cylinder, the idea being that a bigger weight of charge could be taken in on each suction stroke. Now, personally, I have grave doubts about this increase of power. The first objection that strikes one is the cooling problem. Unfortunately, our pistons and cylinders are mostly made of cast-iron, which expands when heated, and our lubricants are oils of various sorts (when they are not concoctions of soap), and hence we are limited as regards temperature. This means that we have to get rid of a certain amount of heat somehow; and, as it is, the cooling powers of motor bicycle cylinders are often pushed to their limits. Now, if we take in a bigger charge into these same cylinders, obviously a proportionately greater amount of heat has to be got rid of, so that there is a greater chance of overheating trouble, or at least the temperature of the cylinder will rise until the power falls to its original limits.

Then, again, there is another objection. To completely burn 1 lb. of petrol, approximately  $3\frac{1}{2}$  lbs. of air are required. This is a matter that can be determined with great accuracy in the laboratory. Now, the most efficient mixture for an engine has been determined experimentally to be about one part of petrol by weight to seven or eight of air, or about double the quantity of air required to consume the petrol; and a similar condition of affairs is found in gas engines, any increase in the proportion of gas resulting certainly in a slight temporary increase of power, but a very large increase in the amount of heat carried away by the cylinder walls. Now, this large amount of extra air must be only necessary as a diluent, and the inert exhaust gas remaining in the combustion space probably serves the same purpose. Obviously, therefore, if these exhaust gases are expelled, air, and not mixture, must be drawn in to take their place, leaving matters *in statu quo*. "Yes," says the enthusiast for scavenging, "but the hot exhaust gases will be replaced by cool air, which will tend to make the engine run cooler, and therefore give more power." Well, I am afraid the increase of power would be very small, and I have not yet seen a scavenging arrangement suitable for motor cycles that would not absorb it all.

MAGNETO.

**DISSOLVED ACETYLENE FOR MOTOR BICYCLES.**

THE accompanying photograph is the first to be published, showing how a D.A. cylinder may be carried on a motor bicycle. The method of fixing may be somewhat crude, but it is satisfactory enough until the Acetylene Illuminating Co., South Lambeth Road, S.E., devise some better method of



The dissolved acetylene outfit attached to a 2½ h.p. Douglas machine.

carrying it. Clearly seen in the illustration is a needle valve adjacent to the union, which is turned by a key supplied with the outfit, and resting on the saddle is the gauge designed to be screwed on to the union which allows the contents of the cylinder to be measured. The cylinder is filled with acetone, that is cupric chloride, a spongy substance which dissolves the acetylene in such a manner that it cannot possibly be ignited unless mixed with oxygen. The gas is perfectly free from impurities, and burns with a beautifully clear light. The capacity of the cylinder is six cubic feet, being sufficient gas to give light for about twenty-four hours.



## OCCASIONAL COMMENTS



BY  
"IXION"

### Compound Drive.

The more I see of advanced 1913 models the more interested I become in the possibilities of the compound drive by chain and belt. I do not base my interest on the chain driver's criticisms of the primary chain drive; the fore chain certainly gives more trouble than the rear chain on a complete chain drive, but it stands up wonderfully well on a combined chain-belt drive, in spite of the fact that a very light front chain is often employed. Possibly the excessive wear of the front item in an all-chain drive is par-

which has covered 7,500 miles during the summer; its cylinder was removed for the first time after 5,000 miles, and the amount of deposit was by no means excessive.

After 7,000 miles its light piston collapsed, and so the engine was compulsorily dismantled once more, but there was not sufficient deposit to have justified the labour of a clean-up.

I am well aware riders vary greatly—some are methodical, and others are casual in respect of lubrication. Riders who seldom scrap along on full throttle, and who are sufficiently methodical to keep a constant eye on their speedometers can probably drive an engine 2,000 miles with mere hand pump oiling before decarbonisation becomes essential. But such riders form a small minority, and in my opinion it is the duty of the trade to supply lubrication systems which will prevent a forgetful and speed-loving duffer from silting up his engine with charred filth every thousand miles.

I regard the drip-feed as a mere temporary makeshift, pending the adoption of some truly mechanical device, though the drip is a real advance on the hand pump. Nor am I greatly in love with such mechanical oilers as I have yet tested. My experiences with one device were not too encouraging, owing to shoddy workmanship. When the mechanical oiler was working, it spattered one entire side of the engine with oil, owing to faulty joint facings and packings, and it very frequently went on strike altogether.

Car manufacturers have solved this problem in a variety of quite satisfactory designs, and it is high time that motor cycle designers make a real advance. Many of the complaints one hears about short-lived bearings are due to a momentary forgetfulness on the owner's part working in conjunction with a primitive lubrication system. Ten to twelve years ago motor cycle engines were fitted with the same oiling system which on most machines remains standard to-day.



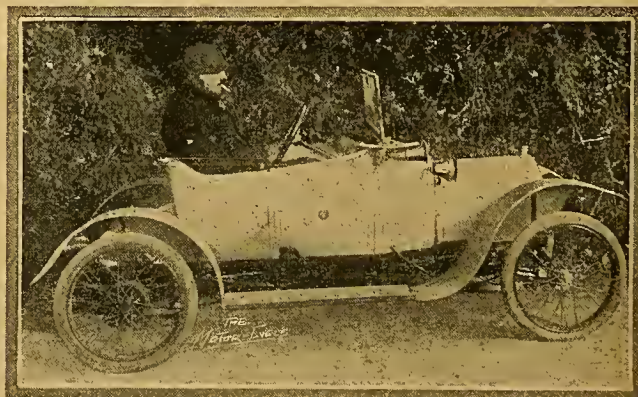
Tubular framework of the Gordon light car.

tially ascribable to inefficient slipping devices or to placing them in the wrong position, and to the fact that there is a certain amount of rigidity both ways, *i.e.*, when the rear wheel is driving the engine, as well as when the engine is driving the wheel (notice, for example, the strains in a futile effort to start, with a sudden pull-up against compression). With a combined belt and chain drive the snatch of the road wheel turning the engine is doubly eased—once by the belt and again by the slipping device. I base my interest in the compound drive on its superior gracefulness of aspect. A fully-encased chain drive creates an inelegant excrescence on a machine, no matter how neatly it is made, and this would be altogether avoided by using an encased shaft as the primary item of a combined drive, while the wear could be largely eliminated by the use of some of the recently invented high grade steels, and adjustable bearings would not be difficult to arrange.

The shaft drive could effect a greater gear reduction than is convenient with chains and sprockets, and as a consequence the diameter of the belt pulleys could be made more equal. I fancy this drive has greater possibilities than are yet realised, and I should not be surprised if it suddenly attained a great vogue. Unfortunately few people have any practical experience of it, but I commend it to the experimentalists, both for motor bicycles and cyclecars.

### Drip Oiling and Carbon Deposits.

It will be interesting to notice at Olympia how many machines of first-class make remain loyal to the hand pump oiler with its alternating periods of over-oiling, correct oiling, and under-oiling. I know a 1912  $3\frac{1}{2}$  h.p. single-cylinder machine fitted with a drip-oiler, cro



An example of the P.D.A. cyclecar, with Mr. H. C. Pickering at the wheel.



## FORECAST AND GUIDE TO OLYMPIA

### CHATER-LEA.

Chater-Lea, Ltd. (Stand 78).—In addition to the Chater-Lea cyclecar and No. 7 sidecar, particulars of which have already been published, the following will be exhibited by Messrs. Chater-Lea, Ltd. One item is an entirely new sidecar chassis called the Model B, specially constructed for low-built flat-bottomed canoe-shaped bodies. This has a dropped axle tube, and the supporting tube and springs are all specially designed. A quantity

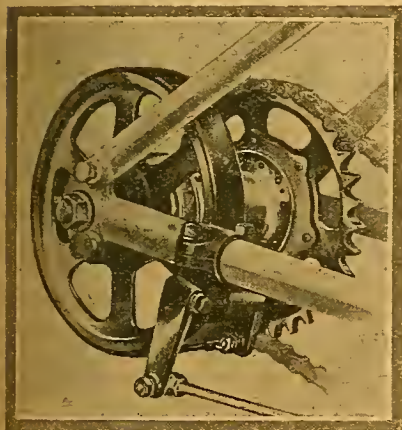
with three-speed gear. The alterations to the  $4\frac{1}{2}$  h.p. sidecar model were detailed in the issue of November 7th. The lady's Singer is a  $2\frac{1}{2}$  h.p. machine, which has already enjoyed considerable popularity among lady riders, and a large number of orders have been booked for it for next year.

### Singer Cyclecar.

Four examples of the Singer cyclecar will be on view, and these, of course, will attract a great amount of attention. Two will be chassis enabling the whole of the mechanism to be easily inspected. The other two will be complete with bodies and full touring equipment. Singer and Co. have decided to call this machine "The little car with a lot of luxury."

To repeat one or two details of its specification the wheelbase is 7ft. 6in.; track, 3ft. 6in. The engine is a water-cooled four-cylinder of 63 mm. bore  $\times$  88 mm. stroke, the cylinders being cast in pairs. Lubrication is automatic and by pump to all main bearings and troughs. Three speeds and reverse are provided. The ignition is by Bosch magneto, and the carburetter is a Clandel-Hobson. One of these cyclecars fully equipped for trial purposes will be held at the disposal of interested visitors during the whole of the exhibition, and the makers will be delighted to give any prospective purchasers a trial run.

specification. The engine is an air-cooled twin-cylinder, 85 $\times$ 88 mm., with cylinders at 50°. The chassis is tubular and the wheels 26in.  $\times$  2 $\frac{1}{2}$ in. Transmission is by chains throughout, and the change-speed gear is on the counter-shaft midway between engine and rear axle. This cyclecar has a differentially geared back axle of substantial design. The wheelbase is 6ft., track 4ft., and the overall length 8ft. 6in. Screen and hood are optional.

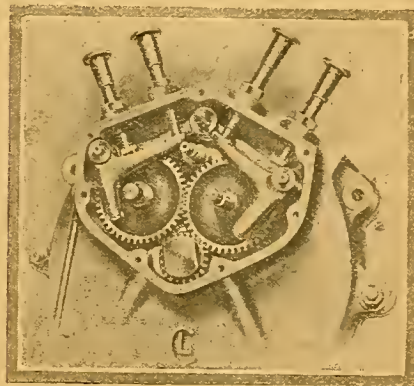


The No. 7 Chater-Lea sidecar model has a band brake fitted to the rear hub.

of fittings for motor bicycle, sidecar, and cyclecar construction will be on view, such as worm-driven axles, gear boxes, belt and chain-driven hubs, etc. Chater-Lea, Ltd., have such an enormous variety of fittings that almost any design of motor cycle, cyclecar, or sidecar can be built from their standard parts. No less than five separate catalogues are issued dealing with various branches of the motor cycle industry. Any of these will be handed to enquirers at the stand.

### SINGER.

Singer and Co., Ltd. (Stands 79 and 79a).—Twelve Singers will be on view, varying in horse-power from  $2\frac{1}{2}$  to  $4\frac{1}{2}$ . Arranged in a prominent position will be the actual machine used by G. E. Stanley when he broke the hour record recently, also the 4 h.p. passenger machine on which Harry Long covered 20,000 miles this year. The  $3\frac{1}{2}$  h.p. Singer will be obtainable for 1913 in five models, i.e., fixed engine, free engine, two T.T. models, and with three-speed gear. The  $2\frac{1}{2}$  h.p. Singer will be supplied in six different variations of specification, viz., as a light roadster with fixed engine, free engine model, light roadster two-speed, two T.T. models, and

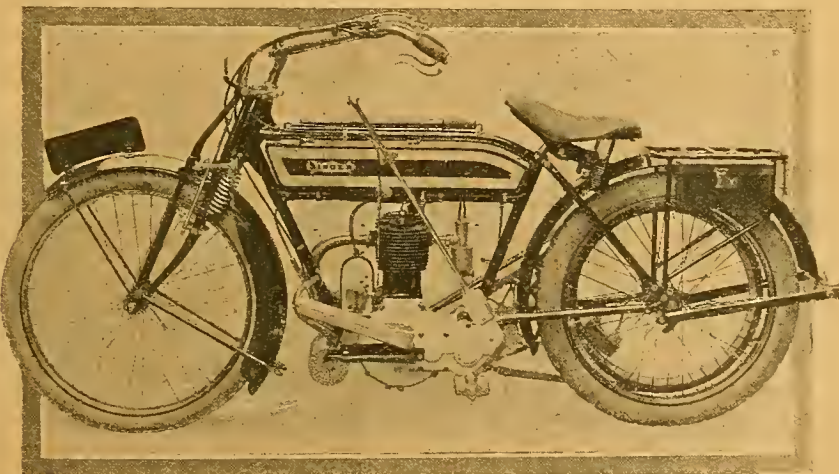


The simple timing gear mechanism of the 8 h.p. Chater-Lea engine. The inlet valves are operated by internal cams.

### PREMIER.

The Premier Cycle Co. (Stand 111).—Two models of the Premier cyclecar will be on exhibition. This machine we have already illustrated and described, but we repeat a few of the principal items in the

In examining the cyclecar the new models of the Premier motor bicycles must not be overlooked. They comprise  $3\frac{1}{2}$  and  $2\frac{1}{2}$  single-cylinder models with various specifications. To deal with the broad outline of the two types, the  $3\frac{1}{2}$  h.p. improvements include a dropped



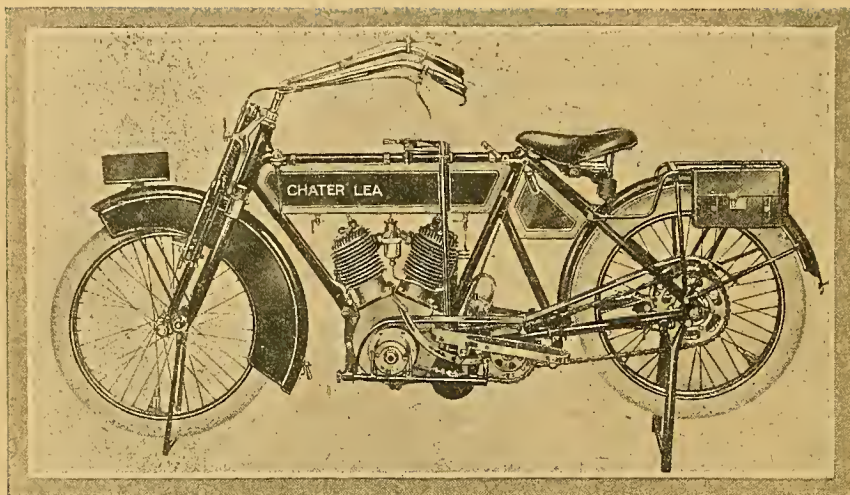
The 1913  $4\frac{1}{2}$  h.p. model two-speed Singer. The engine has a bore and stroke of 89  $\times$  95 mm. and is specially designed for sidecar work.



will include chain drive and three-speed hub, but this machine will not be ready in time for exhibition.

### L.M.C.

The Lloyd Motor Engineering Co., Ltd. (Stand 88).—Advance particulars of the L.M.C. 1913 models have already appeared. Various models will be exhibited. Some will be fitted with the L.M.C. two-speed gear designed by Mr. W. J. Lloyd for the L.M.C. motor cycle. This gear has a combined belt and chain drive, the belt drive being direct from the engine pulley to the back wheel. This simple form of change speed should be examined by all who are interested in variable gears for motor cycles. Detail



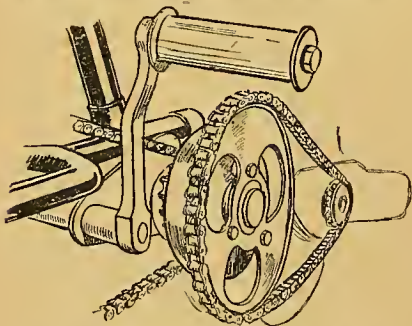
1913 Chater-Lea No. 7 model with three-speed gear box, multiple-disc clutch, 8 h.p. engine and chain drive.

frame enabling cylinder to be removed without disturbing the engine. The tank will have rounded edges, a belt guard will be fitted, and also a spring-up rear stand, which is provisionally protected. The rear guard divides to facilitate tyre repairs.

The  $2\frac{1}{2}$  h.p. engine,  $66 \times 72$  mm., has an off-set cylinder, weighs about 100 lbs., and has only minor improvements over the 1912 design. Three-speed Armstrong gears are fitted to both types. The Premier Cycle Company will also put on the market for next year a 7.9 h.p. twin sidecar model, but it will not be ready in time for exhibition.

### TORPEDO.

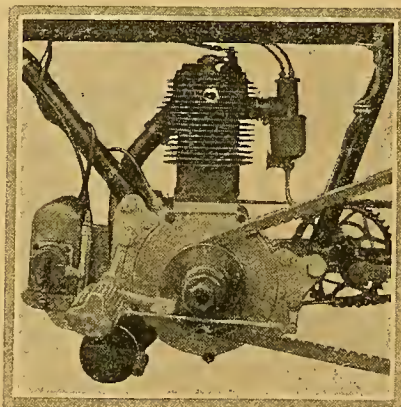
F. Hopper and Co., Ltd. (Stand 82).—The firm of Hopper and Co., Ltd., make the Torpedo motor cycles. The models which will be on exhibition are the  $2\frac{1}{2}$ ,  $3\frac{1}{2}$ , and  $4\frac{1}{2}$  h.p. The first is a lightweight, weighing 105 lbs., the height to the top of the saddle being 29 in. A  $3\frac{1}{2}$  h.p. model will be shown with fixed or three-speed Armstrong gear. The frame of this model has been entirely redesigned, and the saddle position lowered



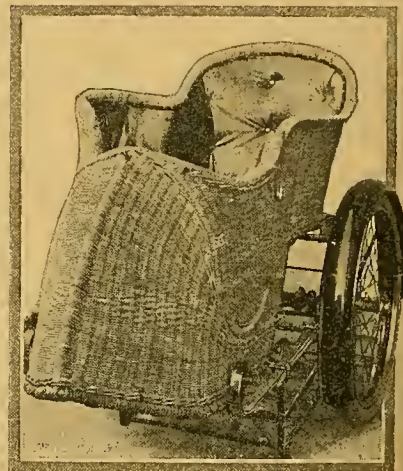
Low speed clutch and kick starter crank on the new L.M.C.

2 in. Belt shields will be fitted. The sidecar which will be fitted to the  $4\frac{1}{2}$  h.p. model is of an entirely new design. The chassis is built on the girder principle, and the hub is supported at both ends of the spindle. The sidecar wheel can be detached in a few

seconds, and when removed from the sidecar is held in position by a concealed stand. A luggage grid is provided. For next year the firm is preparing a  $1\frac{1}{2}$  h.p. Torpedo lightweight. The specification

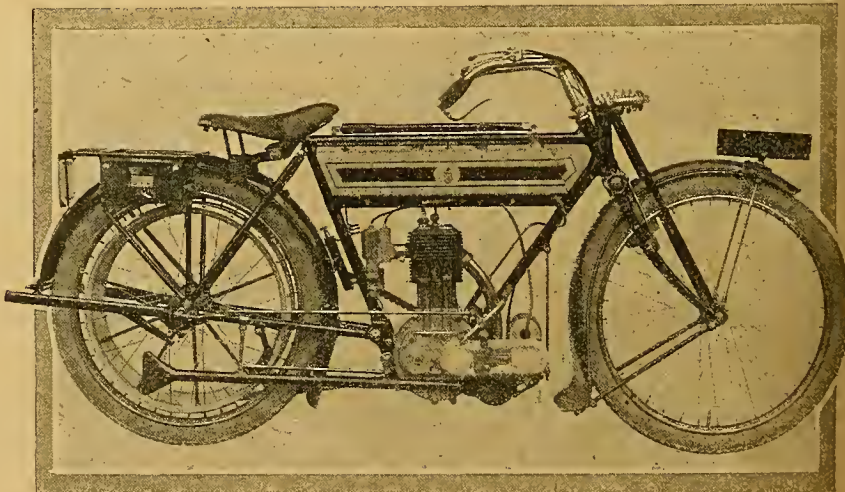


$3\frac{1}{2}$  h.p. Torpedo engine, showing handle-bar controlled carburetor, adjustable footrests, and heel operated left rim brake.



Dunhill's new sidecar body with seat at side for child.

improvements to the L.M.C. comprise a half compression device, adjustable tappets, a new spring fork, new toolbag, and mudguards. The rear portion of the back guard is joined to the carrier, and so made that the guard and carrier can be swung round to give easy access to the tyre. Incidentally we may mention that roller bearings to the connecting rod which have been adopted by one or two manufacturers for next year have been employed in L.M.C. engines for five years.



One of the additions to the Triumph range. T.T. roadster with hub-plate clutch.

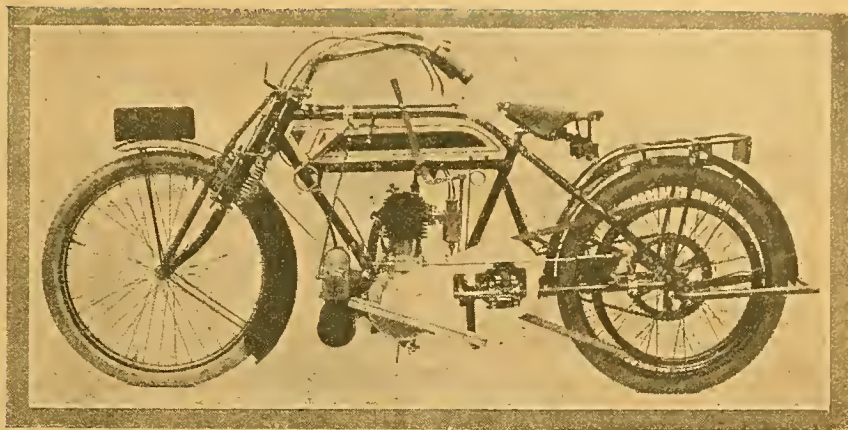


## LINCOLN ELK.

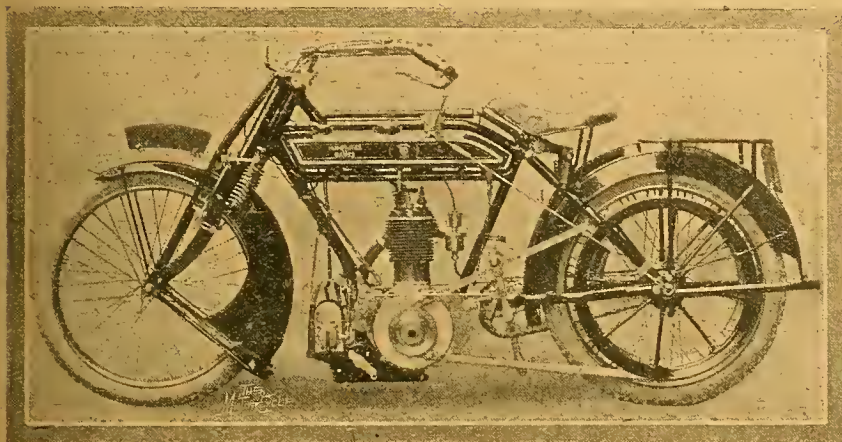
Among the Lincoln Elk machines to be exhibited by Mr. J. Kirby, on stand 121, is a new model with  $4\frac{1}{2}$  h.p. engine, bore and stroke  $89 \times 96$  mm. This machine has a double drive, a 1in. belt conveying the power on the high gear and a chain on the other side of the machine being utilised for the low gear. It has a dropped rear frame enabling a low saddle position, Druid forks, a front mudguard fitted with side extensions, and comfortable footboards. 26in.  $\times$  2 $\frac{1}{2}$ in. heavy tyres are fitted as standard, so that this model should be especially suitable for passenger work.

## 1913 TRUMP.

A wide range of models will be exhibited by Trump Motors, Stand 40, and will be fitted with nearly all the well-known models of J.A.P. engines. At the first glance it would appear that the machine has not been greatly altered,



2-speed Lincoln-Elk with chain and belt drive.

Belt-side of the  $3\frac{1}{2}$  h.p. 3-speed O.K. Touring model.

except that the standard finish is now in black, but, as a matter of fact, several improvements have been made which tend to increase the reliability and comfort of the machine. In describing these details, we may add that they will be found as standard on all models. The engines will be fitted with a combined decompressor

it sufficiently strong to withstand the strains imposed by sidecar work. The tank, which contains two gallons of petrol and a quart of oil, is supported from below and fitted with a rounded top and 2in. snap filler caps, while to its lower side are fixed a swivel priming cock

and a detachable petrol sump and filter. Sturmey-Archer three-speed hubs will be fitted to the 4 h.p. single and 3 h.p. twin, and Armstrong Mark VI. to the heavier models; the latter will also be fitted with mudguards which allow of 3in. tyres being fitted. The front guards are fitted with continuous side flaps, which pass through the forks without special fitting. A front wheel stand will be fitted, and the carrier, which has been somewhat improved, supports a pair of metal enclosed pannier bags. All types are fitted with a hand or kick starter fixed to the rear stays and connected to the hub by a short chain. A  $\frac{1}{2}$ in. belt rim will be standard, so that either 1in. or 3in. belts may be used, and the belt will be protected by a neat shield. The Amac five-jet carburettor will be fitted. A sidecar can be supplied specially to suit these machines, which has four points of attachment, and is fitted with a neat rubber-covered step for the use of the passenger.

## IVY.

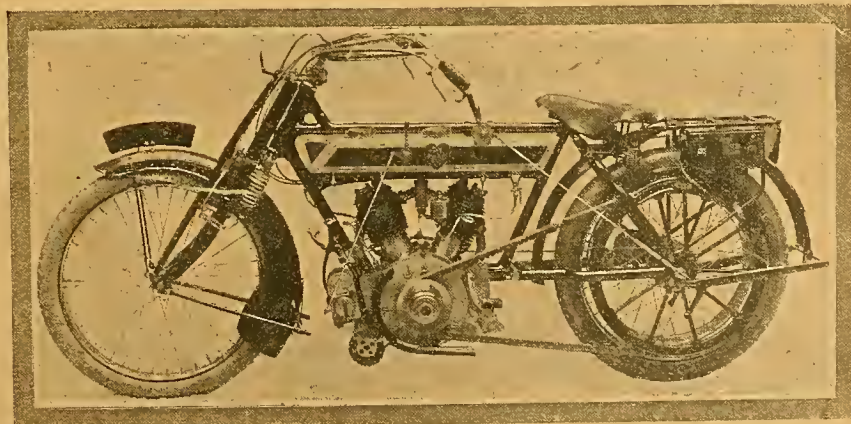
S. A. Newman (Stand 16).—Ivy motor cycles to the number of seven and one separate Ivy sidecar. The Ivy models comprise machines from  $2\frac{1}{2}$  h.p. to  $4\frac{1}{2}$  h.p., the latter being a sidecar model. The  $2\frac{1}{2}$  h.p. lightweight will have a Brampton



Removable sump and strainer fitted to the 1913 Trump-Jap.

Design of the steering head on the new Trump-Jap.

and internal exhaust lift, another feature being adjustable tappets, while somewhat larger exhaust pipes will be used. The steering head is now cast in one piece and strengthened by a steel liner, which makes



1913 3 h.p. 3-speed Trump-Jap.

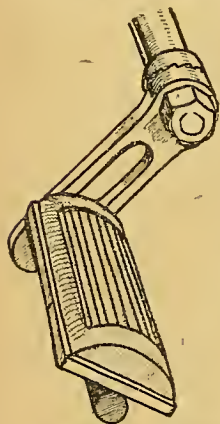


**Forecast and Guide to Olympia.**

variable gear, the 3½ touring model a B.S.A. two-speed gear, and the 4½ sidecar model a Sturmey-Archer three-speed gear. The lady's model will have a three-speed Sturmey-Archer gear. The Ivy sidecar has a coach-built body and a patented springing device. Dunlop tyres are fitted to all models, also Dunlop belts. The Swan sidecar, with specially constructed body, details and illustrations of which have already appeared, will be found on the Ivy stand. The Swan sidecar is made by the Midland Motor and Cycle Co. of Oxford.

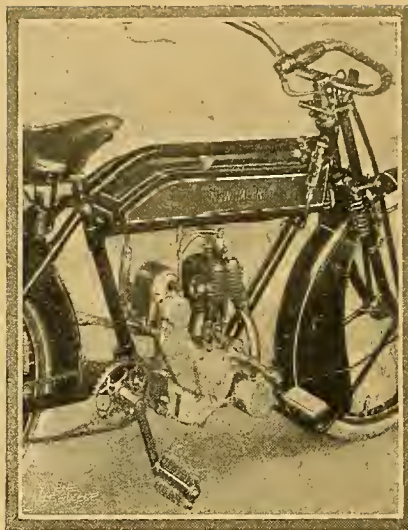
**NEW IMPERIAL.**

A wide choice is offered to the prospective buyer by the New Imperial Cycle Company (Stand 67), who list models from a 2½ h.p. single to a 6 h.p. twin. J.A.P. engines will be fitted throughout, and can be obtained in nearly all their variations. The motor cycles are fitted out very completely, and are solidly constructed. All fittings which should be permanent are brazed to the frame and so avoid a number of clips and nuts. Both front and rear mudguards have wide side extensions, while the rear part of the back



New Imperial footrest which may be adjusted in any direction.

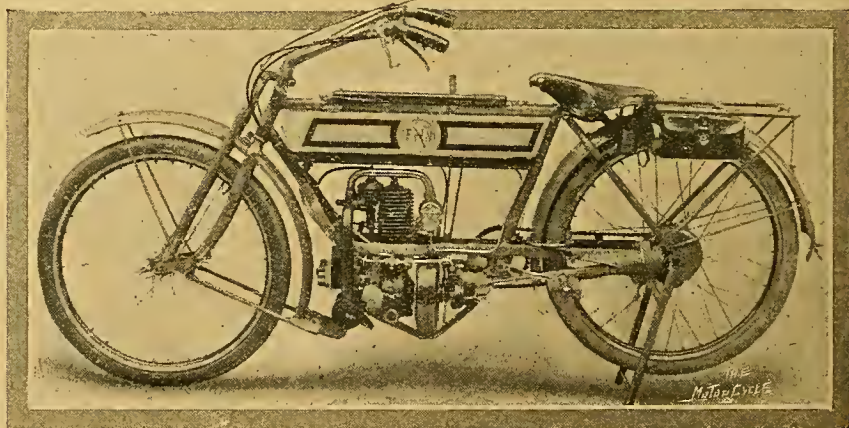
guard is detachable with the carrier to facilitate tyre repairs. Both front and rear wheel stands will be fitted. The clutch and brake pedals are mounted on separate legs, and the footrests are adjustable in any direction. The tank, which is supported from the bottom, is capable of holding two gallons of petrol and a quart of oil. The petrol tank is fitted with a clock dial gauge, and oil is supplied through a Best and Lloyd semi-automatic drip lubricator. Bosch magnetos and Amac carburettors are standard fittings, and the firm construct their own spring forks under Druid licence. They also construct sidecars for commercial purposes and passenger carrying, and all frames which are to carry any considerable weight have double wheel supports and a dropped frame to give a low riding position.



Valve side of the 2½ h.p. New Imperial.

**ELSWICK.**

Elswick Cycles and Manufacturing Co. (Stand 84).—Elswick motor cycles are made in various models and powers. The lightweight is a 2½ h.p. and the 3½ h.p.



The latest pattern two-speed shaft driven F.N., which has a silver grey finish, which colour greatly enhances the appearance of the machine.

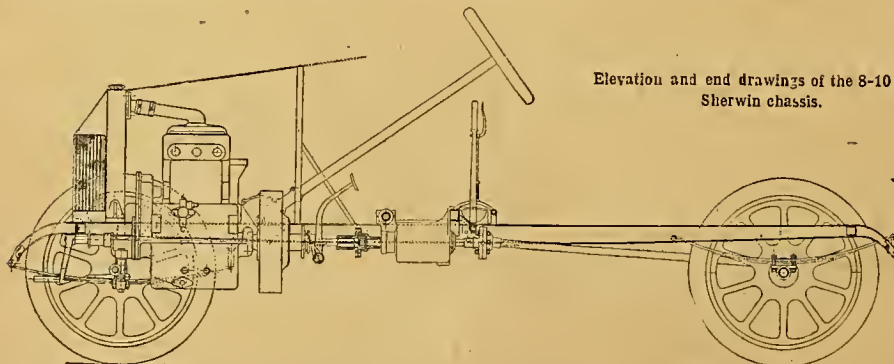
the standard touring model. Both of these machines have the same specification so far as fittings are concerned. The 3½ h.p. has an 25×83 mm. engine, and

the principal novelty of it is a front hub with divided spindle for quick detachment. The petrol and oil capacities have both been enlarged and bayonet-jointed filler caps are fitted. Some models will be exhibited with three-speed gears and free engine hubs. The Elswick sidecar is a low-priced attachment well-designed and sprung, and can be recommended to those who cannot afford a more expensive sidecar. Another model will be shown called the Elswick model B sidecar. This is of an improved type and is provided with a special mudguard with side wings covering the entire upper half of the wheel. The cane body is torpedo shaped.

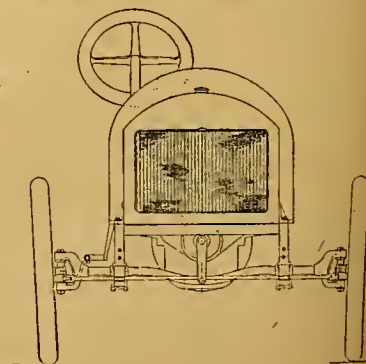
**SHERWIN AND LEO.**

The Sherwin and The Leo are two cyclecars which will be exhibited by the London Motor Coach Components. (The Leo was illustrated last week.) The engine of the Sherwin is a monobloc 8-10 h.p. twin-cylinder, lubricated by trough and splash, a constant level being maintained in the troughs by a plunger pump. Cooling is by thermo-syphon, and the cone clutch is of the ordinary leather-to-metal type. Three speeds and reverse are provided, and the final drive to the rear axle is by bevel. The frame is of pressed steel supported on underslung semi-elliptical springs in front. The Sankey detachable wheels carry 650×65 mm. tyres, and a special device is embodied with the artil-

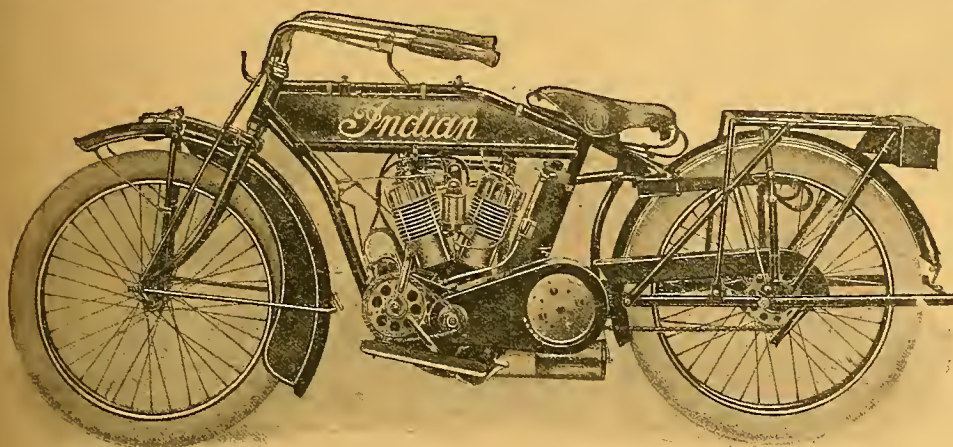
lery wheel to enable it to be more readily detached. The steering is by crown wheel and bevel and the control of the engine by accelerator pedal.



Elevation and end drawings of the 8-10 h.p. Sherwin chassis.







THE RED

*Indian*

: FEATURES FOR 1913 ::

SUSPENSION—The Laminated Spring Principle, front and rear.

FOOT-STARTER—The Improved "Indian" Type.

WHEELS & TYRES—Specially Heavy Rims, Large Tyres.

CONNECTING RODS—Fitted with Roller Bearings.

SILENCER—A Revelation in Efficiency.

MUDGUARDS—Extra Wide.

Investigate the RED INDIAN with the supple chain drive, it will interest you. If you are not visiting Olympia, send for catalogue.

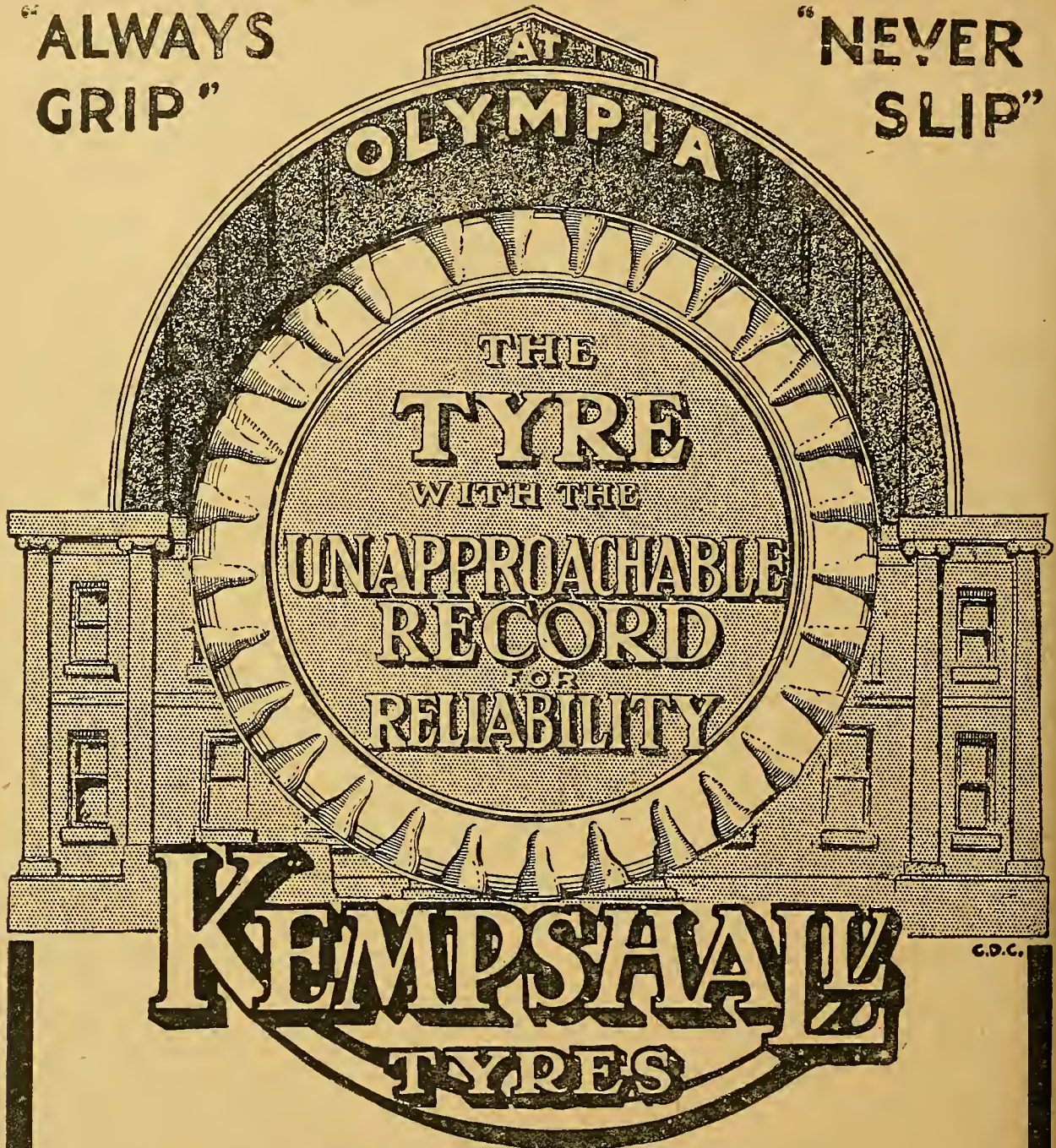
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Tools and Repairs—89, Bolsover Street, London, W. Telegrams—"Hendian, London." Telephone—1749 Mayfair.



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"NEVER  
SLIP"



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SCOTTISH TRIALS (Gold, Silver, and Bronze Medals), 1910—1911—1912.

SEE OUR NEW 26 x 3 CYCLECAR AND  
26 x 2 <sup>3</sup>/<sub>8</sub> MOTOR CYCLE TYRES AT  
**STAND 134, OLYMPIA.**

THE KEMPSHALL TYRE CO. (OF EUROPE), LTD., 97, 98, LONG ACRE,  
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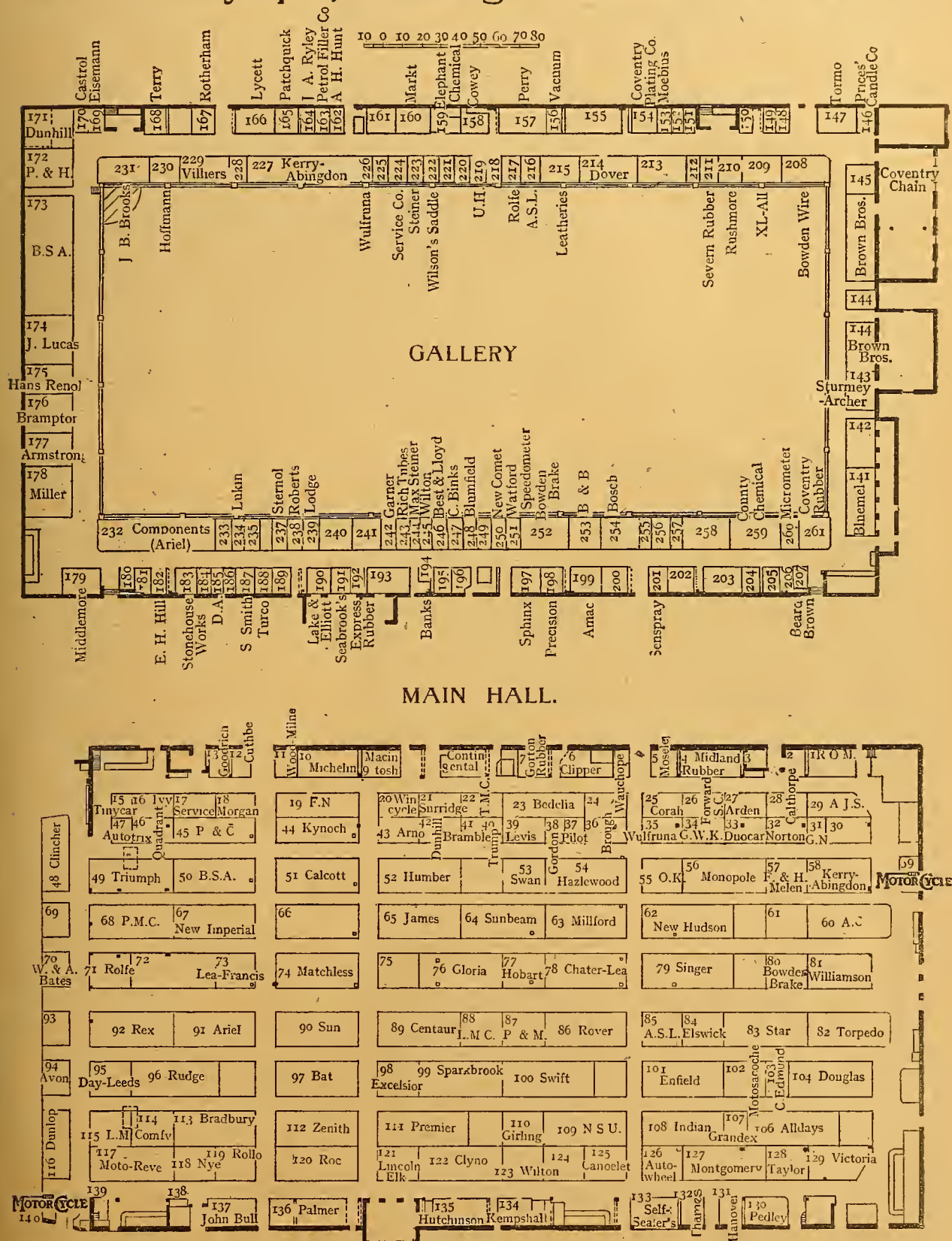
Telephone—No. 244 Gerrard (2 lines).  
Birmingham—Reginald G. Priest, 71, Lionel St. Paris—46, Rue St. Charles. Antwerp—48, Meir Cape Colony—  
The Motor Supply Co., 7, New York Buildings, St. George St., Cape Town. Agents for the United States—Cryder  
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## Plans of Olympia, showing Positions of Exhibitors.



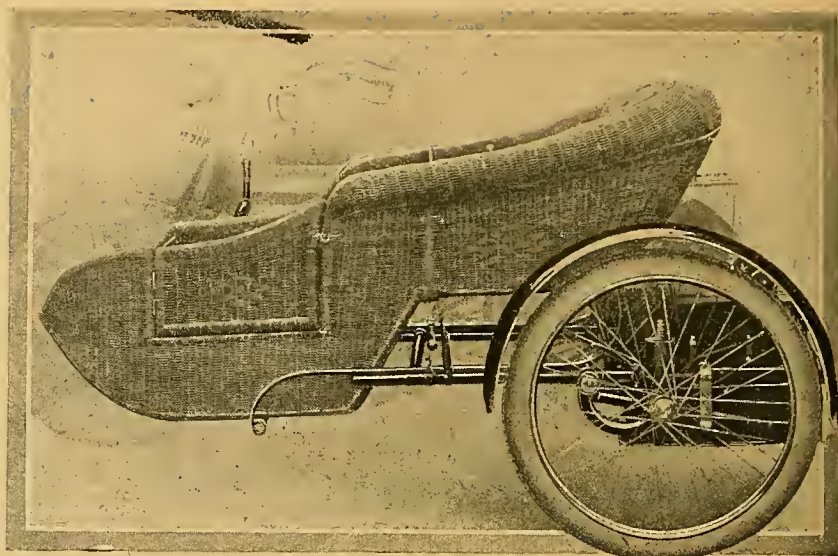


## GLORIA.

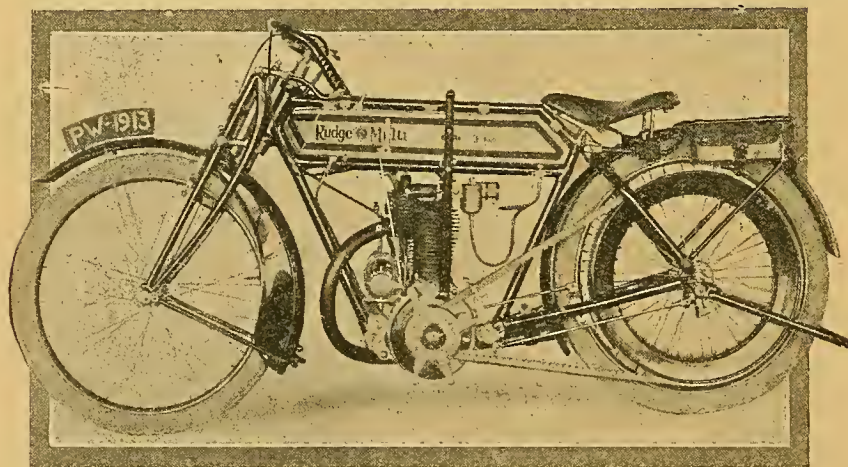
Many improvements have been made to the Gloria sidecars (Stand 76), and the bodies have been enhanced in appearance. The spring wheel is used on all models, and, in addition to stands for the wheels and receptacles for small parcels, the luggage problem has been carefully considered. Grids may be obtained attached to the heelboard accommodating large size touring trunks, and provision is made for a two-gallon tin of petrol. A model which is sure to create great interest is the projectile illustrated and described in our issue of October 17th last. This sidecar is luxuriously fitted out with every requirement, and is finished in first-class style.

## MOTOSACOCHE.

Motosacoché, Ltd. (Stand 102).—The Motosacoché models will be the 2½ h.p. single-cylinder with variable gear, which remains unaltered for 1913, the 2 h.p. lady's model with variable speed gear, the 2½ h.p. twin with two-speed gear incorporating free engine, chain transmission, footboards, and starting handle, and the 3½ h.p. twin, which, in the main, resembles the 2½ h.p., and is suitable for sidecar



A handsome Gloria sidecar attachment for next year, embodying the patent spring wheel. There is a receptacle in the back for parcel, etc., also a luggage grid underneath.



An example of the latest T.T. Rudge Multi.

work. A 6-7 h.p. engine will also be on view. This engine we have previously dealt with; it will be supplied to manufacturers of sidecar machines and cyclecars.

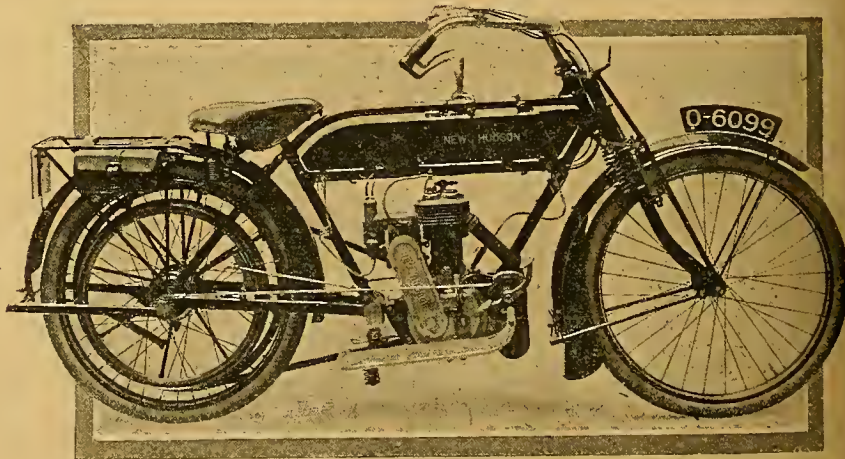
## STAR.

The Star Cycle Co. (Stand 83).—The Star Cycle Co. were among the earliest manufacturers of motor cycles, but have not marketed these machines for some years. They will re-enter the industry at Olympia with a 4½ h.p. motor bicycle 89 × 103 mm. = 630 c.c. This has an offset cylinder with detachable head for which many advantages are claimed. A detachable head allows easier access for grinding in valves, cleaning piston top, etc., and the valves can be ground in the ordinary manner without removing head. It also allows a lower frame, as it is not necessary to provide such a large space between the bottom rail and the cylinder top.

The cylinder is held down to the crank case by eye bolts which can be swung

forward, allowing the cylinder to be easily withdrawn. The valves are 1½ in. diameter and the tappets rods are enclosed in an aluminium cover extending upwards round the valve pockets. The piston is made of malleable steel. The connecting rod is a steel forging with extra large gudgeon pin bearing. Ball bearings are fitted to the crankshaft. The cam wheels are cut from the solid, and the spindle runs on a ball bearing. A decompression device is provided for starting and slow running. This is contained in the timing gear case, and consists of a slipper lever rocker operated by a small cam, and is put in and out of action by a lever connected to the exhaust lifter on handle-bar.

The free engine clutch is mounted on the engine-shaft, and is of the cone type leather-faced. The three-speed gear box is of the sliding type, just like a car, the top gear being direct. The box is placed at the rear of the engine and bolted to a platform attached to the crank case. Both chain drives from the



A new model for 1913. 2½ h.p. New Hudson. bore and stroke 70 × 90 mm. The cylinder of this model is offset.





*When at the Show—you must see the*

# 1913 REX-JAP 1913

***“The Proved Best Sidecar Machine.”***

**T**HERE is no doubt—1913 will be a Twin Cylinder year—it is now generally admitted that the Single Cylinder is not satisfactory for hard Sidecar work.

The REX-J.A.P. has been specially designed throughout for Sidecar use—fitted with the world-famous Twin Cylinder J.A.P. Engine—especially strengthened frame with brazed-on lugs, ensuring perfect alignment of Sidecar—powerful brakes—spring cantilever seat and spring forks—

exceptionally large tyres—pressure-fed automatic lubricator—and many other exclusive features.

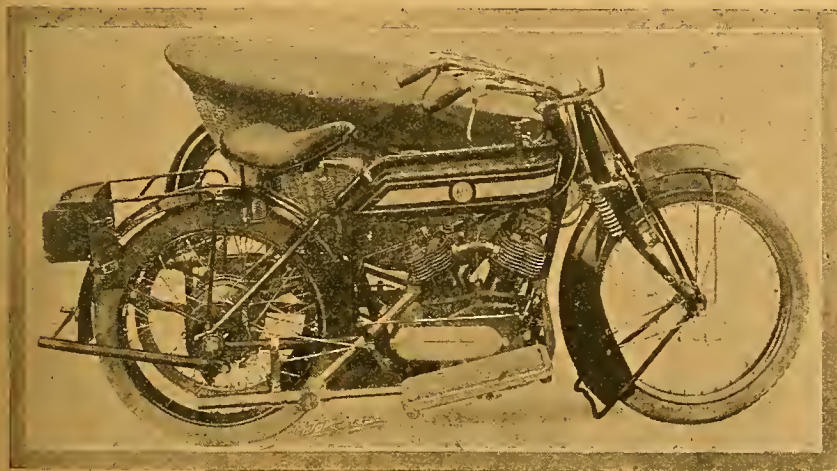
For speed, power, and flexibility, the REX-J.A.P. cannot be surpassed, whilst it is an ideal machine for traffic riding. Most hills can be taken on top gear—this is an enormous saving in wear and tear to the machine, and greatly increases the pleasure of driving.

The two-speed gear is perfect, and absolutely foolproof. On top gear the drive is direct from the engine to the back wheel.

**C** May we post you Preliminary 1913 Catalogue, giving full details of the improvements embodied in the 1913 Models?

**C** AGENTS—We have some good districts still open—our proposition will interest you.

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Stand  
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Olympia





# THE 3 $\frac{1}{2}$ H.P. ROVER

## Stand 86, Olympia.

### Full of practical improvements.

WE SHALL BE SHOWING:

The Fixed Engine Model .. .. . £48-15

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The 3-speed Gear Model with 2 $\frac{3}{8}$  Dunlop Tyres .. .. £58 - 0

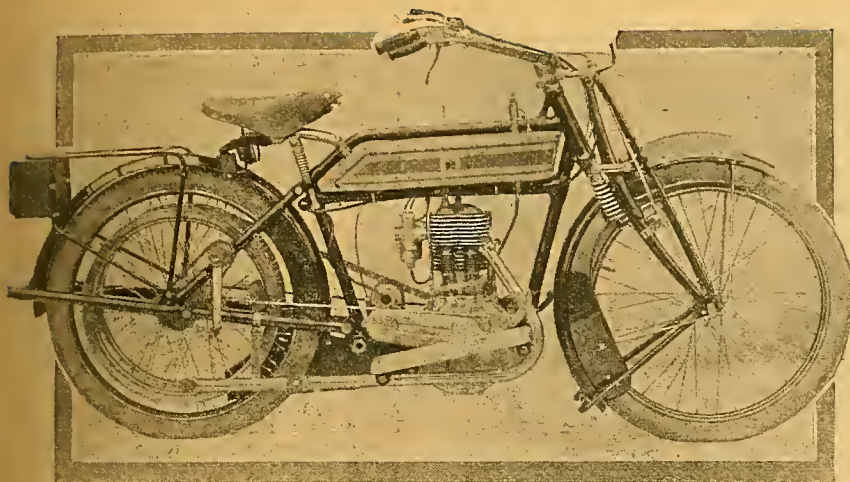
And a 3 $\frac{1}{2}$  h.p. **ROVER** with 3-speed gear fitted with a coach-built sidecar of our own manufacture, finished equal to the best cars. The chassis, made in our own works, is fitted with a brake on the side wheel easily coupled up to the bicycle pedal brake— £73-15

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# The ROVER Co., Ltd.,

## COVENTRY.



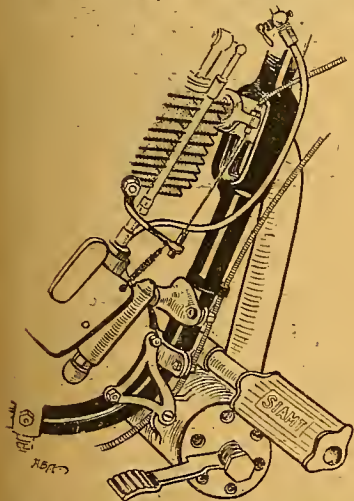


Valve side of the new model Rex single-cylinder bicycle.

engine to gear box and gear box to rear wheel are on the same side, thus ensuring a direct pull. The standard gear ratios are 4, 6, and 9 to 1, but the gear can be varied by substituting a different cog from the gear box or sprocket of the road wheel. The gear in no way interferes with the removal of the back wheel. Control is by means of lever and quadrant fitted to the top tube of the frame. A kick starter is provided on the gear box shaft.

The loop frame is maintained, but the top tube is dropped so as to allow of a very low saddle position. Spring forks are fitted; though the model illustrated has S.I.A.M.T. forks, Druid forks will be fitted to order. The engine, with its ingenious detachable head, which carries the valves and valve tappets, remains unaltered, but the new exhaust pipe, which is 1½ in. internal diameter, is now brought through an eyelet in the down tube of the frame to a new aluminium silencer, fitted with a foot-operated cut-out. The silencer union also carries a bracket, through which the adjuster of the Bowden exhaust lifter passes. Aluminium footrests are fitted.

It will be noticed that the front mudguard is provided with side shields, and that similar shields are fitted to the lower half of the rear mudguard. This mudguard is halved, and the carrier is attached to it, so that three parts of the mudguard can be swung out of the way, allowing a large portion of the circumference of the tyre to be exposed. The carrier is strongly constructed, and suitable for carrying luggage. Both brakes are hand-operated, and are applied, one to the inside and the other to the outside of the belt rim. The tank has also



The fitting of the exhaust pipe used on the 2½ h.p. S.I.A.M.T. Note the method of attaching the silencer.

The lubrication of the engine is by means of oil fingers cast on the crank webs. The oil first enters these from the drip feed or force pump, centrifugal force carries it to the crank pin, then through the connecting rod to the gudgeon pin and cylinder walls. The magneto is a Bosch chain-driven from the engine-shaft, and the chain runs in an aluminium oil-tight case. The carburetter is of the multi-jet variable choke type. An illustration of the new Star machine was published last week (page 1302).

### S.I.A.M.T.

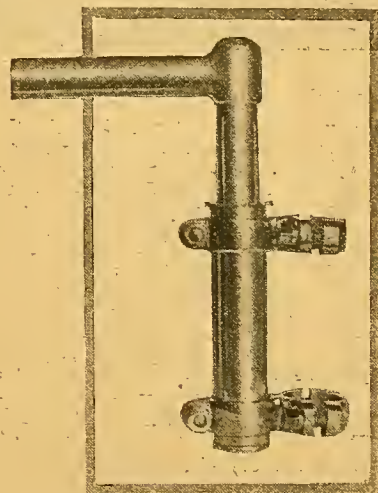
Radium S.I.A.M.T. Co. (Stand 23).—The interesting S.I.A.M.T. motor bicycle has been considerably improved, and has now been made thoroughly to conform to English ideas.

been improved in outward design. The finish of the engine is particularly good.

The Villiers two-speed hub can be fitted if desired. The Radium S.I.A.M.T. Co. are shortly introducing a 3½ h.p. twin, 58 × 68.8 mm. = 498 c.c. This machine has obtained several successes in open competition since its introduction into this country, and many more in Italy, its country of origin.

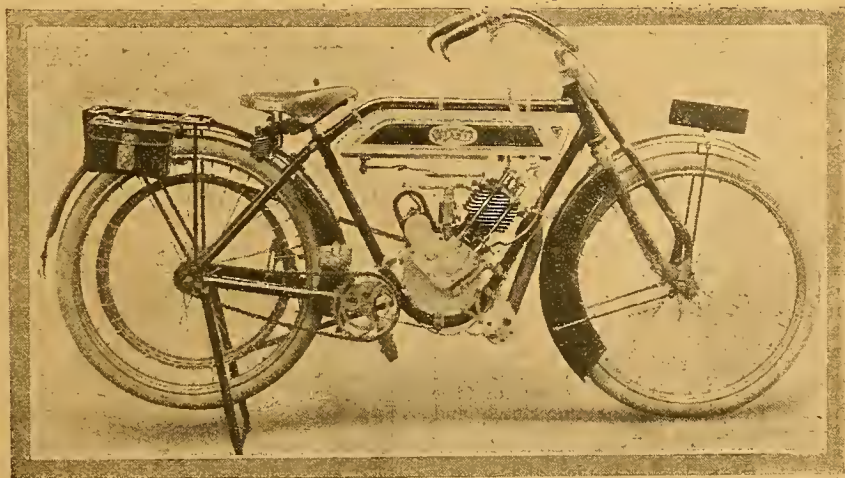
### GRANDEX.

Grandex Cycle Co. (Stand 107).—Among the items on this stand will be a front and rear springing device, the invention of Messrs. Southard, Southampton, the makers of the N.A.B. spring seat-pillar. The fork ends are supported on enclosed springs working in tubular guides. Ball bearings in a cage allow



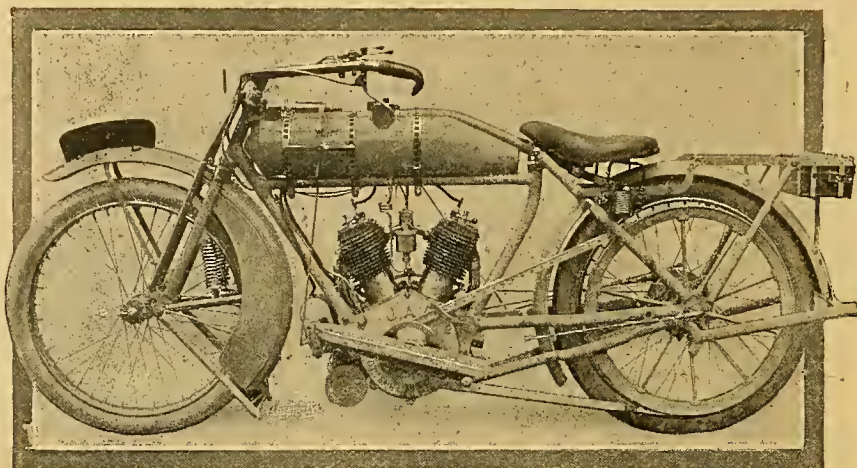
The latest pattern N.A.B. seat-pillar to be clipped on to the saddle tube. It will be shown by the Grandex Co. at Olympia.

the moving portion to work easily. A U-tube encircles the front wheel, and to it a front brake is attached. The rear spring is similar, being bolted to the rear fork ends, one spring to each side, and are joined by a U tube encircling the rear wheel. This springing may be fitted



1913 model 2½ h.p. S.I.A.M.T. fitted with overhead valves.



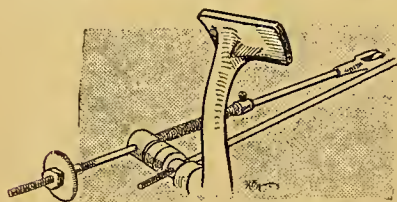


An 8 h.p. three-speed Bat-Jap finished in French grey.

to any make of motor cycle. Another ingenious Southard idea which will also be exhibited by the Grandex Co. is an oscillating oil pump operated by the exhaust valve tappet of a motor cycle engine and working through a ratchet and pawl. The pump is of the plunger type, and is supported on a special bracket. Its function is to deliver a constant supply of oil to the crank chamber and to maintain a constant level therein. It can be adapted to almost any make of machine.

### BAT.

The Bat Motor Manufacturing Co., Ltd. (Stand 97).—The new Bat sidecar machine (8 h.p., 85 x 85 mm.) is a particularly pleasing model. In the main it resembles this year's machine, but the detail improvements fitted to the 1913 model are well worthy of consideration. In the first place the back wheel is now made readily detachable. The brake



Bat clutch pedal, which, when depressed to its fullest extent, operates the hand brake.

rods are now fastened by means of special clips. The old method of fixing these rods with a pin, washer, and split pin has been done away with. The pin running through the eyelet in the rod has a groove cut round the edge, into which fits a clip, keeping the rods securely fixed and yet rendering them instantly detachable. To remove the back wheel it is only necessary to undo the chain and loosen the nuts on the back spindle, when the whole of the wheel can be dropped clear of the frame, carrying with it the clutch and the whole of the brake mechanism, as is clearly shown in the accompanying illustration. It will be noticed that the back wheel drum carries two brakes, the internal expanding brake controlled from

the right hand side of the machine, and the external contracting brake controlled by the pedal on the right hand side of the machine, which also operates the clutch. The square nut on the spindle is for adjusting the clutch, and if turned brings the inclined planes which expand the clutch closer together. The design of clutch is unaltered, it is of the internal expanding type. The cover over the magento bevel drive is a neat aluminium casting. It will be noticed that the front mudguard has been considerably improved, and a front wheel stand is now fitted.

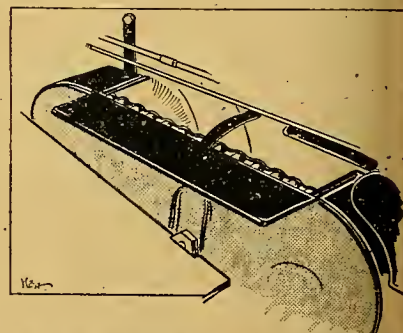
### Spring frame retained.

A fitting which adds to the comfort of the machine is the XL'All saddle, which is now a standard on this model. The well-known Bat spring frame remains as before. The kick-starter has been strengthened by the fitting of a larger chain. Particular care has been taken to protect the driving chains from mud. The front chain is also almost entirely enclosed, but the removal of a door or lid (shown in the accompanying sketch) allows of ready access to the chain.

The arrangement whereby the clutch pedal being depressed to its fullest

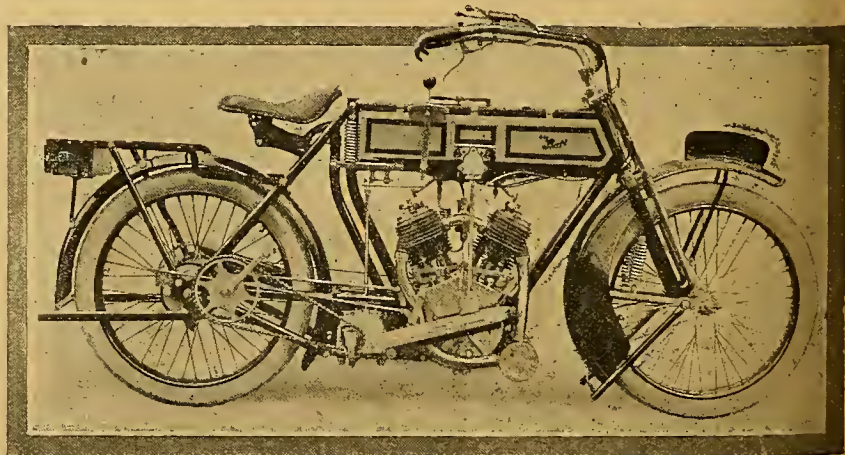
extent applies the external brake on the rear wheel is ingenious. The first of the sketches show how this is carried out. When it becomes necessary to shift the gear box to adjust the chains it is impossible to get the gear box out of line, as on the bed plate on which it rests there is a leather engaging with a groove at the bottom of the box, thus preserving perfect alignment. We consider the 8 h.p. Bat to be one of the finest sidecar machines on the market.

So far as bicycles are concerned, the Bat Motor Manufacturing Company are specialising on three models only, and have dropped the single cylinder type altogether. The 6 h.p. model, 76 x 85 mm., is of a semi-T.T. type but is thoroughly suitable for touring, and is intended to be used occasionally with a sidecar. It is fitted with a good carrier, there is a front wheel stand, ample mudguarding is provided, and the Armstrong three-speed gear is fitted. The lever controlling this is situated on the right-hand side of the tank, the coupling rod of the controlling mechanism passing at right angles through a tube running across the chain stays, thereby carrying the control to the left-hand side of the machine. The



Bat front chain guard, showing lid, which allows access to chain, a spring holding the lid in position.

magneto is carried in front of the engine in this model. The third model is the T.T. twin, 85 x 65 mm., fitted with overhead valves and J.A.P. carburetter. The particular model shown will have the exhaust pipes and silencer copper plated. All-Bat models are fitted with J.A.P. engines.



Valve side of the two-speed 8 h.p. spring frame Bat-Jap with chain drive.



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Mr. —, of Newquay, writes: "I have fitted the Avon-Lyso Belt to my  $3\frac{1}{2}$  h.p Zenith-Gradua, and have already done nearly 200 miles with it, and will let you know later on how it goes. At present it shows no sign whatever of wear, and meets with much admiration from the many motor cyclists in this district who have seen it."

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THE

**B.S.A.****VARIABLE  
JET****CARBURETTER****THE MOST EFFICIENT  
CARBURETTER ON THE MARKET.**

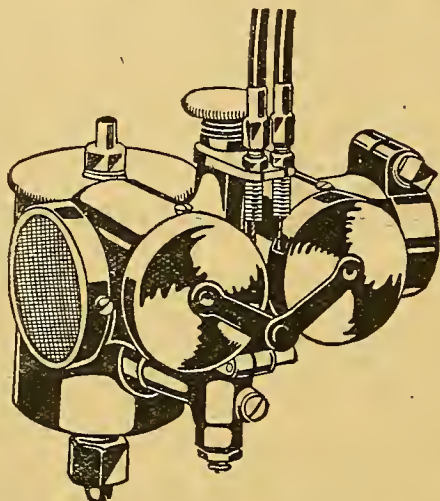
Every necessary adjustment for varying conditions has been embodied in the design, and it is possible to travel at a walking pace with the engine just moving, or to accelerate very quickly to an exceedingly high rate of speed.

This Carburetter was fitted to the winning machines in the Brooklands Senior and Junior Tourist Trophy Races.

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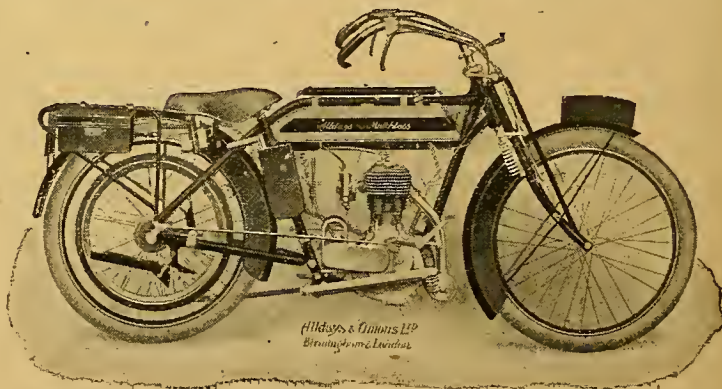


# ALLDAYS

## MATCHLESS MOTOR CYCLES.

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- 2 h.p. Lightweight Single Cylinder, Belt Drive.
- 3 h.p. Twin Cylinder, Belt Drive.
- 3½ h.p. Countershaft Chain Drive, Single Cylinder, 3-speed.
- 3½ h.p. Belt Drive, 2-speed Hub under Roc Patents.
- 3½ h.p. with Belt Drive, Clutch Hub.
- 6-8 h.p. Twin Cylinder, 3-speed, Countershaft Chain Drive. For Sidecar work.



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## AN AMERICAN MODEL.

A machine which hails from the United States has just made its appearance in London. This is the  $3\frac{1}{2}$  h.p. Pope, handled by the Pope Motor Cycle Agency, 55, Banner Street, Golden Lane, E.C. It will be exhibited at the Olympia Motor Cycle Show. The engine is 84.5 x 89 mm., 499 c.c., and is built entirely at the Pope factory, U.S.A.

The cylinder is offset and the combustion head is separate from the cylinder. The valves are of the overhead type. The carburetter is the Schebler automatic, a popular vaporiser in the States. The tank, which is cylindrical with domed end, contains two gallons of petrol and two quarts of oil. A large silencer is situated underneath the bottom bracket. The transmission is by a flat, endless, waterproof belt  $1\frac{1}{2}$  in. wide, and both pulleys are covered with leather.

The free engine and belt-tightening device is ingenious. In the pulley is a plate clutch, which is operated by a long side lever; coupled up to it is a lever freeing the clutch, and attached to the main lever is a long spring, at the end of which a jockey pulley is situated. The action of pushing forward the combination lever is first to engage the clutch, when any further movement will press the jockey up against the belt and increase the tension thereon.

Wide mudguards are fitted. The spring of the front fork is a laminated flat spring. A coaster brake is fitted in the rear hub, but to conform with English ideas a belt rim brake and also footrests will be fitted. The wheels are 28 in. and 24 in. tyres are fitted. The standard gear ratio is 4.6 to 1. The magneto is a Ruthardt, and the control is by twisting handle grips, operating the throttle on one side and the spark and exhaust lifter on the other.

## SPRING FRAMES.

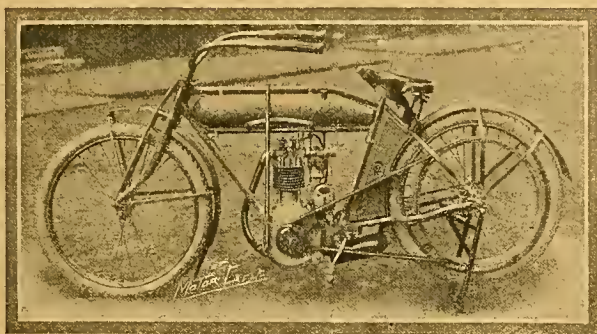
Edmund and Co. (Stand 103).—Three models of the above machine will be staged at the Show, two, fitted with a revolving two-speed countershaft gear and a 5-6 h.p. twin-cylinder for passenger work. The latter has a two-speed free engine hub. The Charles Edmund frame has been improved. The footboards of this machine work in unison with the saddle, thus ensuring lateral rigidity combined with a firm wheelbase. The springing also does not prevent the attachment of a sidecar.

## MONOPOLE.

A few days ago we inspected the first machine of a new make which is being manufactured by the Monopole Cycle and Carriage Co. (Stand 56) Olympia. The model we examined is fitted with a  $3\frac{1}{2}$  h.p. engine of 85 mm. bore x 88 mm. stroke, and is designed on standard lines throughout. Though

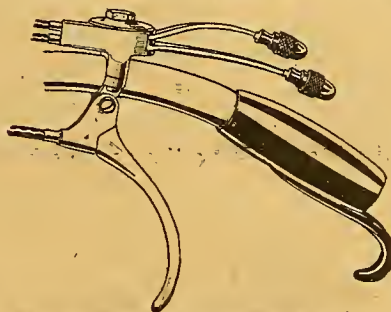
there is no outstanding feature which specially calls for attention, one finds on close inspection that all details have been carefully thought out, and that the machine is soundly built.

Gas is fed by a B. and B. straight-through type carburetter, and the charge is fired by a Bosch magneto, whilst the



$3\frac{1}{2}$  h.p. Pope to be exhibited at Olympia.

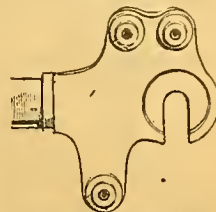
transmission is by belt to a Sturmey-Archer three-speed hub gear. The frame has a dropped top tube, and is of very stout construction, the back stays being particularly noticeable. Handle-bar control is fitted throughout, the levers



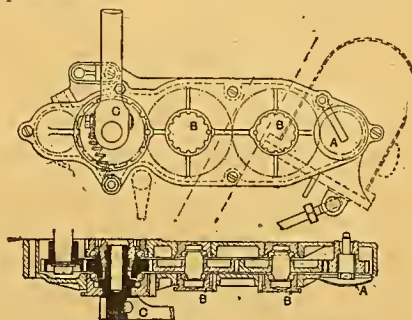
Bowden combination control levers on the new Monopole.

being of the Bowden combination type, in which only one clip is used for the carburetter and brake control, etc. The tank has rounded edges, and is fitted with a glass petrol gauge and a Best and

Lloyd semi-automatic drip-feed lubricator. Specially thick front-wheel spindles are fitted, and the rider is protected from mud by large side flaps running the whole length of the front guards; the rear guard is extra wide, and provided with an additional guard over the belt. We especially noticed that all jaw connections on brake rods, etc., are accurately machined from the solid, and not merely filed-up castings. The footrests consist of good rubber covers let into the strong aluminium plates, which provide side pieces to prevent the foot slipping off. The clutch and brake pedals are mounted on separate rods, and care has been taken to set them in convenient positions.



Monopole rear fork end.

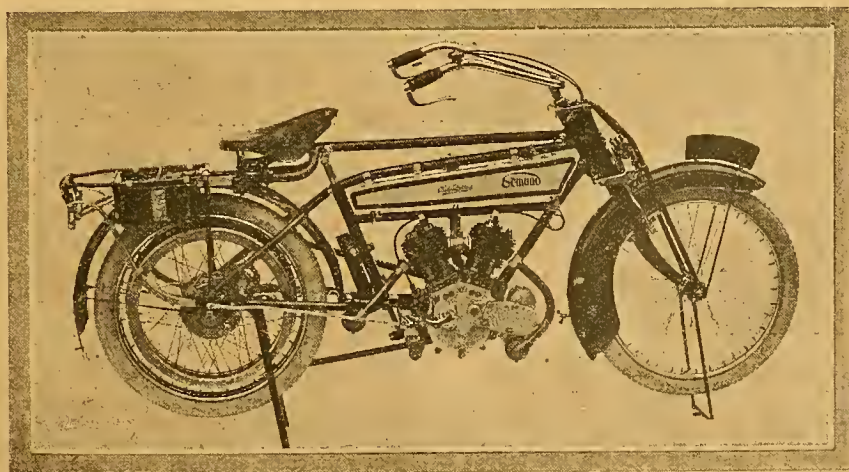


Enfield magneto drive and kick starter.

- A. Cap covering magneto armature spindle.
- BB. Adjustable ball bearings.
- C. Crank of kick starter.

A  $2\frac{1}{2}$  h.p. model of 70 mm. bore x 76 mm. stroke will also be marketed. It will be constructed on much the same lines as the  $3\frac{1}{2}$  h.p.

R. G. Nye and Co. (Stand 118).—This firm will stage Stuart-Turner motor bicycle, which we illustrated on November 14th. They also hope to have the Gyroscopic engine, made by the Gyroscopic Engine Co., of Cardiff, and one or two other makes of motor cycles.

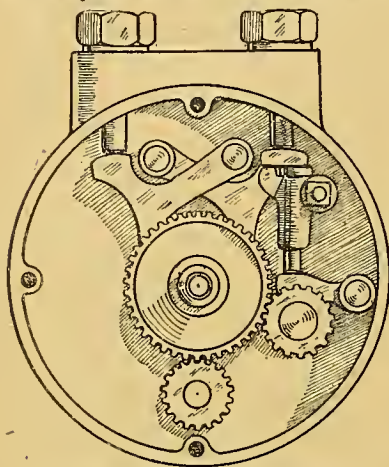


The 1913 Edmund spring-frame motor cycle, which is fitted with a twin engine.



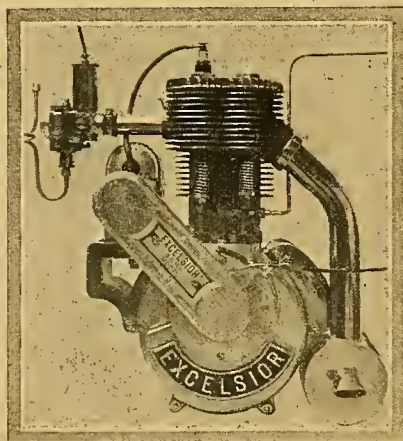
## EXCELSIOR.

Somewhat of a novelty will be shown at Olympia by Bayliss, Thomas, and Co., the makers of the Excelsior (Stand 98). It consists of a single-cylinder engine of 96 mm. bore x 112 mm. stroke, and rated at 5.6 h.p. This engine is manufactured for heavy sidecar work as it is realised



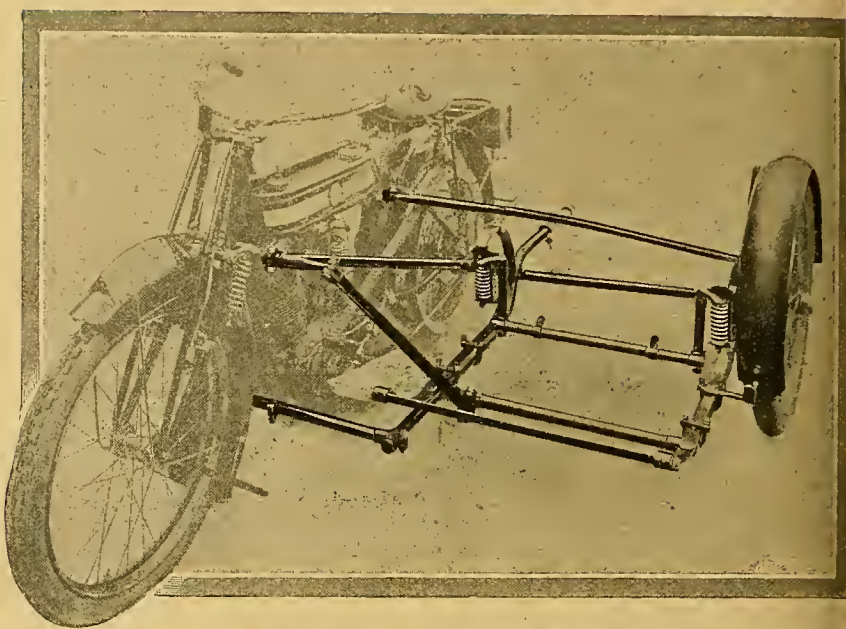
Excelsior timing gear and decompressor.

that, though many people require extra power, they are afraid of the slight extra complication of a twin. In general lines the 5.6 h.p. resembles the the 4½ h.p. model, but extra cooling ribs are set diagonally across the cylinder head. A novel feature which is to be adopted on all Excelsior models is the combined decompressor and exhaust lift, the working of which is as follows, and can be followed from the accompanying sketch. The valves are operated by a single cam through the medium of rockers, and in front of the camshaft lies a third gear wheel running at engine speed. On this is mounted the decompressor cam, which also acts through a rocker. Above this rocker is mounted a tappet carried in a steel guide and pivoted to the crank case.



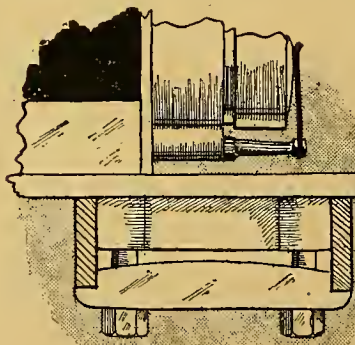
6 h.p. single-cylinder Excelsior, built especially for passenger work.

This guide may be swung round its pivot by means of a Bowden control. In the normal or running position the tappet is swung right out of action, but when it is desired to use the decompressor it is



Sidecar chassis of the 1913 model Rex-Jap with four point suspension.

moved to the position shown in the sketch. Thus, on the compression stroke, the auxiliary cam comes into action, and through its tappet raises the main exhaust rocker, thus allowing a certain amount of the compressed gas to escape. To lift the exhaust valve the tappet guide is forced further round and a toe formed with it comes into action on the exhaust rocker, keeping it raised till the lever is released.



Neat magneto fixing on Excelsior.

The magneto fixing is unusually neat and simple, as it is carried on a bracket which is clamped to the engine plates by two set pins. The silencer dimensions have been increased, and it now has treble the previous capacity; some of the gases are allowed to escape through the silencer end plate and some through a drilled pipe.

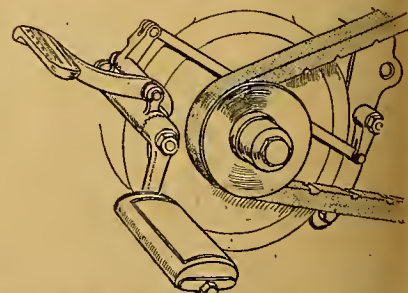
The machine is built throughout on standard lines, the frame being very powerfully made to withstand the strains of the big engine and sidecar. It is well mudguarded and may be fitted with either the G. and H. bottom bracket two-speed gear with chain drive, or Armstrong three-speed with belt drive. The Sturmey-Archer hub is fitted to the smaller models.

## REX-JAP.

The control of the Rex-Jap is very simple, and it is not necessary to take the hands off the handlebars. The machine can be driven at a crawl on low gear, and on high gear with a passenger and sidecar can attain considerable speed.

In order to prevent their clients having trouble with the tyres, the firm have made extensive road tests with various makes, and have finally decided to fit a 650 x 60 Kempshall heavy non-skid tyre on the back wheel and a 26 x 2½ Kempshall tyre on the front wheel. These tyres will be specially made with an extended flap, so that the tube is completely protected, and they are guaranteed, when used for sidecar work, for at least 2,500 miles.

H. Taylor and Co. (Stand 128).—This firm of agents will exhibit A.J.S. motor cycles, for which they are sole London and district agents; also Douglas, Rudge, and Zenith machines will be on view. Another exhibit will be the Super cyclecar tandem, an illustrated description of which has already been published in *The Motor Cycle*. It has an Anzani engine, 8-10 h.p., water-cooled, wheel steering, and combined chain and belt drive. A range of accessories will also be exhibited.

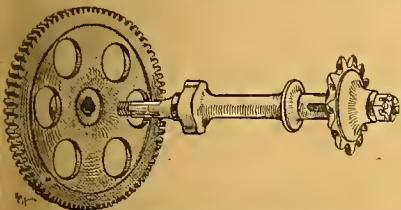


Triumph adjustable footrests, and new design brake pedal. The operating rod passes behind the pulley.



## AUTOWHEEL.

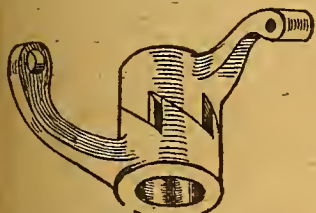
International Auto Wheel Co., Ltd. (Stand 126).—The new Autowheel has undergone several improvements. The chassis portion consists of a rectangular frame supporting the engine, over which a circular tube runs, the ends of which are brazed to the frame. To this the



Large timing wheel, camshaft with double cam, and chain wheel, showing castellated shaft.

mudguard is bolted, and brazed to the latter is a special cradle which carries the petrol tank, while the mudguard is attached by brass nuts so as to avoid rust. As regards size, the engine remains the same, though the new cylinder has larger radiating fins.

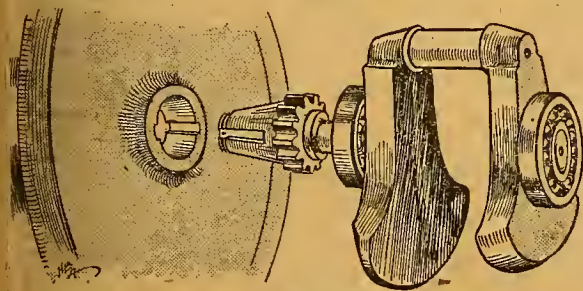
An examination of the parts of which the engine is composed shows that great care is exercised in its manufacture. The timing gear wheels are carried on castellated shafts, while the crank and camshafts are dropped forgings of Ubas steel. The small pinion of the distribution gear is formed in one with a sleeve which is a dead fit on the end of the crankshaft. Keyways are cut on the crankshaft in



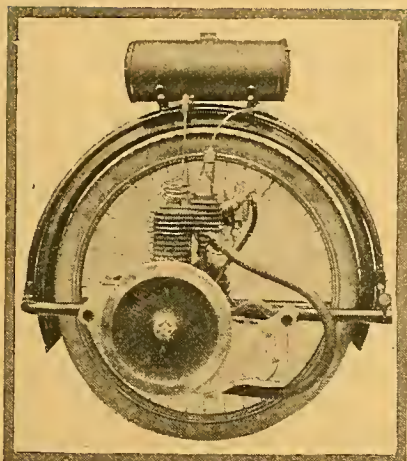
Exhaust lifter of the Autowheel.

the sleeve and in the flywheel, and two keys secure the whole, while a castellated nut on the end of the crankshaft locks the whole together.

To stop oil from leaking from the crankshaft bearing, a felt washer is inserted, which is ingeniously kept in position by a split ring of steel wire, the two ends of which are bent up at right angles and engage with two holes in the minimum boss of the crank case. The exhaust lifting arrangement consists of two sleeves, on each of which an arm forms an integral part on which inclined



Crankshaft, small timing wheel and flywheel on the Autowheel engine, showing method of fixing.



Latest model of the Autowheel.

planes are cut. These slip over the exhaust valve tappet guide and form a simple and effective method of raising the valve.

As will be remembered from our previous description of the Autowheel, the crank case casting comprises the crank

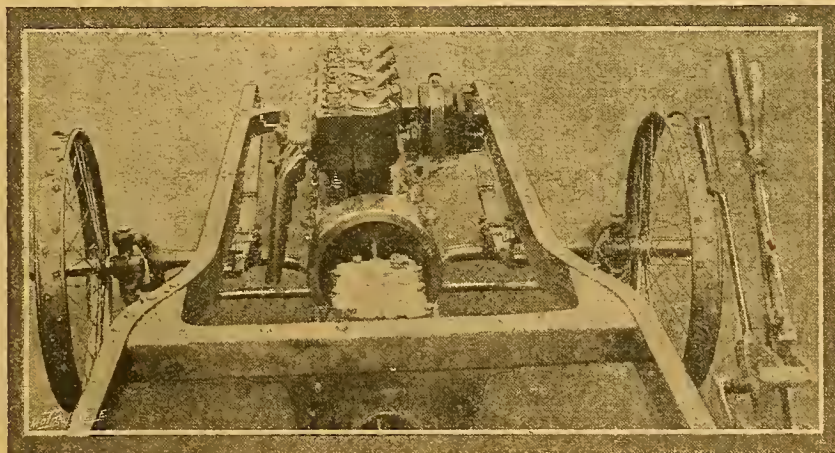
the correct timing of the valves being brought about by two cams on the wheel instead of one. There is no doubt that great care is exercised in the design and manufacture of the Autowheel, and we cannot but congratulate the makers thereon.

## T.M.C.

Wilkinson T.M.C. Co., Ltd. (Stand 22).—This firm inform us that they were unable to obtain as large a space as they expected at Olympia, but they will be pleased to give the fullest information at the above stand, where they will be exhibiting a lightweight, a T.M.C. sidecar, and a cyclecar.

## THE COMFY SIDECAR.

The Comfy Sidecar Co. (Stand 114).—Eight sidecar models. The new design of frame enables the body to be slung several inches lower than previously, and reinforces the main axle. Four inch mudguards are fitted, supported by three solid steel stays. The hubs have extra strong axles; plated rims are used, and these, together with twelve gauge spokes, make a very sturdy wheel. Michelin tyres (26×2½ in.) are fitted as standard. The aprons are made of Cape cart hood material and fastened with six tabs. The bodies of all models, excepting the lowest

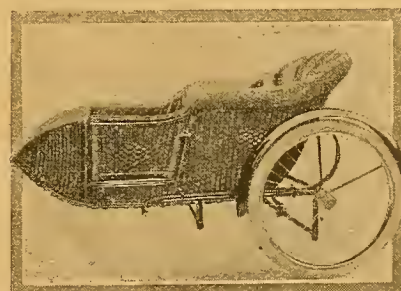


Front half of T.M.C. cyclecar chassis.

case proper, a lubricating oil reservoir, and a bed plate for the magneto (the firing point of which, by the way, is fixed). The lubrication works on the bird fountain principle. The reservoir is airtight, and the only means of reaching it is through a pipe which is normally covered with oil in the crank chamber. When the oil is below the level of the orifice of this pipe air passes up it into the reservoir and allows the oil to flow into the crank chamber. The flow into the crank chamber is controllable by means of a needle valve operated by a screw adjustment underneath the crank case. The lubrication, therefore, is automatic.

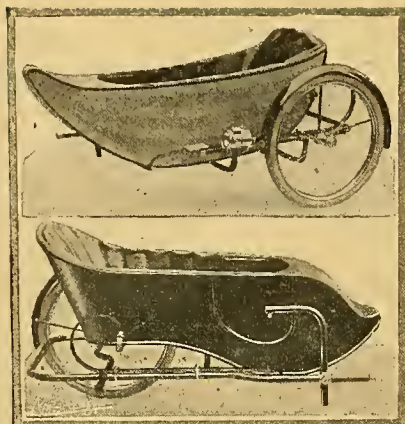
The camshaft, it may be remembered, is geared down 1 to 4 from the engine,

priced ones, are of solid reed cane with rolled edges, and are upholstered in leather cloth. A telescopic stand is fitted adjacent to the sidecar wheel, and all connecting tubes are telescopic, enabling the Comfy sidecar to be fitted to any make of motor bicycle. The policy of this firm is "No Extras," prices include apron, stand, etc.



An example of the Comfy sidecar.





Two imposing examples of Bramble sidecar bodies to be exhibited at Olympia. Stand No. 41.

### LAKE & ELLIOT.

Lake and Elliot (Stand 190).—One of the earliest firms to take up the manufacture of a two-speed gear for motor cycles was Messrs. Lake and Elliot, Braintree. The 1913 pattern has been improved in several details. The expanding brake, which is of phosphor bronze, has now two grooves cut round its circumference which allow the oil to be got rid of more quickly during engagement, while the wedge expander has had the angle on one side slightly altered, together with the corresponding edge of the brake or clutch against which it abuts, so that the drive is taken up with greater certainty. Both these alterations tend to allow the drive to be taken up more quickly and to obviate any possibility of slip.

### DAY & SONS.

Job Day and Sons (Stand 95).—In addition to the cyclecar described last week, page 1301, this Leeds firm will exhibit a  $3\frac{1}{2}$  h.p. motor bicycle. An overhead inlet valve is fitted, and a special feature is the system of lubrication. The lubricator discharges into a well at the base of the cylinder into which the piston dips at every downward stroke. One pint of oil has been found sufficient for 250 miles under normal conditions. An easy starting device which is fitted to these engines enables the engine to run under its own power and propel the machine at a speed as low as  $2\frac{1}{2}$  m.p.h.



New Cowey speed indicator with trip recorder on periphery of dial.

D10

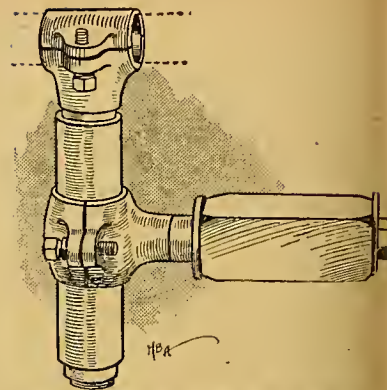
### STELLA.

"Stella" is the name chosen by Messrs. R. G. Nye and Co. for the new two-stroke water-cooled machine manufactured by Messrs. Stuart Turner and Co., for which Messrs. Nye and Co. are the selling agents. We were given a short run on the machine, to which a sidecar was attached, the other evening. It proved itself to be easily controllable in traffic and capable of a good turn of speed. The engine runs extremely smoothly, the clutch takes up the drive very sweetly, and altogether the machine appears to be highly suitable for sidecar work.

### WINCYCLE.

Yet another folding sidecar has been introduced by the Wincycle Trading Co., Ltd (Stand 20).—Briefly described, the chassis consists of a rectangular frame composed of two longitudinal tubes connected by two pairs of cross stays pivoted at their ends to the former. The C springs, which are of the usual type, are secured together by transverse rods on which the body is fixed.

Two strengthening bars are secured between the springs, and are spaced a short distance from the frame. The ends of these bars are adapted to slide into slotted brackets brazed on to the cross stays, and are locked thereon by means of spring catches. Two attaching arms are arranged on the side of the frame nearest the cycle, one being attached to the diagonal tube of the machine near the rear forks and the second to the saddle pin. To detach the sidecar it is only necessary to undo two bolts at the forward end of the rectangular frame. This allows the body to be withdrawn, and also permits the frame to be folded up against the motor cycle. In the illustration of the chassis is shown a luggage carrier. This telescopes into the main longitudinal members of the frame, and is an additional means of keeping the whole rigid. It also serves to secure the frame if the chassis is used without a body. There are two stays underneath the springs, thus serving to keep the body rigid under normal conditions. The whole device is simple and looks as if it is likely to be a successful job. The sidecar has, we understand, been thoroughly tested. The fixings to the motor cycle frame are of the quickly detachable type, and it is interesting to note that the sidecar when folded will pass through a 2ft. 6in. doorway. The Wincycle Trading Co. will



Service Co.'s spring footrest. (Stand No. 20.)

also exhibit a  $3\frac{1}{2}$  h.p. Win-Precision motor bicycle, a  $3\frac{1}{2}$  h.p. T.T. models, a  $4\frac{1}{2}$  h.p. with Roc two-speed gear, and a  $2\frac{1}{2}$  h.p. Both the  $2\frac{1}{2}$  h.p. and the  $3\frac{1}{2}$  h.p. will be fitted with the top tube dropped at the rear.



The folding sidecar to be exhibited by the Wincycle Trading Co.

### STURMEY-ARCHER GEARS.

Sturmey-Archer Gears, Ltd. (Stand 143).—The Sturmey-Archer hub gear remains practically the same. Among other firms who will fit the Sturmey-Archer three-speed gear in 1913 are the Triumph and the Humber. A special plant of the latest automatic machinery, which has cost over £10,000, has just been installed, and the producing capacity of the firm is now 20,000 hub gears per annum. The makers recommend that in fitting this hub precautions should be taken to secure the axle and left-hand cone from turning, and that an anchor plate should always be fitted in the same way as on pedal cycle coaster hubs. Sturmey-Archer Gears, Ltd., claim that the only thing necessary for the perfect working of this gear is correct fitting.



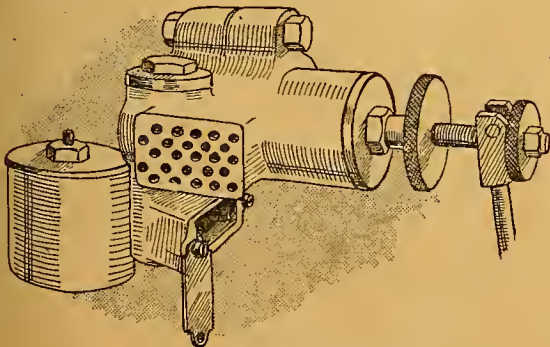
## THE NEW PERRY.

An Up-to-date Cyclecar, with Twin-cylinder Engine, Three Speeds, and Worm Drive.

A WELL-DESIGNED runabout has been produced and will be on view at Olympia on the stand of Perry and Co., Ltd., Tyseley, Birmingham, the well-known chain makers. This machine has been undergoing tests for a considerable period, and is not in any way an untried vehicle. We ourselves had a run on one some six weeks or more ago. In spite of its car-like lines and general appearance, the machine is a true cyclecar, as the chassis is said to weigh only  $4\frac{1}{2}$  cwts. and the complete machine well under 7 cwts. The engine is of the two-cylinder vertical type, with both connecting rods working on a single crank pin, both pistons rise and fall together, and the explosions occur alternately. The cylinders, which measure  $72 \times 108$  mm., are water-cooled, and have the exhaust and inlet leads cast in them. The valves lie all on the near side, and are enclosed by a quickly detachable cover. Adjustable tappets are used, and a ball takes the cam-thrust. The magneto is driven direct from the front end of this shaft. Gas is supplied by a very simple form of automatic carburettor manufactured by the company. The motion of the single barrel opens the throttle and air ports in the correct proportions.

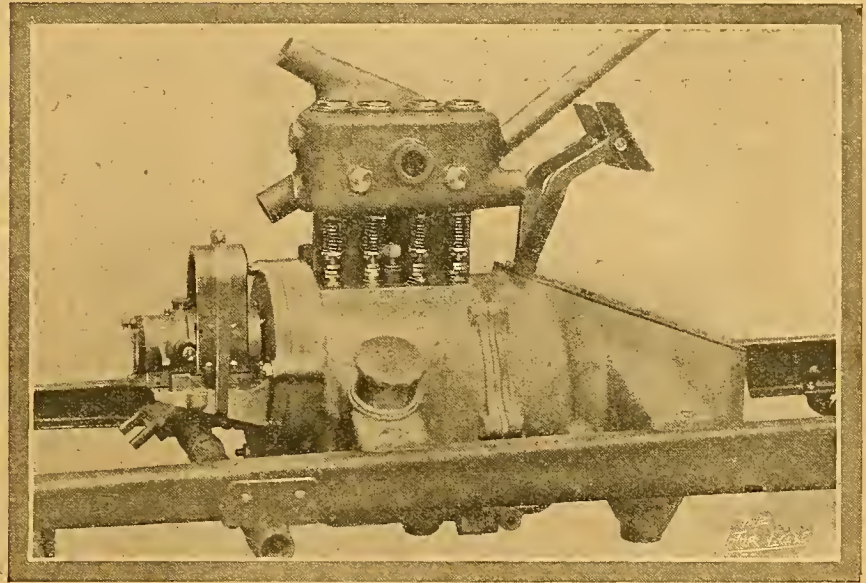
### The Unit System Adopted.

The gear box provides three speeds and reverse with a direct drive on top, and is bolted to the crank case so as to form a complete unit. The clutch is of the cone type, two metal faces working in a bath of oil being engaged by a powerful spring. Both clutch and gears are easily accessible by simply removing a long sloping cover. From the gear box, power is transmitted to the rear axle by a long propeller-shaft, which has a simple but effective T universal joint at each end. The rear axle is of the live type, driven by a carefully designed overhead worm. The central casting is of malleable iron, while the side members are tubular steel. A spur differential is fitted.



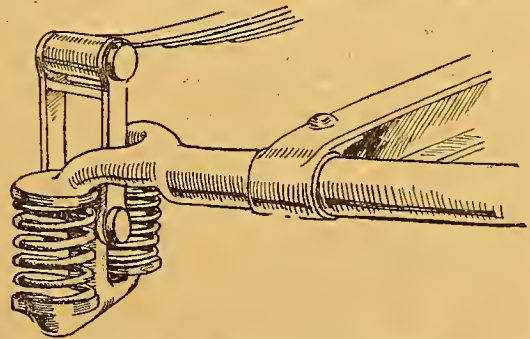
Details of the automatic carburettor.

The springing has received special attention, and the machine is carried throughout on long semi-elliptic springs, the rear pair being assisted by auxiliary coil springs. As will be noted from the plan view, the channel steel frame is narrow, thus providing a wide steering lock, and is upswept over the rear axle. The



The twin-cylinder vertical water-cooled engine and gear box unit.

cross-members are all tubular. A neat honeycomb radiator of pleasing shape is placed at the front of the chassis, and cooling is carried out on the thermosiphon principle. The steering corrections are on the usual Ackerman system, but the steering is direct—



Method of springing the rear of frame.

that is to say, no gearing is used. This system has proved perfectly satisfactory, and has the advantage of being very simple.

### Two Internal Expanding Brakes.

Both foot and hand brakes are of the internal expanding type, and operate side by side in drums on the rear wheels. The rear axle casing has an accessible oil filler placed at such a height that it is impossible to overfill the box.

Both petrol and oil tanks are neatly concealed in the dashboard, and the lubrication is by gravity drip

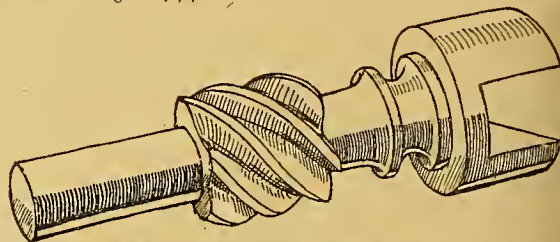


**The New Perry —**

feed to the crank case, whence it is splashed to all bearings. Sankey detachable steel wheels are fitted throughout and shod with 700 x 80 mm. tyres. Our run in the experimental machine convinced us of its smoothness and flexibility, and the machine was quiet and capable of surmounting quite fair hills on top speed. Altogether we were very favourably impressed with the new Perry.

Some of our readers may recognise the above as a description of the vehicle illustrated in our last issue which at the time had to be nameless. The wheelbase

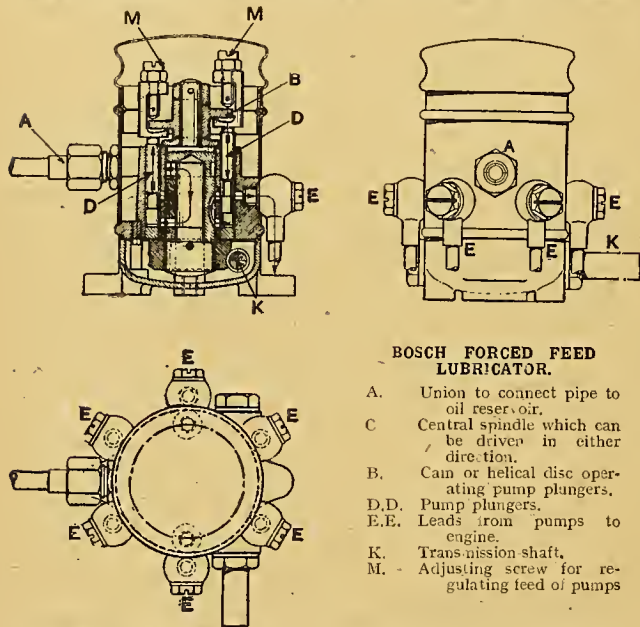
of this little vehicle has been fixed at 7ft. 6in., and the track at 3ft. 7 3/4 in.



Worm drive and universal joint on Perry.

**NEW MECHANICAL LUBRICATOR.**

Now that mechanical lubrication is engaging the serious attention of motor cycle manufacturers, the fact that the Bosch Magneto Co. have brought out a pressure fed lubrication system for motor cycles is an item of extreme



**BOSCH FORCED FEED LUBRICATOR.**

- A. Union to connect pipe to oil reservoir.
- C. Central spindle which can be driven in either direction.
- B. Cam or helical disc operating pump plungers.
- D.D. Pump plungers.
- E.E. Leads from pumps to engine.
- K. Transmission shaft.
- M. Adjusting screw for regulating feed of pumps.

interest. The Bosch device consists of a cylindrical metal casing, the top of which is easily detachable, containing a series of six plunger pumps, each provided with an outlet conveying the oil to any desired portion of the machine. Oil enters at the union A from the main tank, and the central spindle C is worm-driven off the shaft K. As it turns it carries with it the cam B, which in turn operates the plungers D.D. of the pumps (two only are shown in the section). These pumps, by means of the plungers D, force the oil through the various exits E. The whole mechanism, of course, runs in oil, has no springs, and there is nothing to get out of order. Although considerable pressure is exercised, we understand that there is no danger of the pipes bursting. The lubricator may be driven in either direction. It will be noticed that the length of throw of each pump can be altered by means of the adjusting screw M.

The Bosch Co. have a N.S.U. motor bicycle at their works on which the experiments have been conducted, and it may be taken for granted that these have proved satisfactory, otherwise the device would not have been marketed. No suggestions have been made so far as to the position the pump should occupy, but it is so compact that it might easily be placed in front of the crank case when the magneto is behind, and *vice versa*. The method of transmission from the engine is the same as a magneto drive. The power absorbed to drive the pump is not stated, but in the case of medium-powered motor cycle engines any disadvantage in this direction should certainly be outweighed by the superior lubrication.

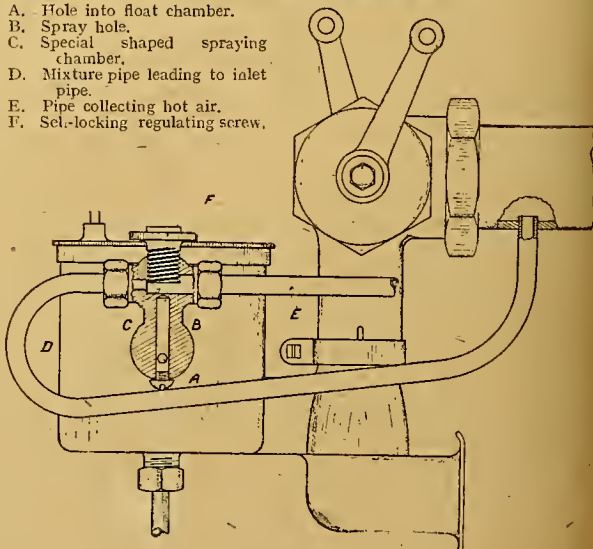
**THE BADCOCK BY-PASS.**

Mr. F. Badcock, 110, Woodville Road, Thornton Heath, has lately invented a by-pass for motor cycle carburetters. It is clearly obvious, (1) that if the relative size of jet and choke tube are suitable for all-round purposes there is so little air passing round the jet, relative to the size of the choke tube, at slow speeds that insufficient petrol is drawn through; (2) that when the throttle is in the nearly closed position there is a considerable vacuum in the inlet pipe and ports, which will draw a quantity of air through the valve guides and any leaky joints in inlet pipe without drawing in any corresponding amount of petrol.

In the case of the by-pass we are describing, advantage is taken of the vacuum to draw a small quantity of air through a minute choke tube of special construction, which causes a very strong mixture. The quantity necessary to counteract the defects mentioned is regulated by a self-locking thumb-screw, which can be adjusted while travelling. This is shown in the illustration. Once adjusted the action is automatic, for as the throttle is opened and there is an increased rush of air past the jet, so there is a decrease of vacuum in the inlet pipe, causing less of the strong mixture to be drawn through the by-pass. This balancing action makes the carburetter entirely automatic for slow and moderate speeds, especially if a larger choke tube be fitted, and the extra air will only be wanted when a high speed is obtained. The illustration shows the by-pass attached to the float chamber of an ordinary carburetter. Petrol flows into it through the hole A, which is so fixed that the level of the petrol is just below the jet. The pipe D conveys the mixture to the inlet pipe above the throttle, and the pipe E collects the hot air from the radiating fins near the exhaust valve. A spring not shown renders the adjusting screw self-locking. The device can be easily fitted and is inexpensive; it thus provides a means of converting a carburetter of ordinary type into an automatic one, at least at slow speeds.

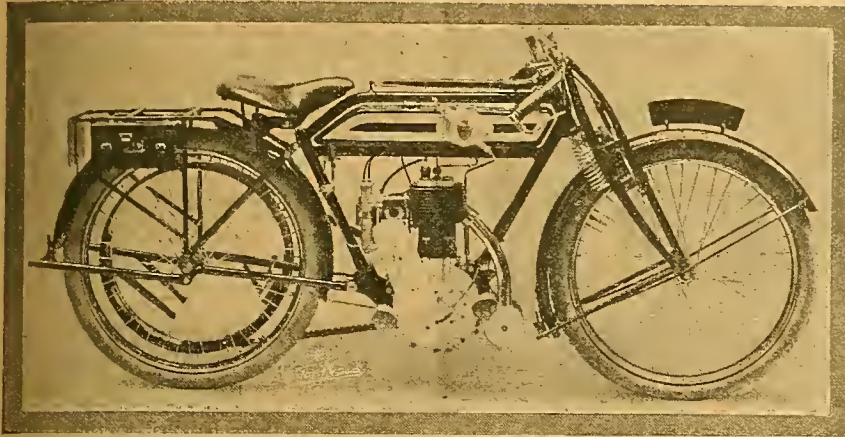
**BADCOCK BY-PASS CARBURETTER.**

- A. Hole into float chamber.
- B. Spray hole.
- C. Special shaped spraying chamber.
- D. Mixture pipe leading to inlet pipe.
- E. Pipe collecting hot air.
- F. Self-locking regulating screw.

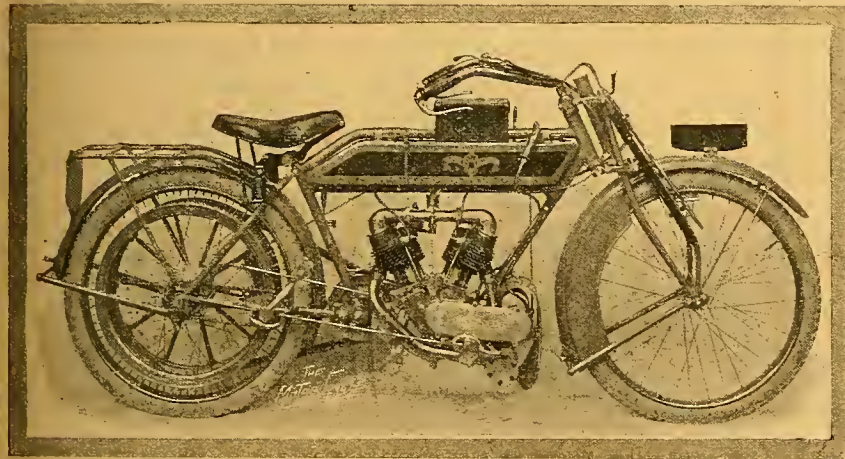




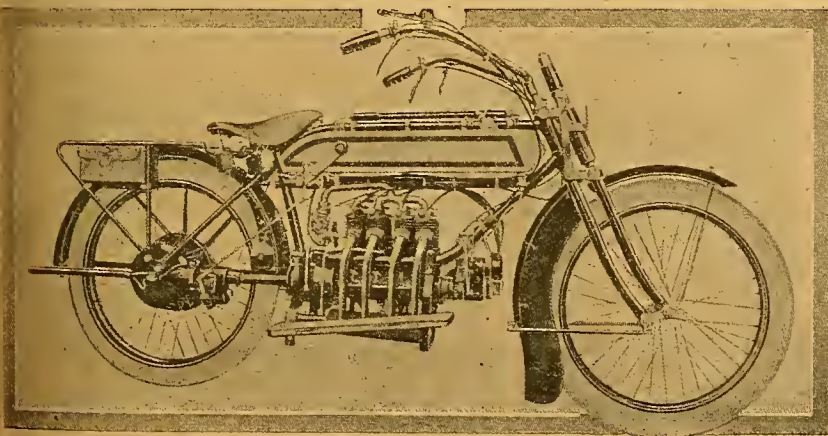
# One, Two, and Four Cylinders.



1913 model Tourist Trophy Rover.



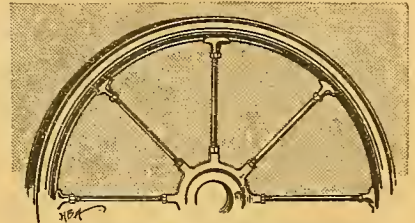
An entirely new Matchless. This model is a 3 h.p. twin. It has a new type J.A.P. engine with overhead inlet valves, chain and belt drive and Armstrong hub gear.



Valve side of the 1913 model four-cylinder shaft-driven F.N. showing two-speed gear and the new type of operating lever

## MOTO-REVE.

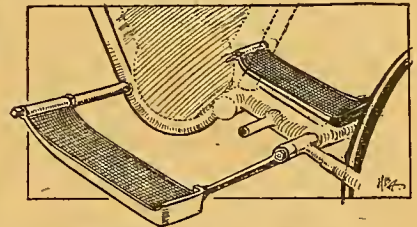
We recently inspected the new model Moto-Réves in the company's new works near Wembley. Quite a new model will be the 4 h.p. twin 63 x 80 mm., provided with overhead valves. It is chain-driven, and provided with a two-speed gear of the internal expanding clutch type. The mudguarding is excellent, while Druid forks, a pan saddle, and comfortable footrests are provided.



Belt rim on Moto-Réve two-speed gear, showing adjustable spokes for truing up rim.

The 3 h.p. twin is a somewhat similar engine, but the machine which it propels possesses a light and efficient two-speed epicyclic hub gear manufactured at the Moto-Réve works. This hub only adds 5 lbs. to the total weight of the machine. The belt rim is attached to the wheel by spokes, which permit of it being easily trued up. This engine has a bore and stroke of 53 x 77 mm.

In addition, the company will be selling a 2½ h.p. single, 67 x 85 mm., and the 2 h.p., a genuine lightweight, 62 x 85 mm., fitted with two-speed gear, which is an inexpensive model, and should be good value.



Footboards fitted to 3 h.p. Moto-Réve.

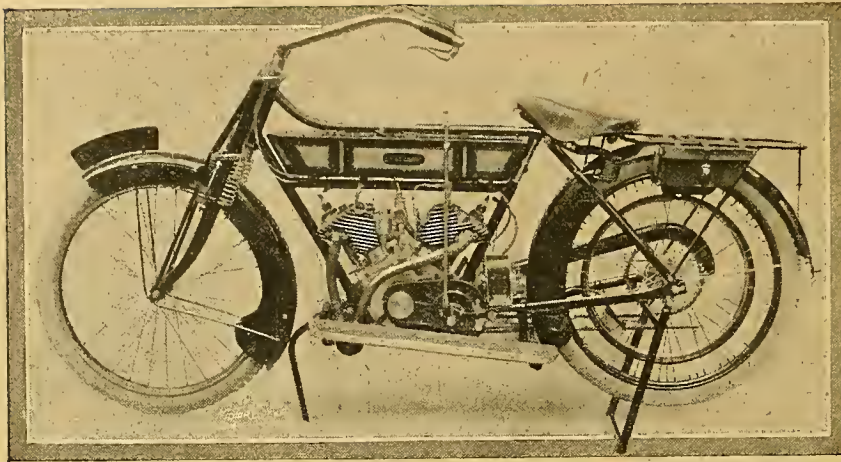
All the machines have loop frames except the 2½ h.p., and all are provided with overhead valves except the 2 h.p. They will be exhibited on Stand 117.

The lubrication of the 4 h.p. models is by the Rotherham pressure drip feed lubricator. The Moto-Réve engines are splendid pieces of workmanship, and are well finished. Particular attention is paid to the carrying of tools and spares, and spacious bags fitted to the top tube are supplied with each machine.

## J.A.P.

The following new type J.A.P. engines (J. A. Prestwich and Co., Tottenham) will be on exhibition at Olympia: 4 h.p. side by side valve and overhead inlet valve engines with enclosed exhaust lifter; 4½ h.p. side valve, 90 x 93 mm. engine, also with enclosed lifter and heavy flywheels; the 70 x 64½ mm. twin side valve engine; and the 70 x 76 mm. side valve twin, fitted with heavy flywheels. All the above engines will have force feed lubrication.

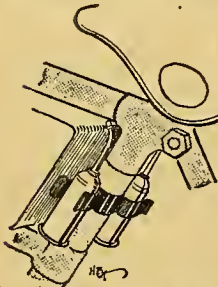




1913 model of the 3½ h.p. tw.n-cylinder Motosacoche.

## MOTOSACOCHE.

On Monday last we were privileged to see the first 1913 3½ h.p. Motosacoche to be completed. Outwardly it strongly resembles the 2½ h.p. model. The engine is a beautiful piece of work and excellently finished. The dimensions are 64×77



Method of carrying oil and paraffin cans on Motosacoche.

mm., 496 c.c. The tank holds 1½ gallons of petrol and three pints of lubricating oil. As in the 2½ h.p. model the accompanying sketch shows that the usual compression taps are placed half-way down the cylinder, and when the paraffin or petrol is injected, it reaches the pistons and frees the ring, and none of it is deposited on the combustion head to be rapidly burnt away and deposit carbon. The valve tappet guides are screwed into an extension of the plate forming that part of the cylinder casting, which is bolted to the crank case so that nothing is screwed into the aluminium. Both the 3½ h.p. and the 2½ h.p. are provided with excellent mudguards fitted with efficient side shields. The transmission is by chains, the gear change being effected by means of internal expanding rings inside the sprocket. A friction device is provided on the main shaft, and there is a rubber buffer type shock absorber in the rear hub, with the result that the chain drive is practically as smooth as a belt. The magneto is placed behind the crank case and is accessible, well-protected, and easily dismounted. Either an Amac or Dufaix carburetter is fitted at the option of the purchaser. Hutchinson tyres are standard. The gears are 5½ and 8 to 1 on the 2½ h.p. machine.

### A 6 h.p. Motosacoche.

In addition to the 2½ h.p., the successful single-cylinder lightweight model, which remains unaltered, will be shown, and the 6 h.p. engine, which is a genuine novelty. This engine is 72×90 mm., 742

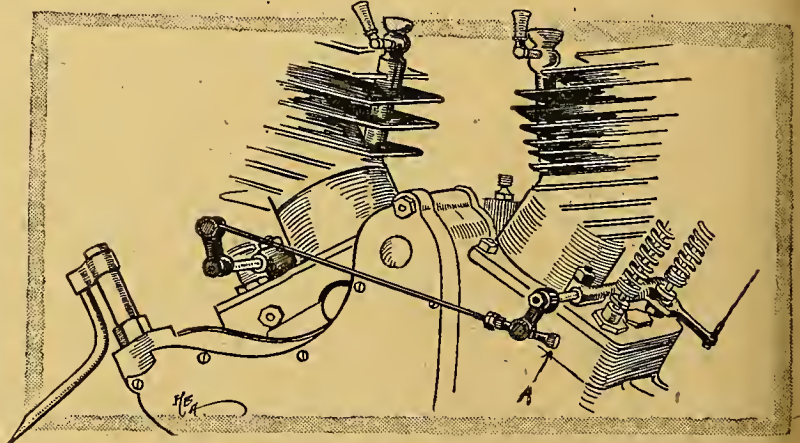
c.c., intended specially for sidecar and cyclecar work. It has enclosed valves which are of the overhead type, the case communicating with the crank case, for the purpose of lubrication. The oil is drawn up from the crank case by suction lubricates the rockers on the way, and returns to the crank case.

The splendid work put into the Motosacoche engines should be closely noted. Mr. de Lissa informs us that his patent valve was recently tested at the Motosacoche works in Geneva. The engine on which it was tested gave an extra ½ h.p. for four hours, and at the end of the period was so cool that it would not ignite a wax match.

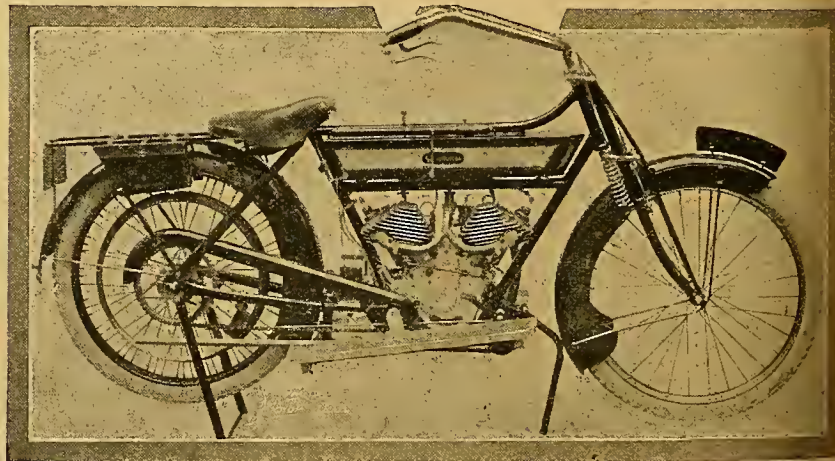
## BARIMAR CYCLECARS.

The Parent cyclecar illustrated and described in the last issue, page 1319, will in future be known as the Barimar cyclecar, and will be handled in this country by Barimar, Ltd., 10, Poland Street, W.

### FEATURES OF THE NEW MOTOSACOCHE.



The 1913 3½ h.p. Motosacoche, showing position of injection tap and exhaust lifter mechanism, which allows the front valve to be lifted before the rear, if desired, by means of the adjustment screw at A.



Chain side of the new 496 c.c. twin-cylinder Motosacoche.

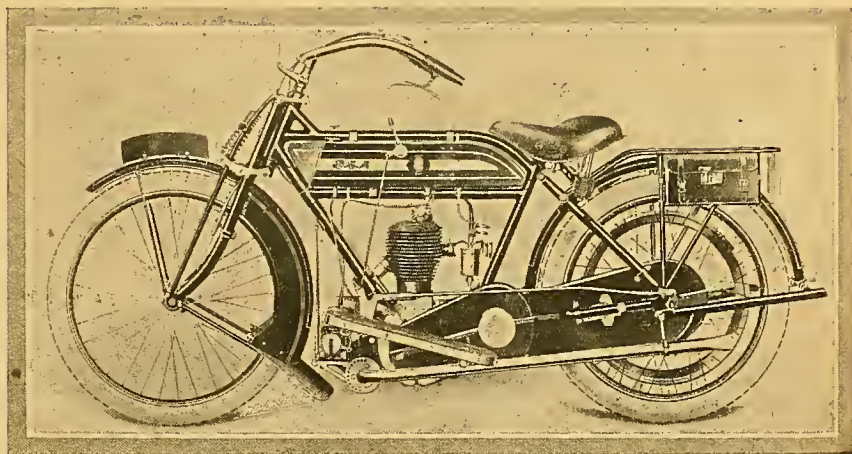


## B.S.A. 1913 MODELS.

New design engine with off-set cylinder. Kick-starter. Enclosed chain-drive optional.

Taking the  $3\frac{1}{2}$  h.p. 85x88 mm. engine as a standard, the B.S.A. Company have worked on several variations in transmission till they can offer a wide selection to the prospective buyer. They will show at Olympia a T.T. type with single-gear and belt drive, a tourist type with the B.S.A. free engine, a two-speed model with the B.S.A. two-speed hub and belt drive, and a two-speed model with the same hub, but chain driven. It is this last type, which is the most interesting, as it is a considerable deviation from the firm's usual practice, and has, therefore, been selected for a detailed description. The B.S.A. engine has been redesigned, and is now fitted with a very clean pear-shaped cylinder which is offset 10 mm. to the crank pin. The valves have been somewhat increased in diameter, and the ports improved in general design.

The tappet guides are fitted with very neat dust caps, which prevent the ingress of grit and also have a deadening effect on the tappets, which helps to reduce noise. Flat section valve springs will be used for 1913. The flywheels are now made of steel, as this has been found more satisfactory than cast iron. The dome-topped piston remains much the same as last year; it is a light piece of work, beautifully finished. On the crank-shaft is mounted the driving sprocket, which is driven through the medium of a simple spring drive. This consists of a stand anchor piece which carries three compression and three buffer springs, and through them drives a plate to which the sprocket is fixed. A short chain drives a counter-shaft, which is mounted eccentrically for adjustment purposes, and carries a clever out unusual form of kick starter. This works on the well-known B.S.A. free wheel system; a train of epicyclic gears is also interposed, so that, though the starter is kicked down backwards, a forward motion is imparted to the engine. This sounds somewhat complicated, but it is in reality a very neat and simple piece of work. From the counter-shaft the final drive is by a second chain to a sprocket mounted on the hub two-speed gear. This hub has proved so satisfactory that little change will be made in



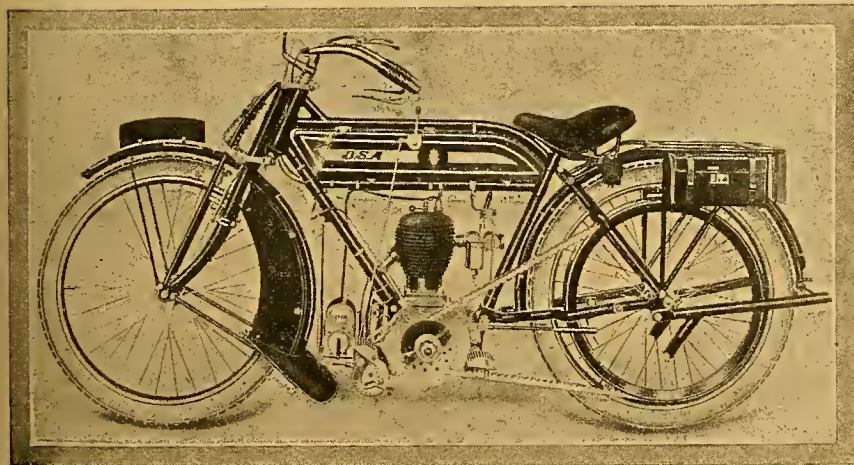
The B.S.A. motor cycles may now be had with enclosed chain drive and two speed hub gear.

it, except that the balls will be carried in such a manner that they do not drop out should the hub be dismantled. Both chains are thoroughly protected by a single case, which is made in two pieces and is readily detachable. This model is fitted with neat footboards, the right one being pivoted so as to be swung out of the way for starting purposes. A new silencer is fitted in which the exhaust gas passes through a cone drilled with a number of holes. After this, part escapes through small holes in the silencer end and part passes out through a long exhaust pipe to the rear. In belt-driven models this pipe is cut off in front of the rear wheel and passes across to the off side of the machine. The frame remains practically unaltered, but a neat front wheel stand has been added which also forms the front mudguard stays.

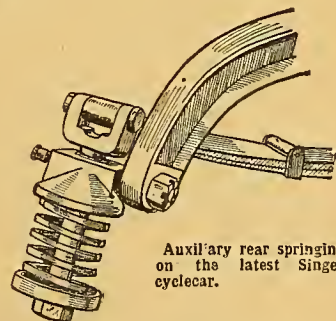
### Other Details.

It will be remembered that the B.S.A. is one of the few firms which turn out a generator bracket integral with the front forks, a small point, but one of great convenience. The new B.S.A. carburetter,

described in our pages recently, is, of course, fitted to all models. Either a tapless pump or Best and Lloyd semi-automatic lubricator may be had at option. The footrests on the belt-driven model are adjustable in all directions, and are covered with neat rubber pads. The front wheel hub is of the knockout type, and may be removed by simply detaching one bolt. The pedal operating the two-speed gear has been much improved, and now works on a notched quadrant, a second pedal, conveniently placed, raising the catch from the notch when it is necessary to change down. A neat enclosed spring is fitted to the coupling rod which helps to hold in the low gear. With the exception of transmission details, the models resemble each other so closely that descriptions are unnecessary; but we may add that the T.T. model will have a rather longer wheelbase than usual, and that the handle-bars have been shortened on all models. The B.S.A. new models possess such originality that they are sure to be examined with interest at Olympia.



$3\frac{1}{2}$  h.p. 1913 model T.T. B.S.A. with off-set engine.

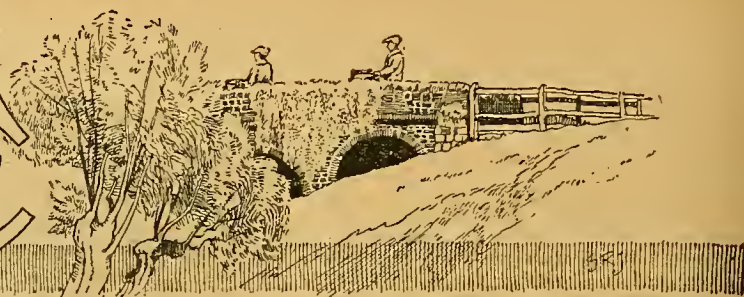
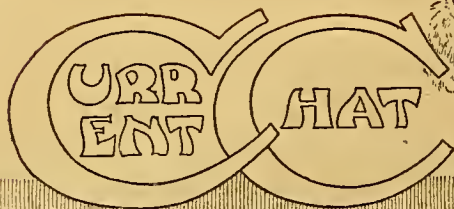


Auxiliary rear springing on the latest Singer cyclecar.

### ANOTHER NEW CYCLECAR

The Croydon Central Motor Co., High Street, Croydon, inform us that they are now engaged in building a cyclecar with friction drive, giving four speeds and reverse, propelled by an 8 h.p. J.A.P. engine





### TIME TO LIGHT LAMPS.

Nov. 21st	...	5.2 p.m.
" 23rd	...	5.0 p.m.
" 25th	...	4.58 p.m.
" 27th	...	4.56 p.m.

### Red Rear Lights on Vehicles.

The Surrey County Council passed a byelaw last week making it compulsory for vehicles to carry either red rear lights or reflex lights.

### News.

It is probable that a Dursley-Pedersen four-cylinder air-cooled cyclecar will make its appearance at Olympia next week. Some weeks ago we referred vaguely to experiments which were being made with the vehicle.

### Club for Brighton and District.

A meeting has been called of Brighton and district motor cyclists at 190, King's Road Arches, for 8 p.m. on Wednesday, December 4th, with the view of forming a motor cycle club in connection with the Brighton Cyclist Club. Communications should be sent to Mr. George White at the above address.

### Educating the Public by Cinematograph.

A private exhibition of a film depicting London traffic conditions will be given at the next council meeting of the R.I.A. This Association is considering the possibilities of the cinematograph for (1) educating the general public how to avoid common traffic dangers, and (2) demonstrating to the authorities cases of needless traffic congestion, dangers, etc.

### A.C.U. Badges.

After November 26th the Auto Cycle Union badge will be sold at 3s. instead of 6s., as hitherto. We are glad to say that the artistic design has not been altered in any way. The badge is made to fit the front mudguard extension, the handle-bar, or to attach to the top of the lamp, where undoubtedly it is most conspicuous.

### International Federation of Motor Cycle Clubs.

At the meeting on Thursday of Show week, called to re-found the I.F.M.C., Mr. Mervyn O'Gorman has agreed to take the chair. The English delegates are Messrs. E. M. P. Boileau, G. F. Sharp, L. Meyrick-Jones, and T. W. Loughborough. The Federation of American Motor Cyclists will be represented by Mr. W. H. Wells. Messrs. Longemare and Fenton will represent France, there will be a representative from Denmark, while Belgium will have four representatives—Baron Northomb, M. Fagard, Emile de Beukelaer, and M. Marchant.

### Midland Trial Results.

The results of the reliability trial organised by the Sutton Coldfield A.C. have now been issued. H. G. Dixon (3½ h.p. New Hudson and sc.) carries off the Sutton Cup and gold medal as well as the first prize for best performance on a sidecar; 2, A. D. Arter (James sc.); 3, W. B. Gibb (2½ Douglas). All the above accomplished a non-stop run and gained the maximum of 100 marks. The first amateur is R. H. Edwards (Triumph), who also secures the prize for best performance on a single-gear machine. The cyclecar prize was won by G. Bryant (8 h.p. P.M.C. motorette).

FUTURE EVENTS	
Nov. 25-30.	MOTOR CYCLE SHOW AT OLYMPIA.
" 27.	Meeting of Club Secretaries at Olympia.
" 28.	I.F.M.C. Meeting at Olympia.
Dec. 7.	M.C.C. Annual Dinner and Prize Distribution.
" ..	A.C.U. Open Silencer Trial.
" 27-28.	M.C.C. Annual Winter Run.

### Godfrey-Garrett Case.

Garrett's protest in connection with the announced result of the Hour Race at the B.M.C.R.C. meeting on the 9th inst. was considered on Monday. After lengthy and careful consideration the committee of the B.M.C.R.C. sitting in full attendance as stewards of the meeting, are of opinion that the evidence brought before them is not sufficient to contradict the judge's decision, and, therefore, the decision of Mr. A. G. Reynolds, deputy judge, stands. They are further of opinion that the method employed on the occasion in question of deciding the winner of a race against time, i.e., by direct observation of the position of the leaders at the exact conclusion of the time and period, is the correct one.

### An Unofficial Sidecar Trial.

A telegram from the Enfield Cycle Co., Ltd., announces a fine run under winter conditions from London to Edinburgh on a 6 h.p. Enfield sidecar. The driver was F. Begley, of the Motor Cycling Club, who intended to make a non-stop engine run throughout, and but for accidentally stopping the engine, his object would have been achieved.

### Cyclecar Hour Record.

Late on Tuesday afternoon last we received a telephone message informing us that the G.W.K. cyclecar had broken the hour record at Brooklands, covering 56 miles 75 yards. The previous best was 55 miles 23 yards.

### SPECIAL FEATURES:

"THE MOTOR CYCLE" BUYERS' GUIDE OF 1913 MODELS.

FORECAST AND GUIDE TO THE SHOW.

A FEW POINTS SIMPLY EXPLAINED.

### British Imports and Exports of Motor Cycles.

In the following tables will be found the value of motor cycles and parts which have been imported and exported by Great Britain during October and during the ten months ended October 31st.

#### IMPORTS.

	Month ended October 31st.	1910.	1911.	1912.
		£	£	£
Motor cycles	...	1,390	1,709	3,157
Parts thereof	...	4,559	3,018	38,433
Total	...	£5,949	£4,727	£41,590

#### Ten months ended 31st October.

	1910.	1911.	1912.
	£	£	£
Motor cycles	40,655	37,739	38,256
Parts thereof	47,032	54,847	134,862
Total	£87,687	£92,586	£173,118

It will be noticed that for the month of October, 1912, the imports are over nine times the amount of the corresponding month in 1911 (it will be interesting to observe if this huge increase is maintained), while for the ten months of 1912 the amount is not quite double the amount of the same period in 1911.

#### BRITISH EXPORTS.

Month ended 31st October.				
	1910.	1911.	1912.	
	£	£	£	
Motor cycles	15,906	33,020	68,130	
Parts thereof	2,847	7,844	26,195	
Total	<u>£18,753</u>	<u>£40,864</u>	<u>£94,325</u>	

It will be seen that the exports for October, 1911, are less than half the amount for the corresponding month this year.

#### Ten months ended 31st October.

	1910.	1911.	1912.
	£	£	£
Motor cycles	93,346	198,293	420,793
Parts thereof	32,063	56,568	151,267
Total	£125,409	£254,861	£572,065

Again the exports for 1912 are over double the amount of 1911.

The above tables show that the exports for 1912 are over three times the amount of the imports, or £572,065 exports, against £173,118 imports.



**77,855 Copies of "The Motor Cycle."**

The circulation of this journal continues to increase at a rapid rate. No less than 77,855 copies were printed last week. In the corresponding week of last year the number was 65,000, and in the same week of 1910 51,130.

**Olympia.**

Hundreds of motor cyclists visited the Car Show at Olympia last week, the half-dozen cyclecars exhibited attracting much attention. By the way, the total attendance at Olympia approached a quarter of a million.

**Pity the Poor Editor!**

We naturally receive many curious enquiries among the applications for information received at this office, but the latest problem we are asked to solve is as to whether Somebody's system of increasing the height is genuine or not!

**Record Attempts.**

We were glad to see G. E. Stanley out again last week, much better from his attack of quinzies. He told us that he would attempt a number of lightweight records at Brooklands this week on his new 350 c.c. single-cylinder Singer machine if he felt well enough.

**Dates of 1913 Events.**

A meeting of club secretaries will be held in the concert room at Olympia on Wednesday, the 27th inst., at 4.30 p.m. The meeting has been convened in order to arrange dates for open competitions to be held during next year, in order to prevent clashing as far as possible.

**London to Constantinople.**

After the present war in the Balkans it is probable that at least one great main road will be constructed right through to Constantinople. It will be remembered that the two motor cyclists who left London last August to ride to the Turkish capital succeeded in attaining their object. Previous to this Mr. R. L. Jefferson was the first motorist to get through by road. The motor cyclists are Auto Cycle Union members, and were, of course, aided by the Union in the accomplishment of their object.

**A.C.U. Note.**

The A.C.U. has decided upon special insurance rates for cyclecars. Previously, insurance companies have quoted light car rates for these vehicles.

**Frank Philipp Progressing Favourably.**

We are pleased to say that Frank Philipp, the well known Scott rider and secretary of the Scott Engineering Co., is progressing favourably. He was allowed to write for the first time last week, and informs us that the fractures sustained in the accident are all going on as well as possible.

**French Hour Record.**

Our contemporary, *L'Aero*, says that a French rider, named Lombard, will make an attempt on the 500 c.c. French hour record probably before this issue is in the hands of our readers. He rides an Albatros, and the attempt is to be made on the Parc des Princes Track, Paris.

**Show Excursions.**

The Motor Cycle Manufacturers' Union have arranged for excursion trains at cheap fares to run from practically every town in the kingdom to London for the Cycle and Motor Cycle Show at Olympia on November 25th to the 30th inclusive. Readers should enquire for particulars of these excursions at their nearest railway station. On another page we give some information regarding the best train and bus routes from the chief London railway termini to Olympia. The exhibition will open at 10 a.m. each day and close at 10 p.m. Arrangements have also been made with the L. and N.W. Railway Co. to run a special through train from the Midlands direct to Olympia on Monday morning, the 25th inst., to arrive ten minutes before opening time. This train will leave the undermentioned L. and N.W.R. stations as follows: Wolverhampton 6.45, Dudley 6.25, Dudley Port 6.55, Birmingham 7.25, Coventry 7.55, Willesden 9.40, and will arrive Addison Road at 9.50. There will be no intermediate stops. Breakfast cars will be provided, but seats for breakfast should be ordered in advance from Mr. Alfred Bednell, secretary, 13, Queen Street, Coventry.

**A Stolen Machine.**

1910 Bradbury, registration V 743, no pedalling gear, tank dented, Michelin and Dunlop tyres. Information regarding it should be addressed to "W.J.H." c/o the Editor.

**Belated Particulars for the Buyers' Guide.**

Service,  $3\frac{1}{2}$  h.p. J.A.P. or Precision, Armstrong three-speed hub, 53 guineas; 6 h.p. sidecar model, J.A.P. or Precision; both machines are fitted with B. and B. carburetter, Dunlop or Hutchinson tyres. Connaught two-stroke, 3 h.p., 292 c.c., Amac,  $\frac{3}{4}$  in. belt, Michelin tyres, Armstrong or Sturmey-Archer, weight 115 lbs., £33 10s., or £44 with three-speed gear.

**Paris-Nice-Monte Carlo.**

Our contemporary, *L'Aero*, is organising a race for motor cycles from Paris to Nice and Monte Carlo from February 1st to 5th next. The organisers anticipate that this event will be very successful, particularly as the competitors will arrive at Nice while the Carnival is in full swing. The organisers expect that several British competitors will take part.

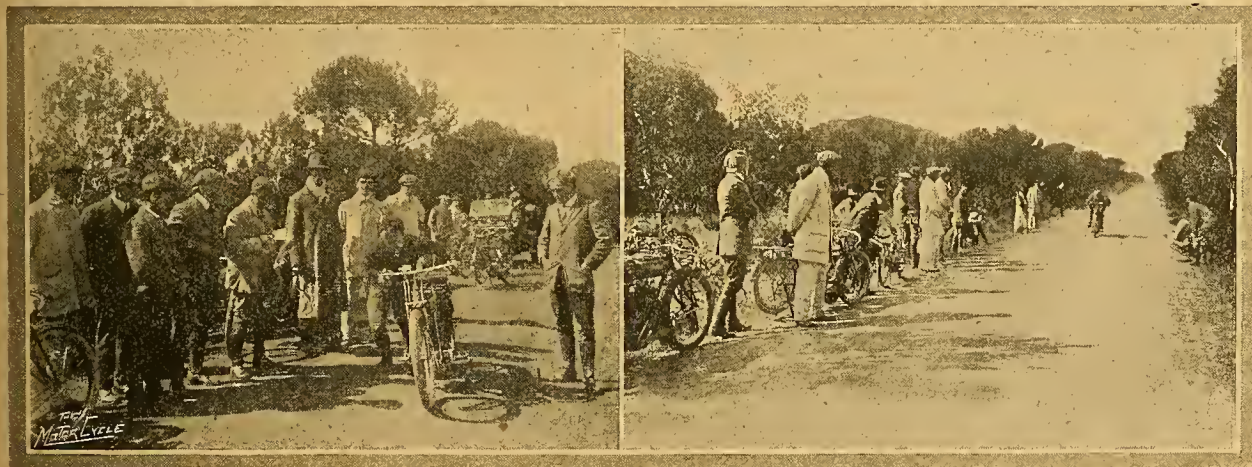
Entry forms and further particulars can be obtained from *L'Aero* offices, 23, Boulevard des Italiens, Paris.

**First Speed Trial at the Cape.**

A very successful speed competition took place on the 26th ult., organised by the Cape Peninsula Motor Cycle Club. Riders had to do a trial run, and in the second attempt to improve upon the first made time, the man nearest to 6% improvement to be the winner. Distance, one and a quarter miles. Results:

Rider and machine.	Time in secs.	Per-centage in improvement.
1. H. S. Olive (7 Indian) ...	77 $\frac{3}{4}$	5.61%
2. J. Ockleford (3 $\frac{1}{2}$ Rudge)...	92 $\frac{1}{2}$	4.55%
3. A. Douglas (3 $\frac{1}{2}$ Triumph) 83 $\frac{1}{2}$		2.11%

A very fine stretch of road had been discovered, and in the shade of the abundant foliage motorists gathered for the first speed contest of the C.P.M.C.C. Thornton (3 $\frac{1}{2}$  h.p. T.T. B.S.A.) made the fastest time of the day—70 $\frac{1}{2}$ s. The only sidecarist to compete was O. J. Prillewitz (6 h.p. Enfield), who gained fifth position.

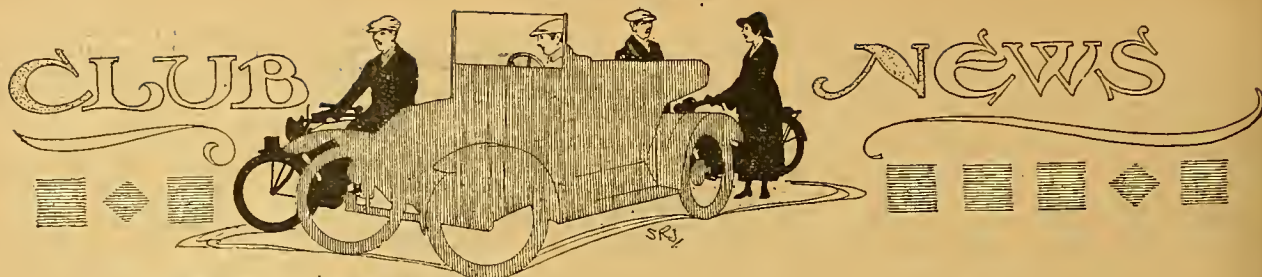


FIRST SPEED CONTEST AT THE CAPE, ORGANISED BY THE CAPE PENINSULA M.C.C.

Great interest was shown in J. Thornton (3 $\frac{1}{2}$  h.p. T.T. B.S.A.), who made the fastest time of the day.

J. Ockleford (3 $\frac{1}{2}$  Rudge) finishing well up to time. He secured the second prize.





### Crossgates and District M.C.C.

The club will hold their first annual whist drive and dance at the Recreation Hall, Crossgates, on the 29th inst.

### Herts County A. and Ae.C.

The fourth quarterly trial will take place on Saturday, December 14th. The route will be very similar to that of the third trial, and the hon. secretary for the event will be Mr. G. S. Carter, Aplins Close, Harpenden, Herts.

### Dewsbury M.C.C.

A reliability run was held on the 3rd inst., the route being *via* Leeds, Yeadon, Blubberhouses, Harrogate, Harwood, and home. The following qualified for prizes:

	Marks lost.
1. H. Hainsworth (3½ Triumph) ... ..	4
2. J. Rispin (3½ Bradbury) ... ..	7
3. S. Naylor (3½ B.S.A.) ... ..	20

HUMBERETTE CLIMBING RED BANK, GRASMERE.



Last week we referred to a week-end trip of 500 miles to the Lake District, when the Humberette we observed succeeded in climbing Tow Top, Gammers How, and Red Bank, three notorious test hills in Lakeland.

### Mersey M.C.

The annual dinner and prize distribution will be held on the 22nd inst. at 6.30 p.m. After the dinner the annual general meeting will be held, to be followed by a smoking concert at St. George's Restaurant, Redcross Street, Liverpool.

### Lincolnshire A.C. (Motor Cycle Section).

A petrol consumption trial was held recently. Result on formula: 1, B. Rhodes (6 Zenith); 2, J. E. Harston (3½ Champion-Jap); 3, J. H. Brookes (3½ Rudge).

### Cheltenham M.C.C.

A speed-judging contest was held on the Cotswolds over a circular course. Result: 1, A. G. Meats (B.S.A.); 2, G. Nash (Triumph); 3, A. K. Lewis (Triumph).

A demonstration of the Veloce engine will be given on December 3rd, at the Belle Vue Hotel.

### Streatham and District M.C.C.

The winter programme has been sent round to the individual members of the club. Attention is called to the fact that a club room is now provided at headquarters, and the club evenings are Wednesdays and Fridays. The first of several very interesting lectures and discussions was held on the 15th inst.

### Workshop and District M.C.C.

The first annual reliability trial took place on the 13th ult., when twenty-four competitors took part and six tied for the first place, losing no marks. A re-run resulted as follows: 1, R. Bagshaw (6 Matchless and sidecar); 2, T. W. Barlow (5 A.J.S. and sidecar); 3, A. H. Imber (Rudge) and G. J. Burnett (Rudge).

### Motor Cycling Club.

The annual dinner and presentation of prizes will take place on December 7th (Saturday) at the Adelaide Gallery (Gatti's Restaurant) at 6 p.m. The president, Mr. Chas. Jarrott, will be in the chair, and Mrs. Jarrott has kindly consented to present the prizes. Ladies are cordially invited. An excellent programme of music is being arranged, and it is hoped that all members who can possibly attend will do so. Tickets, 7s. 6d. each, can be obtained from the secretary, Mr. Southcomb May, 34, Gower Place, W.C.

### Cyclecar Club.

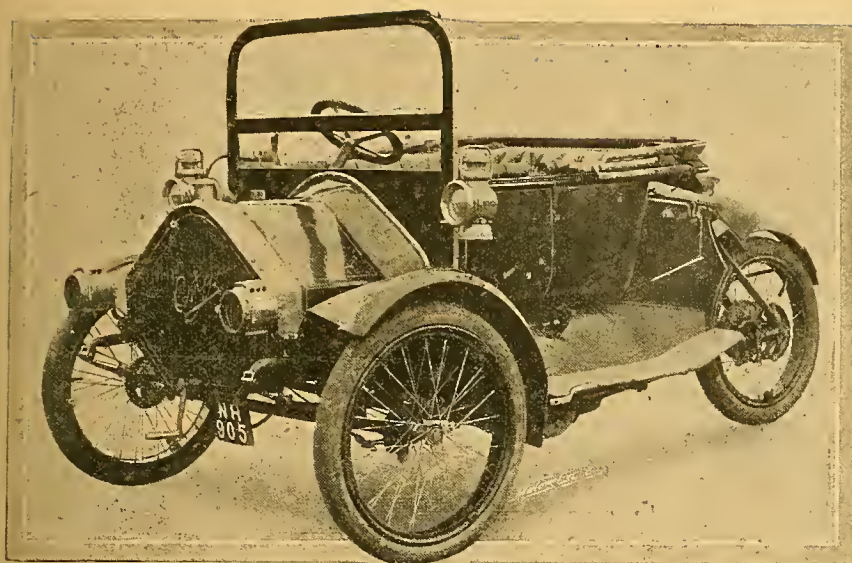
The second meeting of the above club was held at the Connaught Rooms, Great Queen Street, at 8 p.m. on the 6th inst. Mr. E. Parnacott occupied the chair. The business of the meeting was to elect officers, fix subscription, etc. It was decided that the committee should consist of nine persons, of whom five should be unconnected with the manufacture or sale of cyclecars. The joint hon. secretaries are Mr. F. Thomas, 172, Belsize Road, N.W., and Mr. Osmond Hill, 19, Elsworth Road, N.W., from whom further particulars may be obtained. The subscription was fixed at a guinea with an entrance fee of 5s.

### Leicester County M.C.C.

Result of reliability trial held October 31st. The course was most severe, being one of the most strenuous in the county. There were four hills with gradients of about 1 in 4 and three watersplashes. No member made a non-stop, and the only competitor to negotiate the watersplashes was Harold Petty:

Rider and machine.	Marks lost
1. A. L. Barker (3½ T.T. Singer) ... ..	176
2. Harold Petty (3½ Singer) ... ..	191
3. E. Folwell (3½ T.T. B.S.A.) ... ..	206
SIDE CAR CLASS.	
1. N. Mee (8 Matchless) ... ..	201





Complete model of the 1913 Eric sociable.

### THE ERIC.

The Eric sociable, which is made by the P. and C. Syndicate, and will be exhibited on Stand 45, has been considerably improved. It is propelled by a two-cylinder horizontally opposed water-cooled engine, the thermo-syphon system being used, and the radiator being immediately in front of the engine and situated under the driver's seat. The valves are inclined, the cams working directly against the valve tappets. The magneto is placed on the crank case between the two cylinders, and is chain-driven. An Amac carburettor is fitted.

The lubrication is effected in the following manner: There is a sump in the crank base into which oil is poured, when the two pistons come together, the air pressure in the sump forces the oil into the crank chamber through a non-return valve, and while this valve is open, any excess of oil flows back into the sump.

In this manner a constant level of oil is always maintained.

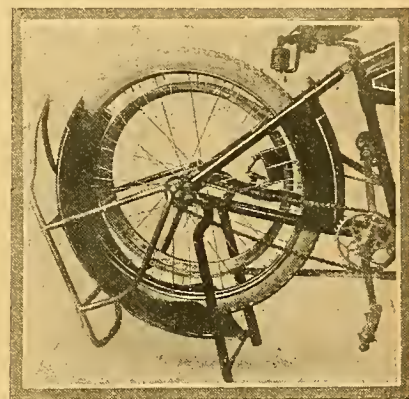
The gear box and crank case are connected by a cylindrical aluminium casing, in which the leather-covered cone clutch is situated. A large inspection orifice is provided in this for enabling the clutch to be adjusted or dressed. To the cylindrical casing the gear box is bolted, which provides three speeds and reverse of the ordinary sliding type. The change is effected through a gate. From gear box to rear wheel the transmission is by cardan-shaft, the final drive being by bevel.

### Rear Springing.

The frame is constructed of heavy gauge tubing, and is suitably trussed where necessary. The back wheel is sprung in a somewhat unusual manner; the triangular portion of the frame, which carries the back wheel, has the cross-bar hinged at the bottom, and on the bar is

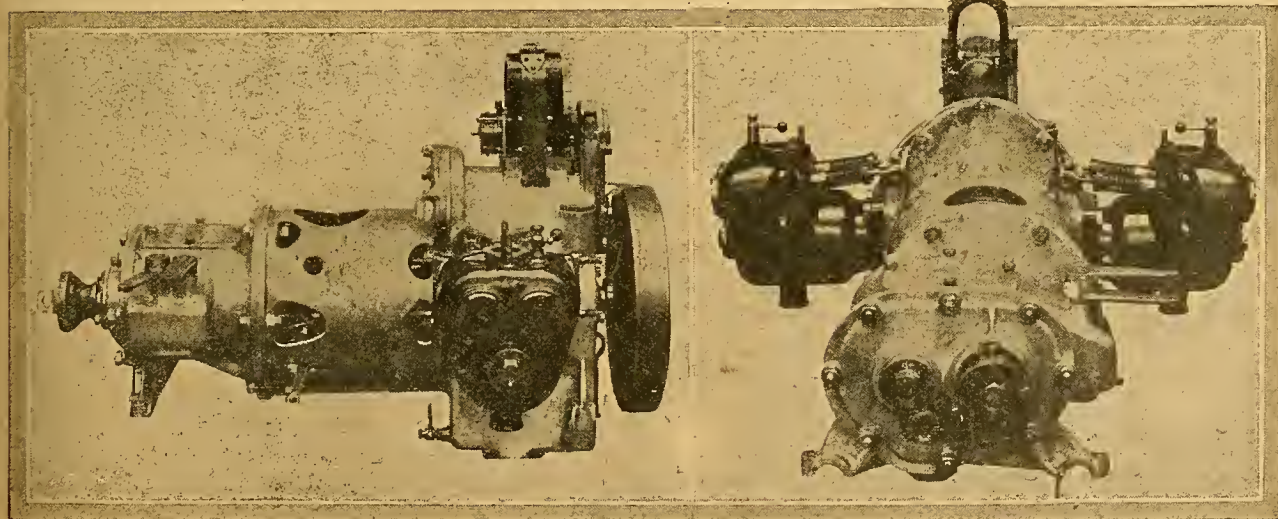
anchored a quarter-elliptical spring, the upper portion of which is attached to the rigid portion of the frame. This allows the back wheel to rise and fall vertically and yet to be sprung in a comfortable manner. The front portion of the frame is supported on half-elliptical springs.

By undoing a nut on the off side of the back wheel spindle the chain stays and back forks may be swung to one side, allowing free access to the tyre. It is interesting to note that the vehicle is provided with detachable rims; these are provided with two bosses each side of the valve hole which engage with corresponding slots in the felloe, while at the opposite side of the rim are two eyes, which register with two similar eyes on the felloe, allowing the tyre rim to be



One of the features of the 1913 New Imperial machines is that the carrier and rear mudguard may be swung down, as shown, to facilitate tyre repairs.

bolted to the felloe. This detachable rim is exceedingly simple. A side hand lever controls the band brake on the rear wheel axle, while a pedal operates the external brake on the gearshaft. The steering is by chain and sprocket, and wires are carried from the chain direct to the steering arm. The extremity of each wire is provided with a coil spring which is held in tension and thus lessens shock and strain on the wire.



The twin-cylinder horizontal engine and gear box of the 1913 Eric sociable.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address

#### Fair Treatment.

Sir,—I have read (Rev.) W. A. Douglas Hamilton's letter in *The Motor Cycle*, dated 14th November, stating the treatment received from Messrs. Douglas Bros., which is decidedly on the generous side. All motorists will be pleased to note this action, and nothing but good business can follow.

My reason for writing you is to state my case fairly in regard to the Rex Motor Co., Coventry. I had the misfortune to break a connecting rod, after the time of guarantee had passed and a distance done exceeding 3,000 miles with heavy sidecar outfit, fitted specially for business purposes, covering the whole of hilly Devon and Cornwall.

My treatment beats the above, inasmuch that I did not pay carriage either way for the engine sent or returned to me, and that is not all, the engine had a real overhaul that made the machine. It has since done many hundreds of miles, without the least thing going wrong, and I am so pleased that I shall certainly see the latest production at the Show. I have no connection with the Rex Co. other than as a satisfied rider. T. D. A. CHAPMAN.

#### Reliability Trials. A Suggestion.

Sir,—In Mr. Davies's admirable "Open Letter" he expresses the hope that prices may be reduced in 1913. I wish to suggest in outline a way in which this could be accomplished. Let future reliability trial awards be given on a basis of actual running costs. All petrol, oils, tyres, and belts used during the trials would be charged for, and to this would be added the initial cost of the bicycle. The grand total would be divided by the mileage of the trials, and on these results prizes would be awarded.

Various classes would be necessary, and the trials would have to be sufficiently severe to eliminate weaklings, but the main result would be that if, say, a very low-priced bicycle could really weather the trials it would win, and down would come all other prices. If, on the other hand, cheap bicycles are dear in the end, we should know it for certain.

Nothing, to my mind, however, is more stupid than the present distribution of endless numbers of gold medals. It would be scarcely less ridiculous to give a gold medal to every competitor who reaches the first control on the first day.

I trust you will find space to print this, and if it evokes a storm of adverse criticism from makers, then it will be certain that we are attacking prices on the right lines.

W. A. JESSOP.

#### Petrol Gauges.

Sir,—I was astonished to see in a contemporary journal last week a description of the old device of a cork float which actuates a hand on a dial on the top of the tank as it rises and falls described as a "new" petrol gauge. It was possibly "new" over thirty years ago when an uncle of mine patented a similar device for paraffin lamps. The cork float cannot begin to rise until the greater part of it is submerged, and, therefore, does not indicate a small quantity, just when an indication would be most useful.

The friction of the cork on its guides and on the central worm together with that of the bearings make the rising and falling of the float very uncertain. It is in this respect worse than the older variety with a wire rising through the top of the tank, and every user of these will remember how he always wondered whether it was indicating properly or not.

I have made several gauges of this type for customers who specially desired them, and know from the experience that, just as the earlier steam boilers started with a prototype of this device, a float, and now universally use a gauge glass, so will history repeat itself and the "fittest" survive for motor cycle tanks. A. C. DAVISON.

#### An Unborn Runabout.

Sir,—Your paper influenced me to start motor cycling many years ago, and later pointed out the advantages of possessing a cyclecar.

Accordingly I purchased one, and have ever since waited patiently for Thursday morning to see what was to be said in favour or otherwise of our runabouts.

"Ixion's" remarks are to the point, but I don't agree with everything he says. As to comfort, you won't find any car more delightful to sit in than a Bedelia, and after a long run you don't feel that awful stiffness that thin people experience after sitting for some time in a car.

Of course, the ideal cyclecar should have side by side seats, no belts, and reasonable comfort. We don't want a small Rolls-Royce. "Ixion" speaks about the price of these vehicles. I entirely agree with him. Manufacturers list their cars at far too high a rate; £100 should buy any cyclecar on the market. And unless these prices come down I'm very much afraid that the boom will break.

I have talked the question over with many people, and they all say, "I should like a cyclecar if the price was right, but I am going to get a 20 h.p. car, which is just as cheap as a cyclecar." No. Let some firm go in for cyclecars exclusively, and turn out a good number per week, so that we can have a decent four-wheeler, that is worth £100, complete with tyres, lamps, bolts, etc., with hood and screen, and not listed at about £130. In my opinion, unless this is done, we will find the small car ousting the cyclecar out of existence.

I enclose my card and sign myself ENTHUSIAST.

Sir,—I am common with most other writers, "Admirer of All" omits from his interesting letter in *The Motor Cycle* of the 7th inst. all reference to a class of would-be cyclecar owners which, personally, I believe to be quite large enough to claim attention from manufacturers. I mean those people who are only deterred from keeping a small pony and cart by the work and trouble which would be involved. An hour and a half spent every day feeding, cleaning, and bedding, and special arrangements when his owner desires to leave home, are a few of the more obvious points in the pony's disfavour. He is quite fast enough. The only service asked of him is to take his owner and wife, or children, to a town, say, eight or ten miles away, to church, or for an afternoon drive, at the most two or three times a week.

Surely this is a need which could be most appropriately met by the cyclecar. Bearing in mind the cost of a pony and cart capable of the work—say £30—it is evident the initial cost of the cyclecar must be substantially below £100, even though it will be cheaper to run. This at once rules out three-speed and reverse gear boxes, water cooling, fancy coachwork, etc., etc., which indeed are not required.

Who will be the first maker to offer the "Junior car" at £50? RUSTICUS.

[The £50 four-wheeler is a long way off. The cheapest passenger machine by far is the motor cycle and sidecar.—Ed.]



# present to you the **BULL** Mileage Competition

JOHN BULL T.T. Covers from the time of purchase to September 30th, 1913, the closing date of the competition.

When this record is completed, and the chart shows the total mileage covered by the competitor from the day of purchase to September 30th, 1913, it must be posted to the manufacturers together with the voting card upon which, judging from his own experience, the competitor must give the spaces provided his estimate of the average mileage as above, and a report as to the condition of his tyre at the time his own record was completed.

The competitor whose estimate is nearest to the actual average mileage, worked out from the whole of the competitors' returns, will receive the prize, and two independent judges will be appointed to proclaim the winner.

Voting cards and mileage charts will only be obtainable on purchase of a JOHN BULL CROSS GROOVE T.T. Cover, either through an agent singly or fitted to complete machines, and every person competing must advise the manufacturers of his intention so to do within the days of purchase, for which purpose a printed postcard will be found attached, with voting card and mileage chart, to every cover.

Now you'd like that Cyclecar, wouldn't you?—then take the first step now, viz.—fill in the Coupon below and post to the manufacturers to-night. In response they'll send you all the details which you ask for together with full particulars of the tyre concerned—the tyre with the compressed rubber tread—the tread that means more mileage.

For The Leicester Rubber Co.,

**JOHN BULL.**

**To The LEICESTER RUBBER Co.,  
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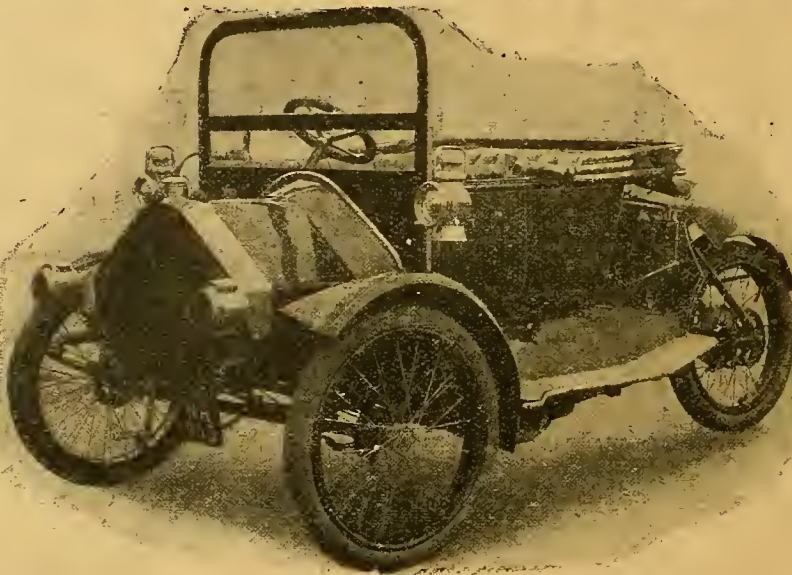
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Chassis only with wheels,

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Tax only £1.



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PRICE,

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### Waterproofing for Motor Cycles.

Sir,—Your correspondent "Mudlark" is slow, very slow, waiting some years for the galvanising process to come along. Mr G. A. Wainwright, of Grape Street, Leicester, would, I feel sure, be pleased to electro-galvanise his motor cycle for him, even the smallest nut. I had a machine galvanised two years ago. It is used daily and the saddle only covered at night. I clean it about once in three weeks with a bucket of water and a brush, followed by, first, a dry, then an oily rag. The galvanising scarcely shows signs of wear. I have no interest in Mr. Wainwright only as a customer.

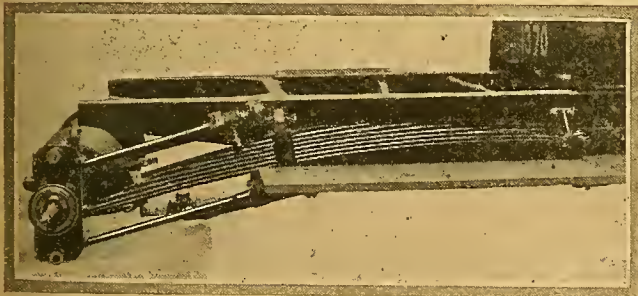
SKIDMORE.

Sir,—Since you published our name in connection with the waterproofing lacquer for the bright parts of motor cycles and cars, we have been inundated with enquiries and orders for this new speciality of ours. We were not prepared to supply the public—we are, as manufacturers, entirely in the hands of factors who stock our specialities. We should, however, like to mention that our chief reason for introducing a waterproof metallic lacquer was the numerous complaints we have received from our own travellers who are using motors, about their inability to keep their magnetos absolutely waterproof. In experimenting, with a view to solving this very important question for motorists, we have discovered this new method, which, according to the opinion of our own men who have now been using it for several months, has solved the most difficult problem of winter motor-ing.

JENSON AND NICHOLSON, LIMITED.

### The Springing of Cyclecars.

Sir,—We notice in your issue of the 7th inst., describing the Ariel runabout, there is a statement that "Lanchester springs are fitted to the rear wheels." We would point out that the illustration in no way bears this statement out. The illustration shows an ordinary quarter-elliptic spring, such as was used on the Oldsmobile car



The Lanchester Motor Co.'s rear springing (see letter).

some years ago, and differs vastly from the Lanchester system, both in principle and in detail of design.

Firstly, the Lanchester spring is underslung, *i.e.*, the spring is below the axle.

Secondly, the Lanchester spring does not act as a radius rod, which the quarter-elliptic spring illustrated on the Ariel cyclecar does.

Thirdly, the Lanchester parallel link motion, in conjunction with the half-elliptic cantilever spring, imparts a parallel motion to the back axle, instead of a radial motion, such as is given by the quarter-elliptic spring of the Ariel cyclecar, and all other would-be imitators of the Lanchester system.

We enclose herewith a photograph of Lanchester suspension, which illustrates the above points. We shall esteem it a favour if you will give this letter publicity, as the description and illustration of the Ariel runabouts are liable to give an erroneous impression of Lanchester practice to many of your readers.

THE LANCHESTER MOTOR CO., LTD.

### The Life of Epicyclic Hubs.

Sir,—Regarding "Ixion's" invitation for experiences of three speed epicyclic gears after a season's wear. I have had an Armstrong three-speed gear (sidecar model) on a  $3\frac{1}{2}$  h.p. Rover since February, during which time I have ridden the

machine 12,000 miles, 4,000 with sidecar and two passengers, without the slightest trouble or any replacements, and the gear appears as good to-day as when new.

I attribute my freedom from trouble to keeping it correctly adjusted and oiling every day. J. FARNSWORTH.

Sir,—I have read with interest the letter by W. Hunter with reference to gears, and should like to quote the experience which I have had with three-speed hubs, which has been somewhat different from that of Mr. Hunter.

I have this year run two machines, both Trump-Jap, one a 6 h.p. twin the other a  $3\frac{1}{2}$  h.p. single, both fitted with Sturmey-Archer three-speed gears. I have, on the 6 h.p. twin, covered about 5,000 miles, and upon the  $3\frac{1}{2}$  single over 30,000. During the whole of this distance I have been stopped once on the road, due to a failure of the gear, this being in the case of the  $3\frac{1}{2}$  h.p.; in no other instance have I had any trouble whatever except the occasional adjustment which is always necessary with this type of gear.

I do not agree with Mr. Hunter that a two-speed gear is preferable to a three-speed, as I think a little experience of both will show. D. A. PEARSON.

### Nail Catchers.

Sir,—If you would allow me to take up a small space in your paper, I should like to offer a useful hint to fellow motor cyclists.

I cannot emphasise too strongly the necessity of using "nail catchers" on both tyres. I have used the thin strips of metal fastened to the stays of the wheels, that are standardised by some firms, and found them quite useless, unless an extra large nail should be picked up—a thing that very rarely happens.

A quite inexpensive way of making nail catchers that will prevent the smallest nail or even thorn from entering and so puncturing the tyre, is to purchase a couple of steel burnishers consisting of a series of small steel rings entwined and trailing them over the tyres so that they actually touch the whole time.

I have ridden well over 3,000 miles on my 1912 Triumph and have not had one single puncture up till now. I weigh twelve stones, and have frequently carried a ten stone passenger on the carrier (a dangerous proceeding) over dreadful roads with half inch of grit and flints. I have made careful tests, and find that on each revolution of the wheel practically all the grit is wiped off as soon as it passes the chain, thus minimising punctures.

I admit there is a slight wear on the tread owing to friction, but it is very slight, and certainly worth it considering the saving in punctures. Personally I use rubber-studded tyres, but the same effect is got from any other pattern, with one exception, and that of steel-studded tyres—the danger here being that after the tyre has had a little wear the studs are liable to be pulled out by the chain.

P 7098.

### The Records of Cyclecars in 1912.

Sir,—It may be of interest to some of your readers who are confused by the multitude of cyclecars to sum up the results of the main events on road and track in which cyclecars have taken part this season.

1. M.C.C. London-Exeter: Morgan, one gold medal; A.C., one gold medal.
2. M.C.C. London-Edinburgh: Morgan, one special gold medal; A.C., one gold medal; Chater-Lea, one gold medal.
3. Scottish Six Days' Trial: G.W.K., one gold medal.
4. English Six Days' Trial: Morgan, one gold medal and silver cup; G.W.K., one gold medal.
5. A.C.U. Spring Trial: Autotrix, one first-class certificate.
6. A.C.U. Autumn Trial: G.W.K., two first-class certificates; Morgan, one first-class certificate.

The Duo and Humberette each entered for one event, but did not obtain a first-class award. No other cyclecar competed in these events. They had no doubt sufficient reasons, but it seems a pity they held aloof.

On the track at Brooklands, the Morgan won the first cyclecar race (average speed, 49 m.p.h.) The G.W.K. won the hour cyclecar race at the Championship meeting in October (47 m.p.h.) The November Olympic one hour cyclecar race was easily won by the Morgan (55 m.p.h.), which holds the hour record. E. S. B. SYDNEY.



### The Wear of Small Engines.

Sir,—I note in your issue of November 14th that a correspondent (Mr. Claude Middleton), after detailing an abnormal list of new parts, rendered necessary by a mileage of 7,000 covered on his 1910 Douglas lightweight, invites owners of 1912 lightweights to give their experiences.

I am quite certain that owners of Douglas machines, of whatever year, while sympathising with your correspondent, will contest stontly that such experience is anything but exceptional.

Since I purchased a 1912 Douglas in the early part of this year, I have covered a distance of quite 3,250 miles, which equals that covered by your correspondent before he was advised to fit new cylinders and pistons. The only part which I have replaced is an exhaust valve spring, and I do not think there is a part of the engine which is not in as good a condition as on the day on which I took delivery. I can only imagine that your correspondent may have been rather too sparing with his lubricant.

I am glad to note, however, that he is still an advocate of the horizontally-opposed twin, and feel sure that he will have reason to withdraw his criticism after riding a second 7,000 miles.

May I add the usual disclaimer.

F. L. B. DYNE.

### Power for Sidecar Work.

Sir,—Having read with interest several letters in your columns relating to the power required for touring purposes with a motor cycle and sidecar, I beg to write a few lines with reference to my experience of a  $3\frac{1}{2}$  h.p. two-speed Humber and sidecar.

After severely testing the combination with an eighteen stone passenger on the steepest and roughest hills in this district (Lancashire), I tried it on a rough surfaced hill with a gradient of about 1 in 8.

The result was far beyond my expectations; the machine with sidecar and four extra passengers actually started and went up without a falter. The total weight of passengers alone was forty-four stones. We then descended and started in the middle of the hill, but the result was just the same.

The half compression device is a decided advantage, as it allows a slow speed and easy pick-up without the slightest knock in the engine.

Considering that I use the machine for business and pleasure purposes, over all kinds of roads and in all weathers, I trust to be allowed to express an opinion. I have no hesitation in saying that a good  $3\frac{1}{2}$  h.p. motor cycle, with a variable gear and lin. rubber belt, is quite ample for anyone, except the "road hogs" who foster disgust on a most enjoyable pastime.

Permit me to add that I am in no way connected with any motor or accessory company, but simply a satisfied owner and ordinary everyday rider.

W.B.

Sir,—I am a reader of *The Motor Cycle* of some years' standing, and it has occurred to me that some of your readers may be interested to know what a good  $3\frac{1}{2}$  h.p. single-cylinder motor bicycle can do with sidecar attached. My machine is a three-speed Bradbury, and a few days ago I drove it with the load depicted (43½ stones), consisting of my wife and daughter in the sidecar and Mr. Manthorpe, local Bradbury agent, on the carrier, up the Magazine Hill in Phoenix Park (Dublin)



Photograph accompanying Mr. W. Parker's letter.

on top gear,  $4\frac{3}{4}$  to 1. The photograph enclosed speaks for itself. I have no interest whatever in the Bradbury Co., but am a satisfied user of the machine, which is excellent either for solo or sidecar work.

W. PARKER.

### Exhaust Whistles.

Sir,—Your reply to "D.S." re exhaust whistle in the issue of the 31st ult. is a little misleading if used in a general sense, and we should like to point out that, whilst most exhaust whistles use a valve to obtain sufficient warning sound, we, with our Garner M.C. alarm, do not employ any such means, the exhaust gas having greater release immediately the alarm is operated.

There is therefore a free passage for the exhaust, and no likelihood whatever of back pressure, and we should say that the engine would be cleaned rather than carbonised by the use of the Garner M.C. alarm. HENRY GARNER, LTD.

### Loose Bushes.

Sir,—For some time past I have been troubled over a mysterious sound in the engine of my 1912  $3\frac{1}{2}$  h.p. two-speed machine, which, for a considerable period, baffled all my efforts to elucidate. The noise sounded like a distant "reaping machine" and worried me considerably, and I have just solved the mystery. I find that other riders of the same make machine are, or have been, similarly troubled, hence my writing you to set such at their ease. I find that the magneto gear wheels have worked their bushes loose in the timing cover, and these revolve in the aluminum casting, thus causing the peculiar sound. These bushes are only a pressure fit in the soft aluminum, and, upon taking off the half timing cover to investigate, all five bushes dropped out. However, a steel strip collar wrapped round the bushes has restored the pressure fit.

BONA SATIS.

### Motor Cycle Taxation.

Sir,—If your correspondent, P. W. Morrice, "who owned a motor cycle in 1901," feels that his 8 h.p. car costs him more, and is not, on his own showing, so satisfactory as a sidecar, why not make the obvious exchange?

I do not hesitate to assert that the average small car makes more noise than many powerful sidecars, such as the standard Chater-Lea, Clyno, Enfield, and Indian, to instance a few of the first that come to mind.

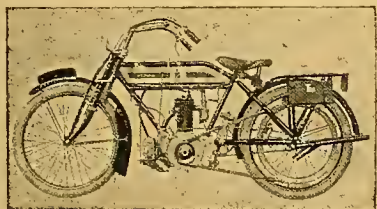
Anyhow, noise does not affect the question of taxation, and P. W. Morrice's display of adjectives is quite uncalled for.

P. H. LOVEGROVE.



# Victoria

In a crowd the Victoria Motor Bicycle always stands apart—its very distinctiveness ensures that—And just as that distinctiveness picks it out from the multitude of commonplace productions—So does its efficiency prove it entirely worthy of "a place apart." Its h.p. is  $3\frac{1}{2}$  and its specification includes—



**ALWAYS VICTORIOUS.**

*Precision Engine, single cylinder 85 m/m bore x 88 m/m stroke with mechanically operated side by side valves and variable pulley; specially designed Druid patent girder spring forks; Bosch high-tension magneto chain driven; Brown & Barlow carburettor with handle-bar control; Dunlop rubber belt; Dunlop heavy rubber studded tyres; Brooks B 170 saddle; and an exceptionally full equipment.*

And we ask you to note its price—

**£38 0 0** complete—  
and compare with "the rest."

Full details from—

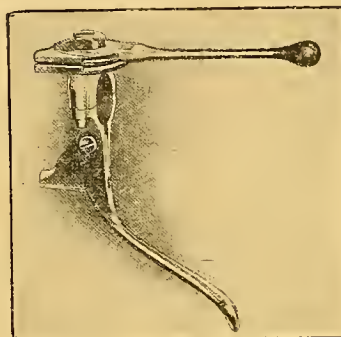
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# THE MOTORCYCLE BUYERS' GUIDE OF 1913 MODELS

## COMPLETE SPECIFICATIONS of all MOTOR CYCLES on the BRITISH MARKET.

We repeat in up-to-date form, and at the most opportune time of the year, this most useful feature which first made its appearance in "The Motor Cycle" of 1906. The third annual Olympia Show of motor cycles and accessories opens on Monday next, the 25th inst. This issue contains a full specification of every machine to be exhibited, thus the prospective purchaser may examine any particular model which appeals to him, having in his possession complete details and the price, without troubling the stand attendants. For ease in referring to the numerous details, we offer the following hints: A straight edge, or a piece of folded paper, renders the line much more easy to follow. Abbreviations to reduce space have perforce been made. For instance, in the case of change speed gears it must be understood, that when no make of gear is specified by name, the variation of the ratio is made by adjusting the engine pulley. All other abbreviations will, we feel sure, be rendered clear by reference to the following list. Though every effort has been made to avoid inaccuracies, we cannot be held responsible for any errors that may have occurred:

**INLET VALVES**—M = Mechanical. S.S. = Side by side. O. = Overhead. A. = Automatic. H.C. = Hand controlled air.  
**VARIABLE GEARS**—C. = Counter-shaft. E. = Engine Shaft. H. = Hub. F.E. = Free Engine. TRANSMISSION.—Com. = Combination of two systems.  
**TYRES**—A. = Avon. C. = Continental. D. = Dunlop. H. = Hutchinson. J.B. = John Bull. K. = Kamp-hall. L. = Li arty. M. = Michelin. P. = Palmer. F.U. = Palmer Cord. R. = Rom. W.M. = Wood Milne.

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Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburettor.	Change Speed Gear.	Transmission.	Gear Ratios to 1.	Saddle Height from Ground.	Crank Case Clearance.	Standard Size and Make of Tyres.	Length of Wheel base.	Stand- and Frame.	Foot or Hand Stealing.	Weight, Unladen, lbs.	Price.
*A.J.S. ....	2½ A.J.S. ....	74 × 81	298	M., S.S.	Amac, H.C.	3-speed A.J.S. C.	Chain	5, 8, 12 ..	30"	6"	26 × 2½ H.	52"	Rigid	Foot	155	£53 11
Alert .....	2½ Sarolea .....	66 × 72	246	M., S.S.	B. & B. ....	—	Belt	—	—	—	26 × 2 M.	—	Rigid	—	—	£37 10
Alldays .....	3 Alldays .....	85 × 88	499	M., S.S.	B. & B. ....	—	Belt	—	—	—	26 × 2 D.	—	Rigid	—	—	£45 0
*Alldays .....	2½ A. & O. ....	85 × 88	296	M., O.	B. & B. ....	—	Belt	—	29"	4½"	26 × 2 D.	46"	Rigid	Foot	95	£39 18
*Ariel .....	3 Ariel .....	86.4 × 85	498	M., S.S.	To order .....	Armstrong, H.	Chain	4½, 7½, 10	30"	4½"	26 × 2½ D.	53"	Rigid	Foot	195	£54 12
*Ariel .....	3 Ariel .....	86.4 × 85	498	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt	5, 7, 10 ..	30"	4½"	26 × 2½ L.	53"	Rigid	Foot	210	£58 15
*Ariel T.T. Racer .....	3 Ariel .....	86.4 × 85	498	M., S.S.	B. & B., H.C.	Free-engine ..	Belt	4 to 5 ..	31½"	4½"	26 × 2½ L.	51"	Rigid	—	200	£52 10
*Arno .....	3 Arno .....	84 × 89	493	M. ....	B. & B. ....	Armstrong, H.	Belt	5, 7, 10 ..	27"	4½"	26 × 2½ L.	53"	Rigid	Foot	190	£60 0
*Arno .....	2½ Arno .....	77 × 81	377	M. ....	B. & B. ....	Sturmev-A., H.	Belt	—	30"	4½"	26 × 2½ H.	57"	Rigid	Foot	190	£57 0
*Arno .....	2½ Arno .....	65 × 70	232	M. ....	B. & B. ....	—	1 c.t. ....	5, 8 .....	27"	5½"	26 × 2 H.	55"	Rigid	Foot	130	£42 0
A.S.L. ....	3 Precision .....	85 × 88	499	M., S.S.	Amac .....	N.S.U. ....	Belt	4, 6½ ..	29"	6"	26 × 2½ H.	53"	Rigid	Foot	180	£35 0
A.S.L. ....	3 Precision .....	85 × 88	499	M., S.S.	Amac .....	A.S.L. ....	Com.	4, 8 .....	29"	6"	26 × 2½ K.	54"	Spring	Foot	185	£60 0
A.S.L. ....	3 Precision .....	85 × 88	499	M., S.S.	Amac .....	Sturmev-A. ..	Chain	4, 6, 8 ..	29"	4½"	26 × 2½ K.	51"	Rigid	Foot	185	£60 0
*Bradbury .....	3½ Bradbury .....	89 × 89	554	M., S.S.	B. & B., H.C.	—	Belt	4, 6 .....	29"	5½"	26 × 2½ D.	53"	Spring	Foot	190	£48 0
Brady .....	3 Brady .....	89 × 89	554	M., S.S.	B. & B., H.C.	—	Belt	—	27"	5"	26 × 2½ D.	51"	Rigid	Foot	170	£48 0
Brough T.T. ....	3 Brough .....	85 × 88	499	M., S.S.	Senspray, H.C.	—	Belt	3 to 6 ..	29½"	4½"	26 × 2½ J.B.	49"	Rigid	—	165	£45 0
Brough .....	3 Brough .....	85 × 88	499	M., S.S.	Senspray, H.C.	—	Belt	4 to 13 ..	30½"	4½"	26 × 2½ J.B.	51"	Rigid	Handle	194	£55 10
*Brown .....	3½ Brown .....	86 × 86	499	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt	5, 7, 10 ..	31"	5½"	26 × 2 .....	52"	Rigid	Foot	180	£57 0
Brown .....	3 Brown .....	86 × 86	499	M., S.S.	B. & B., H.C.	Bowden, C. ....	Belt	5, 7, 10 ..	31"	5"	26 × 2 .....	52"	Rigid	Foot	180	£58 0
*Brown .....	2½ Brown .....	7½ × 76	292	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt	5, 7, 10 ..	30"	5"	26 × 2 D.	50"	Rigid	Foot	110	£46 0
B.S.A. T.T. ....	3½ B.S.A. ....	85 × 88	499	M., S.S.	B.S.A., H.C.	—	Belt	4½ to 5½ ..	23"	3½"	26 × 2½ D.	49½"	Rigid	Foot	175	£48 10
*B.S.A. ....	3½ B.S.A. ....	85 × 88	499	M., S.S.	B.S.A., H.C.	B.S.A. F.E. ..	Belt	4½ to 5 ..	28"	3½"	26 × 2½ D.	52½"	Rigid	Foot	190	£56 10

\* A.J.S. : Two-speed, £5 5s. less.

\* Arno : Single gear, £8 10s.

\* Brown : Single-speed, £10 less.

\* Alldays : F.E. clutch, £7 7s. less; two-speed hub, £4 4s. less.

\* Bradbury : Two-speed (E), £9 extra; free engine, £6 10s. extra; counter-shaft gear with chain, Armstrong or Sturmev-Acher, £12 extra.

\* B.S.A. : B.S.A. two-speed hub (belt or chain drive), £3 10s. extra.

\* Ariel : Single-speed and 2½" tyre on back, £11 5s. less.

\* Sturmev-Acher : Sturmev-Acher, £12 extra.



## SINGLE-CYLINDER BICYCLES (Continued).

Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburettor.	Change Speed Gear.	Transmission.	Gear Ratios to 1.	Saddle Height from Ground, l.	Crank Case Clearance.	Standard Size and Make of Tyres.	Length of Wheel base.	Stand. and Frame.	Foot or Hand Stealing.	Weight, Unladen, lbs.	Price.
*Calcott	2½ Calcott	70 × 76	292	M, S.S.	B. & B., H.C.	—	Belt 1"	5½ to 8	39"	8"	26 × 2 D.	50"	Rigid	Foot	140	£34 13
Calcott	4½ Calcott	90 × 96	611	M, S.S.	B. & B., H.C.	To order	Belt 1"	5½ to 8	31"	7½"	26 × 2 M.	55"	Rigid	Foot	195	£55 10
*Calthorpe	3½ Calthorpe	85 × 88	499	M, S.S.	Amac, A.	Armstrong, H.	Belt 1"	5, 7, 10	32"	5"	26 × 2 M.	55"	Rigid	Foot	235	£58 10
Calthorpe	4½ Calthorpe	90 × 96	611	M, S.S.	Amac, A.	Armstrong, C.	Com.	5 to 9	32"	4"	26 × 2 M.	55"	Rigid	Foot	163	£46 10
Calthorpe	4½ Calthorpe	70 × 76	292	M, S.S.	Amac, A.	Armstrong, H.	Belt 1"	5, 7, 10	31"	6"	26 × 2 M.	51"	Rigid	Foot	195	£48 0
Calthorpe T.T.	3½ T.T.	85 × 88	499	O.	Amac	—	Belt 1"	5, 7, 10	32"	5"	26 × 2 M.	55"	Rigid	Foot	163	£48 0
Campion	4 J.A.P.	85 × 85	482	M, S.S.	B. & B., H.C.	G.H., C.	Chain	4½, 9	30"	4½"	26 × 2 D.	53"	Rigid	Hand	110	£58 0
Campion	4 J.A.P.	85 × 85	482	M, S.S.	B. & B., H.C.	Sturmev-A., H.	Belt 1"	4½, 6½, 9½	30"	4½"	26 × 2 D.	51"	Rigid	Foot	185	£57 0
Campion	4 J.A.P.	85 × 85	482	M, S.S.	B. & B., H.C.	—	Belt 1"	5, 6½	30"	4½"	26 × 2 D.	51"	Rigid	Foot	176	£45 0
Campion	2 Centaur	60 × 70	198	M, S.S.	Amac, H.C.	—	Belt 1"	5, 6½	30"	6½"	26 × 1 ½	50"	Rigid	Pedal	94	£35 0
Centaur	3½ Centaur	84 × 90	499	M, S.S.	Amac, H.C.	Armstrong V.L.	Belt 1"	5, 6½	28"	4½"	26 × 2 D.	54"	Rigid	Foot	195	£57 10
*Cleveland	3½ Precision	85 × 88	499	M, S.S.	B. & B., H.C.	Sturmev-A., H.	Belt 1"	4, 6, 8	29½"	5"	26 × 2 D.	52"	Rigid	Foot	189	£56 10
Cleveland	3½ Precision	85 × 88	499	M, S.S.	B. & B., H.C.	Villiers F.E.	Belt 1"	4 to 6	29½"	5"	26 × 2 D.	52"	Rigid	Foot	188	£53 0
*Cleveland	4½ Precision	89 × 96	597	M, S.S.	B. & B., H.C.	Sturmev-A., H.	Belt 1"	5, 7½, 10	29½"	4½"	26 × 2 D.	52"	Rigid	Foot	205	£59 10
*Clyde	4 J.A.P.	85 × 85	482	S.S.	Amac, H.C.	G.H., C.	Chain	5, 9	30½"	4½"	26 × 2 D.	53"	Rigid	Hand	185	£59 0
*Corah	3½ J.A.P.	85 × 85	482	M, O.	B. & B., H.C.	—	Belt 1"	4, 6, 8	28"	4½"	26 × 2 H.	52"	Rigid	—	180	£48 6
*Day	3½ Leeds	85 × 88	499	M, O.	To order	—	Belt 1"	4 to 6	30"	—	26 × 2 ½	51"	Rigid	—	176	£48 0
*Dene	3½ Precision	85 × 88	499	M, S.S.	B. & B., H.C.	Armstrong, H.	Belt 1"	—	29½"	4½"	26 × 2 H.	53"	Rigid	Foot	195	£55 0
Dene	4½ Precision	89 × 96	597	M, S.S.	B. & B., H.C.	Armstrong, H.	Belt 1"	—	29½"	4½"	26 × 2 H.	54"	Rigid	Foot	205	£61 0
Diamond	2½ Diamond	75 × 79	349	M, O.	Amac	Diamond, C.	Com.	5½, 9½	26"	6"	26 × 2 ½	51"	Rigid	Foot	140	£52 10
Dot	3½ Precision	85 × 88	499	M, S.S.	Amac, A.	Armstrong, H.	Belt 1"	4, 6, 8	31"	4½"	26 × 2 H.	50"	Rigid	Foot	190	£58 10
Dot	4½ Precision	89 × 96	597	M, S.S.	Amac, A.	Armstrong, H.	Belt 1"	4, 6, 8	31½"	4½"	26 × 2 ½	50"	Rigid	Foot	196	£60 8
*Edmund	3½ J.A.P.	85 × 85	482	M, S.S.	B. & B., H.C.	—	Belt 1"	—	31"	5½"	26 × 2 ½	52"	Spring	—	185	£50 8
Edmund	4 Fafair	87 × 88	523	M, S.S.	B. & B., H.C.	Albion Hub Cl.	Belt 1"	—	31"	5½"	26 × 2 ½	52"	Spring	Hand	195	£55 13
*Elswick	2½ Elswick	70 × 76	292	M, S.S.	B. & B., H.C.	—	Belt 1"	6	29"	4½"	26 × 2 D.	50"	Spring	Foot	110	£40 0
*Elswick	3½ Elswick	85 × 88	499	M, S.S.	B. & B., H.C.	Armstrong, H.	Belt 1"	4, 6, 8	30"	5"	26 × 2 D.	53"	Rigid	Foot	192	£58 0
Elswick	4½ Elswick	89 × 96	597	M, S.S.	B. & B., H.C.	Armstrong, H.	Belt 1"	4½, 7, 11	31"	5"	26 × 2 D.	54"	Rigid	Foot	210	£64 0
*Excelsior	3½ Excelsior	85 × 88	499	M, S.S.	Binks, A.	Sturmev-A.	Belt 1"	4, 6, 8	30"	5"	26 × 2 ½	54½"	Rigid	Foot	200	£58 5
Excelsior	4½ Excelsior	85 × 88	499	M, S.S.	Binks, A.	2-speed, C.	Chain	4½, 9	30"	5½"	26 × 2 ½	54½"	Rigid	Foot	200	£59 0
Excelsior	4½ Excelsior	86 × 112	650	M, S.S.	Binks, A.	2-speed, C.	Chain	4½, 9	30"	5½"	26 × 2 ½	54½"	Rigid	Hand	200	£59 0
Excelsior	4½ Excelsior	86 × 112	650	M, S.S.	Binks, A.	2-speed, C.	Chain	4½, 9	30"	5½"	26 × 2 ½	54½"	Rigid	Foot	214	£65 13
Excelsior	5-6 Excelsior	96 × 112	800	M, S.S.	Binks, A.	2-speed, C.	Chain	4½, 9	30"	5½"	26 × 2 ½	54½"	Rigid	Foot	214	£67 15
Excelsior	5-6 Excelsior	96 × 112	800	M, S.S.	Binks, A.	2-speed, C.	Chain	4½, 9	30"	5½"	26 × 2 ½	54½"	Rigid	Foot	230	£69 15
E.Y.M.E.	2½ P. excision	70 × 76	290	M, S.S.	B. & B., H.C.	To order	Belt 1"	To order	30"	—	26 × 2 ½	54½"	Rigid	Hand	230	£69 15
E.Y.M.E.	3½ T.D.C.	85 × 88	499	M, S.S.	B. & B., H.C.	To order	Belt 1"	To order	30"	—	26 × 2 ½	54½"	Rigid	—	—	£29 0
E.Y.M.E. T.T.	3½ Precision	85 × 88	499	M, S.S.	B.S.A., H.C.	To order	Belt 1"	To order	—	—	26 × 2 ½	—	Rigid	—	—	£36 0
E.Y.M.E.	4½ Precision	89 × 96	597	M, S.S.	B. & B., H.C.	To order	Belt 1"	To order	—	—	26 × 2 ½	—	Rigid	—	—	£38 0
E.Y.M.E.	5 Brock	92 × 120	797	M, S.S.	B. & B., H.C.	To order	Belt 1"	To order	—	—	26 × 2 ½	—	Rigid	—	—	£39 0
E.Y.M.E.	5 Brock	92 × 120	797	M, S.S.	B. & B., H.C.	To order	Belt 1"	To order	—	—	26 × 2 ½	—	Rigid	—	—	£42 0
T.N. Lightweight	2½ F.N.	65 × 86	285	M, S.S.	F.N., A.	F.N., C.	Shaft	6, 10	30"	4½"	26 × 2	52"	Rigid	Foot	145	£47 5
G-a-dex	2½ Precision	70 × 76	292	M, S.S.	B. & B., H.C.	—	Belt 1"	—	27"	—	26 × 2 H.	—	Open	Foot	110	£33 12
Grandex	2½ Precision	70 × 90	346	M, O.	B. & B., H.C.	—	Belt 1"	—	27"	—	26 × 2 H.	—	Open	Foot	125	£37 16
Grandex	3½ Precision	85 × 88	499	M, O.	B. & B., H.C.	—	Belt 1"	—	27"	—	26 × 2 H.	—	Open	Foot	160	£39 18
Grand ex	4½ Precision	89 × 96	597	M, S.S.	Amac, H.C.	—	Belt 1"	—	27"	—	26 × 2 ½	—	Open	Foot	190	£45 3
Grand ex	3½ Green	85 × 87	444	M, S.S.	B. & B., H.C.	—	Belt 1"	—	27"	—	26 × 2 ½	—	Open	Foot	200	£55 0

\* Calcott: Three-speed hub, £10 10s., extra.

\* Calthorpe: Single gear, free engine, £5 10s. less.

and belt drive, £10 10s. less.

\* Corah: 90 × 77½ engine, same price.

\* Dene: Bowden gear (C), £10 10s. extra; Doherty hub, £5 extra.

\* Edmund: Can be fitted with Edmund (C) gear and combination drive\*

\* Elswick: 2½ h.p. with free engine and Palmer tyres, £6 extra; 3½ h.p. with free engine and Clincher tyres, £4 less.

\* Excelsior: Single-speed, £10 10s. less.

\* Cleveland: Single-speed, £10 less.

\* Dene: Single-speed, £9

\* Elswick: 2½ h.p. with free engine and Palmer tyres, £6 extra; 3½ h.p. with free

engine and Clincher tyres, £4 less.

\* Excelsior: Single-speed, £10 10s. less.

\* Elswick: 2½ h.p. with free engine and Palmer tyres, £6 extra; 3½ h.p. with free

engine and Clincher tyres, £4 less.

\* Excelsior: Single-speed, £10 10s. less.



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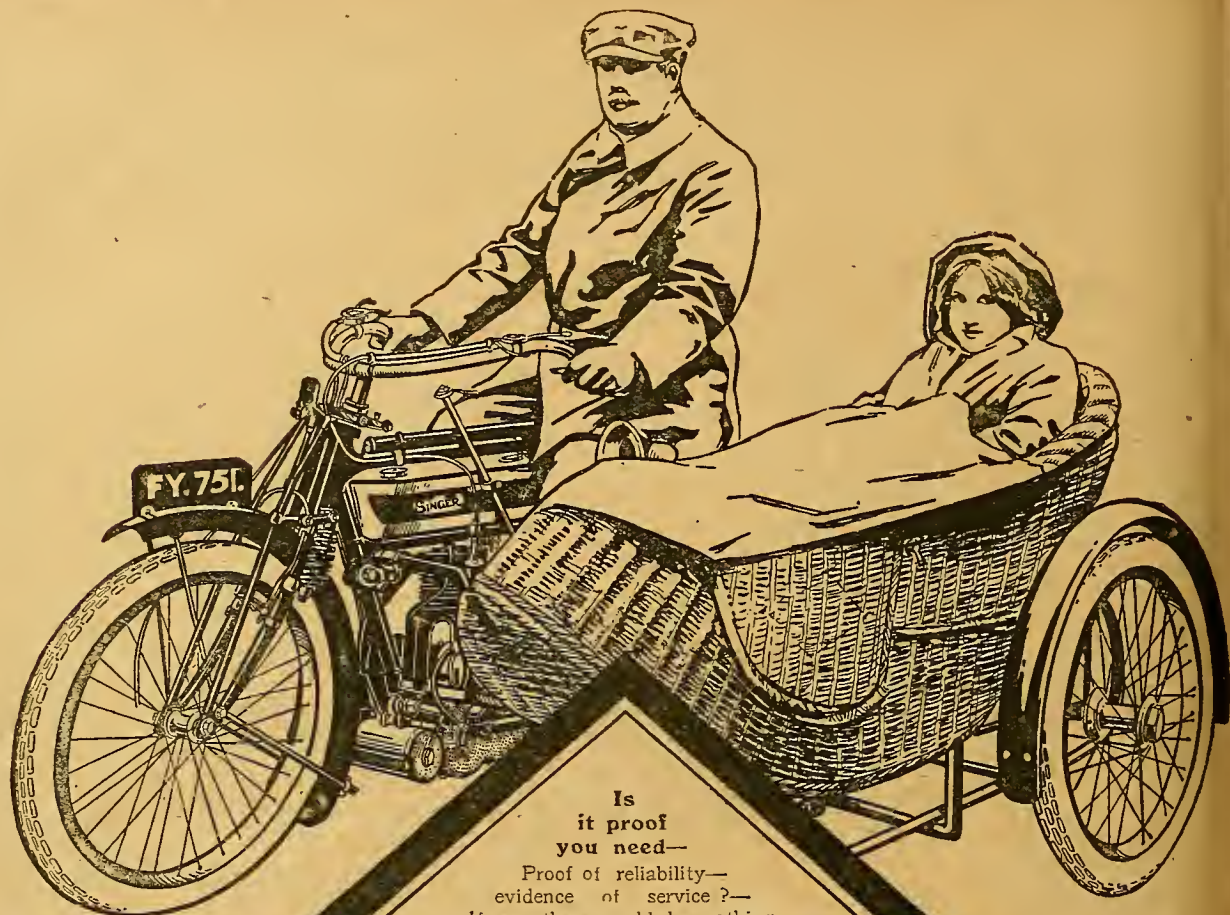
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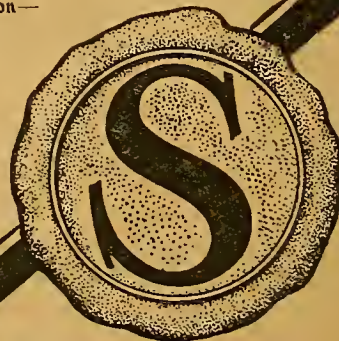
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## SINGLE-CYLINDER BICYCLES (Continued).

Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburettor.	Change Speed Gear.	Transmission.	Gear Ratios to I.	Saddle Height from Ground.	Crank Case Clearance.	Standard Size and Make of Tyres.	Length of Wheel-base.	Stand-ard Frame.	Foot or Hand Starting.	Weight, Unladen, lbs.	Price.
Hazlewood	2½ J.A.P.	70 × 76	292	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 3"	5, 7, 10	29"	6"	26 × 2 H.	53"	Rigid	Foot	150	£47 5
*Hobart	2½ J.A.P.	70 × 78	300	M., S.S.	B. & B., H.C.	—	Belt 3"	5	31"	5½"	26 × 2 H.	52½"	Rigid	Foot	130	£37 16
Hobart T.T.	2½ J.A.P.	67 × 85	300	O.	B. & B., H.C.	—	Belt 3"	4 to 6½	31"	5½"	26 × 2 H.	52½"	Rigid	—	120	£40 0
Hobart	3½ J.A.P.	85½ × 85	488	O.	B. & B., H.C.	Villiers F.E.	Belt 3"	4 to 5½	30½"	5½"	26 × 2 H.	54"	Rigid	Foot	190	£52 10
Hobart Lady's	2½ J.A.P.	70 × 78	300	M., S.S.	B. & B., H.C.	Sturmev-A.	Belt 3"	5½, 8½, 11	28"	4½"	26 × 2 H.	53½"	Open	Foot	145	£50 8
*Humber	2 standard	60 × 70	198	M., S.S.	B. & B.	—	Belt 3"	5 to 6½	30"	6½"	26 × 1½ D.	50½"	Rigid	—	94	£35 0
*Humber	3½ standard	84 × 90	499	M., S.S.	B. & B.	Free-engine	Belt 3"	5 to 7	28"	4½"	26 × 2½ D.	53½"	Rigid	Foot	195	£52 10
Indian	3½ Indian	82½ × 93	497	O.	Indian, A.	—	Chain	To order	30"	5½"	26 × 2½ H.	56"	Spring Rigid	Foot	230	£60 0
*Ireland	3½ Blumfield	80 × 91	452	M., S.S.	To order	—	Belt 3"	—	29"	4½"	26 × 2½ D.	51"	Rigid	Foot	—	£45 0
Ivy	2½ Ivy	70 × 76	293	M., S.S.	B. & B., H.C.	—	Belt 3"	—	29"	4½"	26 × 2 D.	51"	Rigid	Foot	130	£35 0
Ivy	2½ Ivy	70 × 90	346	S.S.	Amac	—	Belt 3"	—	30"	4½"	26 × 2½ D.	51"	Rigid	Foot	130	£37 0
*Ivy	3½ Ivy	85 × 88	499	S.S.	Amac	—	Belt 3"	—	30"	4½"	26 × 2½ D.	51"	Rigid	Foot	170	£45 0
Ivy	4½ Ivy	89 × 96	597	M., S.S.	Amac	—	Belt 1"	5, 7½, 10½	30"	4½"	26 × 2½ D.	53"	Rigid	Foot	180	£56 10
*Ixon	3½ Precision	85 × 88	499	M., O.	B. & B.	—	Belt 3"	4½	31"	3½"	26 × 2½ H.	52"	Rigid	Foot	200	£46 0
*James	3½ James	86 × 96	557	M., S.S.	B. & B., H.C.	—	Belt 3"	4 to 6	30"	4½"	26 × 2½ D.	53"	Rigid	Foot	185	£48 15
James T.T.	3½ James	86 × 96	557	M., S.S.	B. & B., H.C.	—	Belt 3"	4 to 6	29"	4½"	26 × 2½ D.	53"	Rigid	Foot	175	£48 15
James	3½ James	86 × 96	557	M., S.S.	B. & B., H.C.	—	Chain	5, 8, 13	30"	4½"	26 × 2½ D.	54"	Rigid	Foot	215	£63 0
Juno	3½ Juno	86 × 86	499	M., S.S.	B. & B.	James, C., 3-sp.	Belt 7"	4 to 5½	32"	4½"	26 × 2½ D.	54"	Rigid	Foot	158	£43 0
Juno	2½ Precision	70 × 76	292	M., S.S.	B. & B.	—	Belt 3"	5 to 1	32"	6"	26 × 2 D.	50"	Rigid	Foot	106	£36 0
Kynoch	4 J.A.P.	85½ × 85	488	M., S.S.	B. & B., H.C.	—	Belt 7"	—	30"	4½"	26 × 2½ H.	53"	Rigid	Pedals	180	£48 6
Kynoch	4 J.A.P.	85½ × 85	488	M., S.S.	B. & B., H.C.	Sturmev-A., H.	Belt 7"	4½, 6½, 9½	30"	4½"	26 × 2½ H.	53"	Rigid	Foot	190	£58 16
Levis	2½ Levis 2-stroke	62 × 70	211	None	Amac, H.C.	—	Belt 3"	5½	28"	4½"	24 × 2 H.	49"	Rigid	—	86	£33 12
*Levis	2½ Levis 2-stroke	70 × 70	209	None	Amac, H.C.	—	Belt 3"	5½	29½"	4½"	26 × 2 H.	51½"	Rigid	—	98	£36 15
Lincoln Elk	3½ Lincoln Elk	70 × 72	277	S.S.	B. & B., H.C.	—	Belt 3"	6½	32"	6"	26 × 1½ P.	49"	Rigid	—	120	£29 10
Lincoln Elk	3½ Lincoln Elk	79 × 82	492	S.S.	B. & B., H.C.	—	Belt 3"	5	32½"	5½"	26 × 2 P.	53"	Rigid	Foot	150	£31 10
*Lincoln Elk	3½ Lincoln Elk	85 × 88	499	S.S.	B. & B., H.C.	Lincoln-Elk, C.	Belt 3"	5½, 9	32½"	5½"	26 × 2½ P.	53"	Rigid	Foot	210	£43 0
Lincoln Elk	4½ Lincoln Elk	89 × 96	597	S.S.	B. & B., H.C.	Lincoln-Elk, C.	Com.	5½, 9	32½"	5½"	26 × 2½ P.	53"	Rigid	Foot	220	£46 0
*L.M.C.	3½ L.M.C.	85 × 88	499	M., S.S.	To order, H.C.	L.M.C. Auto	Belt 7"	4, 7½	31"	4"	23 × 2½	—	Rigid	Foot	190	£51 0
*L.M.C.	4 L.M.C.	89 × 92	572	M., S.S.	To order, H.C.	Varia, E. J	Belt 1"	4, 5½	31"	4"	26 × 2½	—	Rigid	Foot	200	£54 0
Macbeth	3½ Macbeth	85 × 88	499	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 7"	4, 6, 8	30"	4½"	26 × 2½ D.	—	Rigid	Foot	—	£58 0
Martin	2½ Precision	70 × 90	346	M., S.S.	Ma tin-Amac	To order	Belt 3"	4 to 5½	28½"	4½"	26 × 2 H.	52"	Rigid	—	135	—
Martin	3½ Martin-Jap	85½ × 85	488	M., S.S.	Martin-Amac	To order	Belt 3"	4, 6, 8	29"	4½"	26 × 2½ H.	53"	Rigid	—	180	—
Martin	4 T.T. J.A.P.	90 × 77½	494	O.	Ma tin-Amac	To order	Belt 3"	3 to 4	28"	4"	—	53"	Rigid	—	175	—
Maxim	3½ T.D.C.	85 × 88	499	M., S.S.	B. & B., H.C.	Sturmev-A.	Belt 1"	5, 7½, 10½	30"	4½"	Hutchinson	54"	Rigid	Foot	199	£50 0
Monopole	2½ Precision	70 × 76	293	M., S.S.	B. & B., H.C.	—	Belt 3"	5	—	6"	26 × 2 D.	52"	Rigid	Foot	—	—
Monopole	2½ Precision	85 × 88	499	M., S.S.	B. & B., H.C.	Sturmev-A., H.	Belt 3"	5, 7½, 10½	—	5"	26 × 2½ D.	52"	Rigid	Foot	—	—
Moto-Réve	2 M.R.	62 × 85	257	O.	—	Moto-Réve, H.	Belt 3"	—	32"	10"	26 × 2	50"	Rigid	Foot	92	—
Moto-Réve	2 M.R.	67 × 85	300	O.	—	—	Belt 3"	—	31"	6"	26 × 2	56"	Rigid	Foot	105	—
Motosacocho	2½ Motosacocho	64 × 90	289	M., S.S.	Semi-A.	—	Belt 3"	5 to 9	31"	10"	26 × 1½ H.	49"	Rigid	Foot	110	—
*New Comet	3½ Precision	85 × 88	499	M., S.S.	To order	Haden 3-sp., C.	Com.	4 to 16	29"	5"	26 × 2½	51"	Rigid	to order	197	£55 0
New Comet	4½ Precision	89 × 96	597	S.S.	To order	Haden 3-sp., C.	Com.	4 to 16	29"	4½"	26 × 2½	53"	Rigid	to order	220	£61 0
New Hudson	2½ New Hudson	70 × 90	350	S.S.	—	Armstrong, H.	Belt 7"	5½, 7½, 10½	31½"	6½"	26 × 2 D.	53"	Rigid	to order	—	£49 7
New Hudson	3½ New Hudson	85 × 88	499	S.S.	—	Armstrong, H.	Belt 1"	4½, 6½, 9½	31½"	5½"	26 × 2½ D.	53"	Rigid	Foot	—	£57 15

\* Hobart: Sturmev-Archer three-speed fitter 1 to order. \* Humber: 2 h.p. with Sturmev-Archer three-speed hub, £10 10s. extra; 3½ h.p. with Sturmev-Archer three-speed hub, £5 extra. \* Ireland: Sturmev-Archer three-speed, £12 10s. extra; Villiers free engine, £5 10s. extra. \* Ivy: Overhead valve engine, £2 extra; B.S.A. two-speed hub, £7 extra. \* Ixon: Sturmev-Archer three-speed, £6 10s. extra. \* James: Free engine, 16 5s. extra; three-speed h.b., £9 5s. extra. \* Levis: Combination drive, £3 3s. extra. \* Lincoln-Elk: Single speed, £8 less. \* L.M.C.: Both models can be supplied with L.M.C. two-speed (C) gear, Roc hub, or Armstrong three-speed hub. \* New Comet: Single speed, £13 less; also fitted with 3½ h.p. J.A.P. engine.



## SINGLE-CYLINDER BICYCLES (Continued).

Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburetter.	Change Speed Gear.	Transmission.	Gear Ratios to I.	Saddle Height from Ground.	Crank Case Clearance.	Standard Size and Make of Tyres.	Length of Wheel-base.	Stand- F. ame. and	Foot or Hand Starting.	Weight, Unladen, lbs.	Price.
New Imperial	2½ J.A.P.	74 × 76	372	M. S.S.	B. & B., H.C.	—	Belt	—	28"	5"	26 × 2 H.	52"	Rigid	—	160	£40 0
New Imperial	3½ J.A.P.	85 × 85	482	M. S.S.	B. & B., H.C.	Armstrong, H.	Belt	5, 7, 10	28"	4"	26 × 2½ H.	54"	Rigid	—	195	£55 0
New Imperial T.T.	3½ J.A.P.	85 × 85	482	M. S.S.	B. & B., H.C.	—	Belt	5, 7, 10	28"	4"	26 × 2½ H.	54"	Rigid	—	180	£48 0
New Imperial	4 J.A.P.	90 × 96	611	M. S.S.	Amac	Armstrong, H.	Belt	5, 7, 10	28"	5"	26 × 2½ H.	50"	Rigid	Foot	195	£55 10
*N.L.G.	4 J.A.P.	85 × 85	482	M. S.S.	B. & B., H.C.	Armstrong, H.	Belt	4½, 6½, 10½	28"	5"	26 × 2½ H.	50"	Rigid	Foot	195	£55 10
Norton	2½ Norton	70 × 90	346	M. S.S.	Amac	Armstrong, H.	Belt	5, 7½, 11½	28½"	4½"	26 × 2½ C.	53"	Rigid	Foot	195	£59 0
*Norton	3½ Norton	79 × 100	490	M. S.S.	Amac, H.C.	Armstrong, H.	Belt	5, 7½, 11½	28½"	4½"	26 × 2½ C.	56"	Rigid	Foot	170	£50 0
Norton T.T.	3½ Norton	79 × 100	490	M. S.S.	C.A.P.	—	Belt	3½ to 5	28½"	4½"	26 × 2½ C.	56"	Rigid	Foot	200	£62 0
*N.S.U.	Big 4 Norton	82 × 120	636	M. S.S.	Amac, H.C.	Armstrong, H.	Belt	5, 7½, 11½	30½"	5½"	26 × 2 (Con.)	51"	Rigid	Pedal	105	£34 0
*N.S.U.	2 N.S.U.	58 × 72	190	M. O.	N.S.U., dual	—	Belt	4½	30"	5½"	26 × 2 (Con.)	55"	Spring	Pedal	145	£43 0
*N.S.U.	3 N.S.U.	73 × 78	326	M. O.	N.S.U., dual	—	Belt	4½	29"	6"	26 × 2½ C.	54"	Spring	Pedal	160	£48 0
*N.S.U.	2½ N.S.U.	85 × 88	499	M. O.	N.S.U., dual	—	Belt	4½	30"	4½"	26 × 2½ C.	53"	Rigid	Hand	200	—
*N.U.T.	3½ J.A.P.	85 × 88	499	M. O.	Amac	Armstrong	Belt	4, 6, 8	30"	4½"	26 × 2½ C.	52"	Rigid	Foot	—	—
O.K.	2½ O.K.-Precision	70 × 76	293	M. S.S.	Amac, H.C.	Sturmev-A., H.	Belt	3½, 7½, 10½	30"	4"	26 × 2½ H.	52"	Rigid	Foot	—	—
*O.K.	3½ O.K.-Precision	85 × 88	499	M. S.S.	Amac, H.C.	Sturmev-A., H.	Belt	4, 6, 8	31"	—	26 × 2½ H.	52"	Rigid	Foot	—	—
P. & M. Touring	3½ P. & M.	84.5 × 88.9	498	M. S.S.	P. & M., H.C.	P. & M. 2-sp., C	Chain	4½, 8 solo	28"	8½"	26 × 2½ K.	54"	Rigid	Foot	190	£65 0
P. & M. Touring	3½ P. & M.	84.5 × 88.9	498	M. S.S.	P. & M., H.C.	P. & M. 2-sp., C	Chain	5, 9 sidcar	28"	8½"	26 × 2½ K.	54"	Rigid	Foot	190	£65 0
P. & M. Colonial	3½ P. & M.	84.5 × 88.9	498	M. S.S.	P. & M., H.C.	P. & M. 2-sp., C	Chain	5, 9	28"	8½"	26 × 2½ K.	54"	Rigid	Foot	190	£70 0
*Pilot	3½ Precision	85 × 88	499	M. S.S.	Amac, H.C.	—	Belt	—	28"	4"	26 × 2½ H.	52"	Rigid	to order	—	£42 10
*Pilot	4 J.A.P.	85 × 85	482	M. S.S.	Amac, H.C.	—	Belt	—	28"	4"	26 × 2½ H.	52"	Rigid	to order	—	£42 10
*Pilot	4 Precision	89 × 96	517	M. S.S.	Amac, H.C.	—	Belt	—	28"	4"	26 × 2½ H.	53"	Rigid	to order	—	£45 10
*Portland	3½ Precision	85 × 88	499	M. S.S.	To order	N.S.U., E.	Belt	—	28½"	5"	To order	—	Rigid	Foot	—	£48 10
*Portland	4 J.A.P.	85 × 85	482	M. S.S.	Senspray, H.C.	N.S.U., E.	Belt	4½	28½"	5"	To order	—	Rigid	Pedal	—	£40 19
*Portland	4 Precision	89 × 96	597	M. S.S.	To order	N.S.U., E.	Belt	—	28½"	5"	To order	—	Rigid	Foot	—	£50 0
*Premier	2½ Premier	66 × 72	246	M. S.S.	B. & B.	Armstrong, H.	Belt	5, 7, 10	30"	6½"	26 × 2½ D.	47"	Rigid	Foot	144	£44 0
*Premier	3½ Premier	85 × 88	499	M. S.S.	B. & B.	Premier 2-sp., C	Com.	5, 10	30"	6"	26 × 2½ D.	52"	Rigid	Handle	212	£56 0
*Premier T.T.	3½ Premier	85 × 88	499	M. S.S.	Senspray	—	Belt	—	30"	6"	26 × 2½ D.	46"	Rigid	—	170	£48 0
Regal-Green	3½ Green	85 × 88	499	O.	Senspray	G.H. 2-sp., C.	Chain	4½, 9½	29"	4"	26 × 2½ H.	54"	Rigid	Hand	190	£65 0
Regal-Green T.T.	3½ Green	85 × 88	499	O.	Senspray	—	Belt	3 to 6½	28½"	4½"	26 × 2½ H.	50"	Rigid	—	170	£55 0
Regal-Precision	2½ Precision	70 × 90	348	M. S.S.	Amac, H.C.	Sturmev-A., H.	Belt	5, 7½, 10½	29"	5"	26 × 2½ H.	50"	Rigid	Hand	180	£47 10
Regal-Precision	3½ Precision	85 × 88	499	M. S.S.	Amac, H.C.	Sturmev-A., H.	Belt	4, 6, 8½	29"	4½"	26 × 2½ H.	50"	Rigid	Hand	185	£55 10
*Regal-Precis. T.T.	3½ Precision	85 × 88	499	M. S.S.	Amac, H.C.	—	Belt	Adjustable	28½"	4½"	26 × 2½ H.	49"	Rigid	—	170	£47 0
*Regal-Precision	4 Precision	89 × 96	597	M. S.S.	Amac, H.C.	G.H. 2-sp., C.	Chain	4½, 9½	28"	4½"	26 × 2½ H.	53"	Rigid	Hand	210	£59 10
*Rex	4 Rex	84½ × 95	532	M. S.S.	B. & B.	Hex, H.	Belt	5, 10	31"	3½"	26 × 2½ C.	49"	Rigid	Hand	210	£56 0
*Rex	4 Rex	84½ × 95	532	M. S.S.	B. & B.	Rex cone clutch	Belt	Adjustable	31"	3½"	26 × 2½ C.	49"	Rigid	Hand	190	£50 0
*Rex	4 Rex	84½ × 95	532	M. S.S.	B. & B.	—	Belt	Adjustable	30"	3½"	26 × 2½ C.	50"	Rigid	—	180	£46 0
*Rex-Jap	3½ J.A.P.	85 × 85	482	M. O.	H.C.	—	Belt	—	30"	4"	26 × 2½ K.	—	Spring	Hand	—	—
Rex-Jap	4 J.A.P.	85 × 95	539	M. O.	H.C.	Sturmev-A., H.	Belt	4, 6, 8½	30"	4"	26 × 2½ K.	50"	Spring	Foot	215	—
Roulette	2½ Roulette	70 × 76	292	M. S.S.	B. & B., H.C.	—	Belt	5½ to 8	30"	8"	26 × 2½ D.	50"	Rigid	Foot	130	—
Roulette	4 Roulette	89 × 96	597	M. S.S.	B. & B., H.C.	To order	Belt	—	30½"	4"	26 × 2½ D.	52½"	Rigid	Foot	200	£55 5
Rover	3½ Rover	85 × 88	499	M. S.S.	B. & B., H.C.	Armstrong, H.	Belt	4, 6, 9½	30"	4"	26 × 2½ D.	52"	Rigid	Foot	135	—
Royal Ruby	2½ J.A.P.	70 × 76	292	M. S.S.	B. & B., H.C.	—	Belt	—	30½"	6"	26 × 2½ D.	52"	Rigid	Foot	200	—
Royal Ruby	3½ J.A.P.	85 × 85	482	M. S.S.	B. & B., H.C.	Roc, H.	Belt	5, 9	31"	4"	26 × 2½ D.	56"	Rigid	Hand	200	—
Royal Ruby	3½ T.T. J.A.P.	—	—	M. O.	B. & B., H.C.	—	Belt	—	30"	3½"	26 × 2½ D.	54"	Rigid	Foot	170	—

\* N.L.G.: Or Sturmev-Archer hub same price.

\* Pilot: Armstrong three-speed hub, £10 10s. extra.

\* O.K.: N.S.U. gear to order.

\* Premier: 2½ h.p. with single speed, £8 less; F.E. clutch, £2 less; 3½ h.p. with single-speed, £8 less; generator, horn, rear light, and registration, all ready for the road.

\* Regal Precision: Sturmev-Archer hub and belt drive, same price.

\* Rex-Jap: Rex hub, two-speed, same price.

\* N.S.U.: N.S.U. gear extra.

\* Portland: This price includes Jones speedometer, head lamp.

\* Premier: 2½ h.p. with single speed, £8 less; F.E. clutch, £2 less; 3½ h.p. with single-speed, £8 less; generator, horn, rear light, and registration, all ready for the road.

\* Regal Precision: Sturmev-Archer hub and belt drive, same price.

\* Rex-Jap: Rex hub, two-speed, same price.

\* N.U.T.: Can be supplied single.



## SINGLE-CYLINDER BICYCLES (Continued).

Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburettor.	Change Speed Gear.	Transmission.	Gear Ratios to 1.	Saddle Height from Ground.	Crank Clearance.	Standard Size of Tyres.	Length of Wheel-base.	Stand-ard Frame, Staying.	Foot or Hand Staying.	Weight, Unladen, lbs.	Price.
*Rudge	3½ Rudge	85 × 88	499	M., O.	Senspray, H.C.	—	Belt 7/8	—	31"	4½"	26 × 2½ D.	54"	Rigid	Foot	184	£48 15
Rudge T.T.	3½ Rudge	85 × 88	499	M., O.	Senspray, H.C.	—	Belt 7/8	3½ to 7½	31"	4½"	26 × 2½ D.	54"	Rigid	Foot	180	£48 15
Rudge Multi	3½ Rudge	85 × 88	499	M., O.	Senspray, H.C.	—	Belt 7/8	3½ to 7½	31"	4½"	26 × 2½ D.	54"	Rigid	Foot	220	£60 0
Rudge Multi	5-6 Rudge	85 × 132	750	M., O.	Senspray, H.C.	—	Belt 7/8	3½ to 7½	31"	4½"	26 × 2½ D.	54"	Rigid	Foot	235	£70 0
Samson	3½ Precision	85 × 88	499	M., S.S.	B. & B., H.C.	Albion 2-sp., H.	Belt 7/8	4½, 8	31"	4"	26 × 2½ C.	52"	Rigid	Hand	220	£55 0
S.I.A.M.T.	2½ S.I.A.M.T.	68 × 72	261	O.	S.I.A.M.T.	—	Belt 7/8	5½	29"	5"	26 × 2 M.	47½"	Rigid	—	—	£36 0
*Singer	2½ Singer	69 × 80	299	M., S.S.	B. & B.	Singer, C.	B. & G.	7, 11	31"	5"	26 × 2 D.	50"	Rigid	Foot	—	£48 15
Singer	3½ Singer	85 × 88	499	M., S.S.	B. & B.	Free-engine	Belt	5	31"	4"	26 × 2 D.	51½"	Rigid	Foot	—	£55 0
Singer	4½ Singer	88 × 95	558	M., S.S.	B. & B.	Singer, C.	B. & G.	5½, 7½	31"	4"	26 × 2 D.	51½"	Rigid	Foot	—	£65 0
*Star	4½ Star	87½ × 100	600	M.	Multi-jet	Star, C.	Chain	4, 6, 9	32"	5"	26 × 2½ W.	51"	Rigid	Foot	—	—
Stuart	2½ Stuart 2-str.	71 × 75½	299	—	Amac	Sturmev-A., H.	Belt 7/8	4, 6, 8½	30"	5"	26 × 2 D.	50"	Rigid	Foot	155	£48 0
Sun	2½ Precision	70 × 76	270	S.S.	B. & B.	Sturmev-A., H.	Belt 7/8	4, 6, 8½	31"	6½"	26 × 2 D.	50"	Rigid	Foot	—	£36 0
Sun	3½ Precision	85 × 88	499	S.S.	B. & B.	Sturmev-A., H.	Belt 7/8	4, 6, 8½	31"	6"	26 × 2 D.	55"	Rigid	Foot	—	£53 10
Sun	3½ J.A.P.	85 × 85	482	S.S.	B. & B.	Sturmev-A., H.	Belt 7/8	4, 6, 8½	31"	4½"	26 × 2 D.	55"	Rigid	Foot	—	£55 10
Sun	4½ Precision	89 × 96	597	M., S.S.	B. & B.	Sturmev-A., H.	Belt 1"	4, 6, 8½	31"	4½"	26 × 2 D.	55"	Rigid	Foot	—	£58 10
Sunbeam	2½ Sunbeam	75 × 79	349	M., S.S.	Amac, H.C.	Swan, C.	Chain	5, 3, 10, 4	30"	5"	26 × 2½ H.	52½"	Rigid	Foot	175	£63 0
*Swan	3½ J.A.P.	85 × 85	482	M., S.S.	Senspray, H.C.	—	Chain	5, 8	30"	4½"	26 × 2½ D.	57"	O. S.	Hand	200	£69 0
Swift	3½ Swift	86 × 85	494	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 7/8	5, 7, 10	30"	4½"	26 × 2½ D.	53½"	Rigid	Foot	212	—
Swift	3½ Swift	86 × 85	494	M., S.S.	B. & B., H.C.	—	Belt 7/8	4 to 5½	30"	4½"	26 × 2½ D.	53½"	Rigid	Foot	200	—
Torpedo	1½ Torpedo	58 × 72	190	M., O.	Torpedo, A.	Sturmev-A., H.	Chain	—	28"	8"	24 × 1½ D.	48"	Rigid	Foot	75	—
*Torpedo	2½ Torpedo	70 × 76	292	M., S.S.	B. & B., H.C.	—	Belt 7/8	6	29"	4½"	26 × 2 D.	50"	Rigid	Foot	110	£37 0
*Torpedo	3½ Torpedo	85 × 88	499	M., S.S.	B. & B., H.C.	—	Belt 7/8	6	30"	5½"	26 × 2 D.	53"	Rigid	Foot	178	£46 0
Torpedo	4½ Torpedo	89 × 96	597	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 1"	4½, 7, 11	30"	4½"	26 × 2½ D.	54"	Rigid	Foot	210	£62 0
*Triumph	3½ Triumph	85 × 88	499	M., S.S.	Ovn, H.C.	Free-engine	Belt 7/8	3½ to 6½	31"	4"	26 × 2½ C.	52½"	Rigid	Foot	176	£55 10
" T.T.	3½ Triumph	85 × 88	499	M., S.S.	Ovn, H.C.	—	Belt 7/8	3½ to 5	29"	4"	26 × 2½ D.	50½"	Rigid	—	—	£49 5
" T.T. Racer	3½ Triumph	85 × 88	499	M., S.S.	Ovn, H.C.	—	Belt 7/8	3½ to 4½	29"	4"	26 × 2½ D.	50½"	Rigid	—	—	£49 5
*Trump-Jap	3½ J.A.P.	85 × 85	482	M., S.S.	Amac, H.C.	—	Belt 7/8	3½ to 5½	31"	4½"	26 × 2½ H.	53"	Rigid	—	—	£48 5
Trump-Jap T.T.	3½ J.A.P.	90 × 77½	492	M., O.	Amac, H.C.	—	Belt 7/8	3½ to 5½	31"	4½"	26 × 2½ H.	53"	Rigid	—	—	£50 10
Veloce	2½ Veloce	70 × 76	292	M., O.	Amac	Veloce 2-speed	Belt 7/8	5, 5, 9, 35	30"	5"	26 × 2½ D.	55"	Rigid	Foot	—	£50 8
Veloce	3½ Veloce	85 × 88	499	M., S.S.	B. & B., H.C.	—	Belt 7/8	—	30"	4½"	26 × 2½ D.	55"	Rigid	Hand	—	£45 3
Victoria	2½ Precision	70 × 77	293	M., S.S.	B. & B., H.C.	—	Belt 7/8	4 to 6	32"	6"	26 × 2 D.	52"	Rigid	Foot	170	£35 0
Victoria	3½ Precision	85 × 88	499	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 1"	3½ to 5½	32"	6½"	26 × 2½ D.	54"	Rigid	Foot	190	£38 0
Victoria	4½ Precision	89 × 96	597	M., S.S.	Amac, H.C.	—	Belt 1"	5, 7, 10	32"	4½"	26 × 2½ D.	54"	Rigid	Foot	240	£51 0
Wilkinson-Wooler	2½ Wilkinson-W.	76 × 76	348	—	B. & B., H.C.	Wooler vari.	Belt 7/8	4½ to 7	26"	6"	26 × 2 Con.	54"	Spring Rigid	—	120	—
Win-Precision T.T.	3½ Precision	85 × 88	499	M., S.S.	B. & B., H.C.	—	Belt 7/8	3½ to 5½	29"	5"	26 × 2½ D.	53"	Rigid	—	185	£42 0
*Win-Precision	3½ Precision	85 × 88	499	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 7/8	5, 7, 10	29"	5"	26 × 2½ H.	54"	Rigid	Foot	200	£52 0
Win-Precision	4½ Precision	89 × 96	597	M., S.S.	B. & B., H.C.	Roc 2-speed	Belt 1"	5, 10	31"	5"	26 × 2½ H.	54"	Rigid	Hand	220	£55 10
*Wulfruna	2½ standard	65 × 70	232	M., S.S.	Amac	Wulfruna, C.	Chain	4, 10	31"	6"	26 × 2 H.	51"	Rigid	Hand	149	£44 2
Wulfruna	2½ standard	76 × 65	295	M., O.	Senspray	Wulfruna, C.	Chain	4½, 10	31"	6"	26 × 2½ H.	51"	Rigid	Hand	149	£46 4
Wulfruna	3½ standard	77 × 81	349	M., S.S.	B. & B., Amac	Wulfruna, C.	Chain	4½, 10	32"	5½"	26 × 2½ H.	52"	Rigid	Hand	180	£48 6
Wulfruna	3½ standard	84 × 89	493	M., S.S.	B. & B., Amac	Wulfruna, C.	Chain	4½, 10	32"	5½"	26 × 2½ D.	53"	Rigid	Hand	195	£57 15
*Zenith	3½ J.A.P.	85½ × 85	488	M., S.S.	To order	Gradua, E.	Belt 1"	4 to 7½	29"	4½"	26 × 2½ H.	54"	Rigid	—	180	£55 13

\* Rudge: Free engine, £6 5s. extra.  
 \* Stuart: Single speed, £10 10s. less.  
 \* Sun: Single speed, £9 less.

\* Swan: Or 3½ h.p. Precision, 85 × 88 mm.  
 \* Torpedo B.S.A. free engine clutch,  
 £6 extra.  
 \* Triumph: 3½ h.p. roadster with free engine, £6 5s. extra.  
 \* Torpedo B.S.A. free engine clutch, £10 extra.

\* Victoria: N.S.U., Sturmev-Archer, or B.S.A. gears, £9 extra; Mabon clutch, £3 10s. extra.  
 \* Win-Precision:  
 Villiers F.E. clutch, single speed, £4 15s. less.

\* Wulfruna: Armstrong hub, £2 2s. less to each model; single gear, £10 10s. less; both with belt drive.  
 \* Zenith:

Foot or hand starting, £7 7s. extra.



## MULTI-CYLINDER BICYCLES.

Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburettor.	Change Speed Gear.	Transmission.	Gear Ratios to 1.	Saddle Height from Ground.	Crank Case Clearance.	Standard Size and Make of Tyres.	Length of Wheel-base.	Stand-ard Frame.	Foot on Hand Starting.	Weight, Unladen, lbs.	Price.
A.J.S.	6 A.J.S. 50°	74 × 81	696	M., S.S.	Amac, H.C.	A.J.S. 3-sp., C. Armstrong, H. 2-speed, C. N.S.U. 2-sp., E.	Chain Belt 1	4½, 7½, 12½	30½"	5½"	650 × 75 H. 26 × 2 D. Dunlop ...	57"	Rigid	Foot	—	£72 9
Alldays	3 A. & O.	53 × 77	340	M., O.	—	—	Chain Belt 1	4½, 7½	30"	4½"	26 × 2 D. Dunlop ...	49"	Rigid	Foot	145	£52 10
Ariel	7 Ariel	85 × 88	998	M., S.S.	Amac, A. ...	—	Chain Belt 1	4½, 7½	30"	5"	26 × 2½ K.	54"	Rigid	Hand	190	£84 0
A.S.L.	5 Fatmir	70 × 80	616	M., O.	—	—	Chain Belt 1	—	29"	7"	26 × 2½ K.	53"	Spring	Foot	—	£67 10
*Bat T.T.	5-6 J.A.P.	76 × 85	770	M., S.S.	J.A.P. ...	—	Belt 1	To order	30"	3"	26 × 2½	54"	Rigid	—	160	£62 0
bat	5-6 J.A.P.	76 × 85	770	M., S.S.	Amac, H.C.	Bat, C. ...	Chain	4½, 9	32"	3½"	26 × 2½	54"	Spring	Foot	220	£73 0
Bat	7-8 J.A.P.	85 × 85	964	M., S.S.	Amac, H.C.	Bat, C. ...	Chain	4½, 9	32"	3½"	26 × 2½	54"	Spring	Foot	230	£73 0
Brough	6 Brough 50°	77 × 88	820	M., S.S.	Senspray, H.C.	—	Belt 1	2½, 4½	29½"	4½"	26 × 2½ J.B.	49"	Rigid	—	180	£55 0
Brough	6 Brough 50°	77 × 88	820	M., S.S.	Senspray, H.C.	Armstrong, H.	Belt 1	3½, 12	30½"	4½"	26 × 2½ J.B.	51"	Rigid	Hand	198	£65 10
Brough	6 Brough	77 × 88	820	M., S.S.	B. & B., A. ...	Armstrong, H.	Belt 1	3½, 12	29½"	4½"	26 × 2½ J.B.	51"	Open	Hand	196	£70 0
Campion	6 J.A.P. 50°	—	—	M., S.S.	B. & B. ...	G.H., C. ...	Chain	4, 8	30"	4"	26 × 2½ D.	55"	Rigid	Hand	—	£68 0
Campion	6 J.A.P. 50°	—	—	M., S.S.	B. & B. ...	Armstrong, H.	Belt 1	3½, 5½, 7½	30"	4"	650 × 75 D.	73"	Rigid	Foot	—	£67 0
Campion	8 J.A.P. 50°	85 × 85	964	M., S.S.	B. & B. ...	G.H., C. ...	Chain	4, 8	30"	4"	26 × 2½ D.	55"	Rigid	Hand	—	£70 0
Centaur	2½ Centaur	60 × 60	340	M., O.	Amac, H.C.	Armstrong	Belt 1	4½, 8½	—	—	26 × 2 D.	52"	Rigid	Foot	136	£52 10
*Clyde	6 J.A.P. 50°	76 × 85	770	M., S.S.	Amac, H.C.	G.H., C. ...	Chain	4½, 8½	30½"	—	26 × 2½ D.	53½"	Rigid	Foot	198	£52 10
Clyno	5-6 Clyno	76 × 82	744	M., S.S.	B. & B., A. ...	Clyno, C. ...	Chain	4½, 8½	30"	6"	26 × 2½ H.	58"	Rigid	Foot	—	£75 0
Corah	3 J.A.P. 50°	60 × 76	430	M., S.S.	B. & B., H.C.	—	Belt 1	—	28"	5"	26 × 2½ H.	52"	Rigid	—	170	£51 9
Corah	6 J.A.P. 50°	76 × 85	770	M., S.S.	B. & B., H.C.	Corah, C. ...	Chain	5, 9	28"	4"	26 × 2½ H.	53½"	Rigid	Foot	200	£67 4
Dene	6 Precision 50°	75 × 85	751	M., O.	Amac	Armstrong	Belt 1	—	29½"	4½"	26 × 2½ H.	53"	Rigid	Foot	195	£65 0
*Dot	6 J.A.P. 50°	76 × 85	770	M., S.S.	Amac, A. ...	V.S. 2-speed	Belt 1	4, 8	31"	4½"	26 × 2½ H.	50"	Rigid	Hand	200	£69 6
Dot	8 J.A.P. 50°	85 × 85	964	M., S.S.	Amac, A. ...	3-speed, C.	Com.	4, 7, 10	31"	4½"	26 × 2½ H.	53"	Rigid	Foot	210	£73 10
*Douglas	2½ Douglas 180°	60½ × 60	350	M., O.	Douglas, H.C.	Douglas, C.	Com.	5½, 8	29"	—	Hutchinson	51"	Rigid	Foot	130	£52 0
Douglas Ladies	2½ Douglas 180°	60½ × 60	350	M., O.	Douglas, H.C.	Douglas, C.	Com.	5½, 8	29"	—	Hutchinson	51"	Open	Foot	130	£53 0
Douglas T.T.	2½ Douglas 180°	60½ × 60	350	M., O.	Douglas, H.C.	Douglas, C.	Com.	5½, 8	29"	—	Hutchinson	51"	Rigid	—	—	£48 0
Edmund	3 J.A.P.	60 × 76	430	M., O.	B. & B., H.C.	Edmund, C.	Com.	—	31"	5½"	26 × 2½ C.	52"	Spring	Hand	195	—
Edmund	5-6 Fatmir	70 × 80	616	M., O.	B. & B., H.C.	Albion 2-sp., H.	Belt 1	—	31"	5"	26 × 2½ C.	52"	Spring	Hand	210	£67 4
Edmund	6 J.A.P.	76 × 85	770	M., O.	B. & B., H.C.	V.S.	Belt 1	—	31"	5"	26 × 2½ C.	52"	Spring	Hand	210	£75 10
Enfield	2½ Enfield 60°	54 × 75	344	M., O.	Amac, H.C.	Enfield 2-sp., C.	Chain	5, 8, 7, 8	—	—	26 × 2½ C.	—	Rigid	Foot	—	£50 0
Enfield	3 Enfield	60 × 75	425	M., O.	Amac, H.C.	Enfield 2-sp., C.	Chain	5, 7, 8	—	—	26 × 2½ D.	—	Rigid	Foot	—	£52 10
E.Y.M.E.	6 Precision	75 × 85	751	M., S.S.	B. & B., H.C.	To order	Belt 1	To order	—	—	26 × 2½	—	Rigid	—	—	£47 0
E.Y.M.E.	7-9 Blumfield	80 × 95	952	M., S.S.	B. & B., H.C.	To order	Belt 1	To order	—	—	26 × 2½	—	Rigid	—	—	£52 0
*F.N. 4-cylinder Forward	5-6 F.N. 2½ Forward 50°	52½ × 57	496	A.O.	F.N., A. ...	F.N.	Gear Belt 1	5½, 9	30"	7"	26 × 2½	54"	Rigid	Foot	200	£65 0
Grandex	6 Precision	75 × 85	751	M., S.S.	Amac	Sturmev-A., H.	Belt 1	—	28"	—	26 × 2 H.	—	Open	Foot	112	£39 18
Hazlewood	3½ J.A.P. 50°	60 × 76	430	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 1	4, 6, 8	29"	6"	26 × 2½ H.	53"	Rigid	Foot	200	£65 12
Hazlewood	5 J.A.P. 50°	70 × 77	584	M., O.	B. & B., H.C.	Armstrong, C.	Com.	4, 6, 8	29"	6"	26 × 2½ H.	54½"	Rigid	Foot	200	£53 13
*Henderson 4-cyl.	7 Henderson	65 × 76	1022	M., S.S.	Schabler, A.	—	Chain	3½	31"	4½"	28 × 2½ Dia.	65"	Rigid	Hand	225	£67 10
Hobart	4 Hobart	68 × 76	552	M., S.S.	B. & B., H.C.	Armstrong, H.	Belt 1	5, 7, 10	30½"	5½"	26 × 2½ H.	56"	Rigid	Foot	180	£58 16
*Humber	2½ Humber 45°	60 × 60	340	M., O.	B. & B. ...	—	Belt 1	5 to 7	—	—	26 × 2 D.	51"	Rigid	—	136	£43 10
Indian	7 Indian 42°	82½ × 93	994	O.	Indian, A. ...	Indian, C. ...	Chain	To order	30"	5½"	28 × 3 H.	56"	Spring	Foot	240	£70 0
*Ireland	4 Blumfield	67 × 83	586	M., S.S.	To order	—	Belt	—	—	—	26 × 2½ D.	—	—	—	—	£55 0

\*Bat: Armstrong three-speed hub to order; 8 h.p. engine, £2 extra.

\*Clyde: Single gear and belt drive, £12 less.

\*F.N.: Price provisional.

\*Henderson: Two-speed extra, Diamond tyres.

\*Humber: Free engine, £4 extra; Sturmev-Archer three-speed

hub, £9 extra.

\*Douglas: Without

three-speed

hub, £10 extra.



## MULTI-CYLINDER BICYCLES (Continued).

Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburettor.	Change Speed Gear.	Transmission.	Gear Ratios to I.	Saddle Height from Ground.	Crank Case Clearance.	Standard Size of Tyres.	Length of Wheel-base.	Stand-ard Frame.	Foot or Hand Starting.	Weight, Unladen, lbs.	Price.
Ivy .....	3 Ivy .....	60 x 76	430	M, O.	B. & B. ....	Free-engine ..	Belt ..	—	31"	4 1/2"	26 x 2 1/2 D.	51"	Rigid	Foot	140	£42 10
*Ixon .....	3 1/2 J.A.P. 50° ..	60 x 76	430	S.S. or O.	Amac .....	Sturmev-A. ..	Belt 3/4"	4 1/2"	31"	4 1/2"	26 x 2 1/2 H.	51"	Rigid	Foot	150	£54 0
Kynoch .....	6 J.A.P. 50° ..	75 x 75	662	M, S.S.	B. & B., H.C.	Sturmev-A., H.	Belt 1"	4 1/2, 6 1/2, 9 1/2	30"	4 1/2"	26 x 2 1/2 H.	54"	Rigid	Foot	220	£69 6
Lea-Francis ..	3 1/2 J.A.P. 50° ..	60 x 76	430	M, S.S.	Automatic ..	Lea-Francis, C.	Chain	5, 9	30"	5 1/2"	26 x 2 1/2 D.	54"	Rigid	Foot	—	£68 5
Levis 2-stroke ..	2 1/2 Levis 0° ..	58 x 66	348	—	Amac, H.C.	—	Com.	5 1/2	28 1/2"	4 1/2"	26 x 2 H.	53 1/2"	Rigid	—	110	£46 4
Martin .....	6 J.A.P. 50° ..	76 x 85	770	M, O.	Amac, H.C.	To order .....	Belt 1"	4, 6, 8	28 1/2"	4 1/2"	26 x 2 1/2 H.	—	Rigid	Foot	215	—
Martin .....	8 J.A.P. 50° ..	85 x 85	976	M, O.	Amac, H.C.	To order .....	Belt 1 1/8"	4, 6, 8	28 1/2"	4 1/2"	26 x 2 1/2 H.	58"	Rigid	Foot	225	£63 0
Matchless .....	2 1/2 J.A.P. 50° ..	70 x 64 1/2	496	M, O.	H.B. ....	Armstrong, H.	Com.	4, 9	30"	4 1/2"	26 x 2 1/2 H.	60"	Rigid	—	170	£56 14
*Matchless .....	6 50° ..	76 x 85	770	S.S. ....	H.B. ....	Matchless, C.	Belt 1 1/8"	3 1/2 to 5 1/2	30"	4 1/2"	26 x 2 1/2 H.	60"	Rigid	Foot	220	£73 10
*Matchless .....	8 50° ..	85 x 85	964	S.S. ....	H.B. ....	—	Chain	4, 8 1/2	30 1/2"	5 1/2"	26 x 2 ..	52"	Rigid	Hand	120	—
Moto-Réve .....	3 M.R. 62° ..	53 x 77	340	M, O.	—	C. ....	Chain	—	30 3/4"	4 1/2"	26 x 2 1/2 ..	56"	Rigid	Hand	150	—
Moto-Réve .....	4 M.R. 58° ..	63 x 80	498	M, O.	—	—	Chain	—	30 3/4"	4 1/2"	26 x 2 1/2 ..	56"	Rigid	Hand	150	—
Motosacoche ..	2 1/2 Motosacoche	54 x 75	344	M, S.S.	Amac, Dufaux	Enfield, C. ....	Chain	5 1/2 to 8	31"	6 1/2"	26 x 2 H.	54"	Rigid	Hand	150	—
Motosacoche ..	3 1/2 Motosacoche	64 x 77	496	M, S.S.	Amac, Dufaux	Enfield, C. ....	Chain	—	31"	6 1/2"	26 x 2 ..	54"	Rigid	Hand	160	—
New Comet .....	6 Precision 50° ..	75 x 85	751	M, O.	Amac, A. ....	Haden 3-sp., C.	Com.	4 to 16	29"	4 1/2"	26 x 2 1/2 ..	54"	Rigid	to order	230	£72 0
New Comet .....	8 J.A.P. 50° ..	85 x 85	950	M, O.	Amac, A. ....	Haden 3-sp., C.	Com.	4 to 16	29"	4 1/2"	26 x 2 1/2 ..	54"	Rigid	to order	235	£75 0
New Imperial ..	6 J.A.P. ..	76 x 85	770	M, O.	Amac, H.C.	Roe 2-sp., H.	Belt 1"	5, 10	28"	4"	26 x 2 1/2 H.	54"	Rigid	Hand	220	£65 0
N.L.G. ....	6 J.A.P. 50° ..	78 x 85	770	M, S.S.	B. & B., H.C.	Armstrong, H.	Belt 1"	4, 6, 9 1/2	29"	3 1/2"	26 x 2 1/2 H.	50"	Rigid	Foot	225	£65 10
*N.S.U. ....	3 N.S.U. ....	58 x 75	396	M, O.	N.S.U. ....	N.S.U., C. ....	Belt 1"	6	30 1/2"	6"	26 x 2 Con.	54"	Spring	Pedal	140	£45 0
*N.S.U. ....	6 N.S.U. ....	75 x 94	830	M, O.	N.S.U. ....	N.S.U., E. ....	Belt 1"	3 1/2 or 4	30"	5"	26 x 2 1/2 Con.	56"	Spring	Pedal	200	£58 0
*N.S.U. ....	6 N.S.U. ....	60 x 60	340	M, S.S.	Amac .....	Armstrong, H.	Belt 1"	4, 6, 8	29"	4"	26 x 2 ..	52"	Rigid	Hand	150	—
N.U.T. ....	2 1/2 J.A.P. ....	60 x 61 1/2	348	M, O.	Amac .....	—	Belt 1"	4	27"	4"	26 x 2 ..	50"	Rigid	—	140	—
*N.U.T. ....	3 1/2 J.A.P. ....	60 x 76	430	M, S.S.	Amac .....	Armstrong, H.	Belt 1"	4, 6, 8	29"	4"	26 x 2 ..	52"	Rigid	Hand	150	—
O.K. ....	6 J.A.P. 50° ..	76 x 85	770	M, S.S.	Amac, H.C.	O.K., C. ....	Chain	4 1/2, 8 1/2	30"	5"	26 x 3 H.	48"	Rigid	Hand	—	—
*Pilot .....	6 J.A.P. ....	76 x 85	770	M, O.	Amac .....	—	Belt 1 1/8"	—	28"	4"	26 x 2 1/2 H.	53"	Rigid	Hand	—	£55 0
*Pilot .....	8 J.A.P. ....	85 x 85	964	M, O.	Amac .....	—	Belt 1 1/8"	—	28"	4"	26 x 2 1/2 H.	53"	Rigid	Hand	—	£55 0
Premier .....	7-9 Premier 50° ..	85 x 88	998	M, O.	B. & B. ....	Premier, C. ....	Com.	5, 10	30"	—	26 x 2 1/2 ..	—	Rigid	Hand	—	£75 0
*P.V. ....	3 1/2 J.A.P. ....	60 x 76	430	M, O.	Amac, H.C.	Armstrong, H.	Belt	4 1/2 to 1	28"	6 1/2"	26 x 2 1/2 H.	53"	Spring	—	140	£35 0
*P.V. ....	5 J.A.P. ....	70 x 76	584	M, O.	Amac, H.C.	Armstrong, H.	Belt	4 1/2 to 1	28"	6"	26 x 2 1/2 H.	53"	Spring	—	160	£63 0
*P.V. ....	6 J.A.P. ....	76 x 85	770	M, O.	Amac, H.C.	Armstrong, H.	Belt	4 1/2 to 1	28"	5"	26 x 2 1/2 H.	5 1/2"	Spring	—	185	£65 0
*Rex .....	6 Rex 48° ..	77 1/2 x 95	896	M, S.S.	B. & B. ....	Rex, H. ....	Belt 1 1/8"	3 1/2 to 5 1/2	31"	3 1/2"	26 x 2 1/2 Con.	49"	Rigid	Hand	220	£62 10
*Rex .....	6 Rex 48° ..	77 1/2 x 95	896	M, S.S.	B. & B. ....	Rex cone clutch	Belt 1"	Adjustable	31"	3 1/2"	26 x 2 1/2 Con.	49"	Rigid	Hand	210	£54 0
*Rex .....	6 Rex 48° ..	77 1/2 x 95	896	M, S.S.	B. & B. ....	—	Belt 1"	Adjustable	29"	3 1/2"	26 x 2 1/2 Con.	50"	Rigid	—	—	£50 0
Rex-Jap .....	3 1/2 J.A.P. 50° ..	76 x 74 1/2	499	M, O.	H.C. ....	—	Belt 1"	4 to 6	28"	3 1/2"	26 x 2 1/2 Con.	—	Spring	—	200	—
Rex-Jap .....	6 J.A.P. 50° ..	76 x 85	770	M, S.S.	H.C. ....	Rex, H. ....	Belt 1 1/8"	4, 8	30"	4"	650 x 65 K.	—	Spring	Hand	240	—
Rex-Jap .....	7 J.A.P. 50° ..	90 x 77 1/2	986	M, O.	H.C. ....	—	Belt 1"	4 to 6	28"	4"	650 x 65 K.	—	Spring	—	220	—
Rex-Jap .....	8 J.A.P. 50° ..	85 x 85	964	M, S.S.	H.C. ....	Rex, H. ....	Belt 1 1/8"	4, 8	30"	4"	650 x 65 K.	—	Spring	Hand	260	—
Royal Ruby .....	3 1/2 J.A.P. 50° ..	60 x 76	430	M, S.S.	B. & B., H.C.	—	Belt 1"	5 to 9	30 1/2"	6 1/2"	26 x 2 D.	50"	Rigid	Foot	170	—
Royal Ruby .....	6 J.A.P. 50° ..	—	—	M, S.S.	B. & B., H.C.	Roe, H. ....	Belt 1"	5 to 9	31"	3 1/2"	26 x 2 1/2 ..	56"	Rigid	Hand	203	—
Royal Ruby .....	8 J.A.P. 50° ..	85 x 85	964	M, S.S.	B. & B., H.C.	Roe, H. ....	Belt 1"	5 to 9	31"	3 1/2"	26 x 2 1/2 ..	56"	Rigid	Hand	210	—
Scott 2-stroke ..	3 1/2 Scott 0° ..	73 x 64	536	—	Scott, A. ....	Scott, C. ....	Chain	4 1/2, 7 1/2	30"	5"	26 x 2 1/2 P.	53 1/2"	Open	Foot	196	£68 5
Sparkbrook .....	6 J.A.P. 50° ..	76 x 85	770	M, S.S.	—	Sparkbrook, C.	Com.	4 1/2, 7 1/2	30"	4 1/2"	26 x 2 1/2 D.	57"	Rigid	Foot	—	—

\* N.S.U. : N.S.U. gear.

\* Rex : Chain drive, £5 extra.

\* Pilot : Armstrong three-speed hub, £10 10s. extra. P.V. : Armstrong three-speed hub, £10 10s. extra.

\* Matchless : 6 h.p. with Gradua gear, £10 10s. extra; 8 h.p. with two-speed hub and double belt drive, same price.

\* Ixon : Price provisional.

\* N.U.T. : Can be supplied single-gear.



## MULTI-CYLINDER BICYCLES (Continued).

Name of Motor Bicycle.	H.P. and Name of Engine.	Bore and Stroke, mm.	Cubic Capacity, c.c.	Inlet Valves.	Name of Carburettor.	Change Speed Gear.	Transmission.	Gear Ratios to 1.	Saddle Height from Ground.	(Rank Clear-ance.	Standard Size of Tyres.	Length of Wheel-base.	Stand-ard Franc.	Foot or Hand Starting.	Weight, Un-laden, lbs.	Price.
Stella 2-stroke ..	6 Stuart 180°	78 x 82	783	—	Amac, H.C.	Stuart 2-sp., C.	Worm	4, 7½ .....	31"	5"	26 x 2½ H.	58"	Rigid	Foot	260	£73 0
Trump-Jap .....	3½ J.A.P. 50°	60 x 76	430	M., S.S.	Amac, H.C.	—	Belt 7"	4 to 6 .....	31"	4½"	26 x 2½ H.	53"	Rigid	—	180	£54 0
*Trump-Jap .....	6 J.A.P. 50°	76 x 85	770	M., S.S.	Amac, H.C.	—	Belt 1"	3½ to 5½ ..	31"	4½"	26 x 2½ H.	54"	Rigid	—	220	£60 5
Trump-Jap .....	8 J.A.P. 50°	85 x 85	964	M., S.S.	Amac, H.C.	—	Belt 1"	3½ to 5½ ..	31"	4½"	26 x 2½ H.	54"	Rigid	—	220	£62 5
Wilkinson T.M.C.	7 T.M.C. 4-cyl.	60 x 75	848	M., S.S.	Stewart, A.	T.M.C. 3-sp., C.	Bevel	4½, 6½, 11½	24"	7"	26 x 2½ Con.	68"	Spring	Hand	320	—
*Williamson .....	8 Douglas .....	85 x 85	964	M., S.S.	H.C. ....	Douglas, C.	Chain	4½, 7 .....	30½"	4½"	26 x 3 H.	58"	Rigid	Hand	260	£75 0
Wulfruna .....	6 J.A.P. ....	76 x 85	770	M., O.	Amac or B.B.	Wulfruna, C.	Chain	4½, 10 .....	32"	5½"	26 x 2½ .....	54"	Rigid	Hand	—	£68 5
*Zenith .....	6 J.A.P. 50°	76 x 85	770	M., S.S.	To order .....	Gradua, B.	Belt 1"	3½ to 7 ..	29"	4"	26 x 2½ H.	54"	Rigid	—	210	£72 9
*Zenith .....	8 J.A.P. 50°	85½ x 85	976	M., S.S.	To order .....	Gradua, E.	Belt 1"	3½ to 7 ..	29"	4"	26 x 2½ H.	54"	Rigid	—	215	£74 11

\* Trump-Jap: Armstrong three-speed hub, £9 5s. extra. \* Williamson: Water-cooled, £7 extra. \* Zenith: Foot or hand starting, £7 7s. extra.

## THREE-WHEELERS, CYCLECARS, AND SIDECARS.

Name of Machine and No. of Cylinders.	H.P. and Name of Engine.	Bore and Stroke.	Cubic Capacity.	Cooling.	Name of Carburettor.	No. of Speeds.	Gear Ratios to 1.	Transmission.	Dimensions.				Make and Size of Tyres.	No. of Wheels.	Weight of Chassis.	Price.
									Ex-teme Height	Ex-teme Length	Ex-teme Width	Gro'nd Clear-ance.	Wheel-base.	Track.		
A.C. (1) .....	5-6 A.C. ....	95 x 102	e.e. 723	Air	B. & B. ....	2	4½, 9 .....	Chain	ft. in. 3 8	ft. in. 9 1	ft. in. 5 2	in. 5½	ft. in. 6 2	ft. in. 4 6	lbs. 560	£92 10
Alldays Se. (2) ..	6-S.A. & O. ....	85 x 88	998	Air	To order .....	3	4, 7, 9½ .....	Chain	—	—	—	—	—	—	220	£89 5
Autotrix (2) .....	5-6 Fafair 45°	70 x 80	616	Water	Amac or S.P.	3	4, 7, 10 .....	Chain	3 5½	9 6	4 9	7	7 0	4 3	—	£94 10
Autotrix (2) .....	8 J.A.P. 50°	85 x 85	964	Air	Amac or S.P.	3	4, 7, 10 .....	Chain	3 5½	9 6	4 9	7	7 0	4 3	—	£97 13
Brough Se. (2) ..	6 Brough 50°	77 x 88	841	Air	Senspray, H.C.	3	4 to 13 ..	Belt	—	—	—	—	—	—	—	£75 10
Calthorpe Carrier.	4½ Calthorpe ..	90 x 96	611	Air	Amac .....	2	5, 9 .....	Com.	—	—	—	4½	4 7	—	310	£68 10
Calthorpe Se. (2) ..	5-6 Calthorpe 50°	75 x 85	750	Air	Amac .....	2	5, 9 .....	Com.	—	—	—	4	4 9	—	340	£75 0
*C. & H. (2) .....	5-6 Fafair 45°	70 x 80	616	Water	B. & B., H.C.	3	4½, 7, 10½	Chain	3 6	9 2	4 9	9	6 6	4 3	420	£100 0
Crouch Carrette (2)	7-9 Crouch 60°	80 x 90	994	Water	Amac, H.C.	3 & R.	4½, 8, 14	Chain	3 8	9 6	5 0	7	7 3	4 6	616	£111 10
Eagle Se. (1) .....	3½ Eagle .....	85 x 88	499	Air	B. & B., H.C.	2	—	B. or C.	3 6	6 4	4 8	6	4 3	4 0	224	£69 6
Eagle S. (2) .....	8 Eagle 50°	85 x 88	998	Air	B. & B., H.C.	2	5, 10 .....	B. or C.	4 0	7 2	5 0	6	4 8	4 0	280	£88 4
Enfield Se. ....	6 J.A.P. 50°	76 x 85	770	Air	Amac, H.C.	2	4, 4, 7, 8	Chain	—	—	—	—	—	—	—	£84 0
Girling (1) .....	6 Girling .....	95 x 95	673	Air	Girling, A. ..	5 & R.	5½ to 16 ..	Shaft	4 10	9 0	5 7	6	7 0	4 8	672	£98 0
*Ixon Se. (1) .....	4½ Precision ..	89 x 96	597	Air	B. & B. ....	—	4½ .....	Belt 1"	2 7	6 10	—	3½	4 4	—	250	£68 10
*Ixon Se. (2) .....	6 J.A.P. 50°	76 x 85	770	Air	Amac .....	3	4½, 6, 8½	Belt 1"	2 7	7 0	—	3½	4 6	—	300	£80 0
*Ixon Se. (2) .....	8 J.A.P. 50°	85 x 85	964	Air	Amac .....	3	4½, 6, 8½	B. and C.	—	7 3	—	—	4 8	—	320	£82 10
Lambert (2) .....	8 J.A.P. 50°	85 x 85	964	Air	Amac, H.C.	3	4, 6, 9 .....	Chain	—	8 6	4 3	—	—	—	448	£103 19
Morgan Runab't	8 J.A.P. ....	85 x 85	964	Air	B. & B. ....	2	4½, 8 .....	S and C	3 0	8 5	4 8	6	6 0	3 10	280	£89 5
N. Hudson Se. (1)	3½-4 N.H. ....	85 x 88	499	Air	Automatic ..	3	5, 7, 10 ..	C and B	—	—	—	5½	4 6	—	—	£75 12

\* C. &amp; H.: With 8 h.p. Precision engine, £5 extra, and 28 lbs. heavier.

\* Ixon: Prices Provisional.





# ZENITH



**You should read this description of the new ZENITH kick-starter.**

"By far the most ingenious and interesting innovation on next year's Zenith is the free engine and kick-starter, which will be fitted to order only. In the back hub there is an Albion plate clutch controlled by a quick pitch thread, and worked by a pedal and Bowden wire from the offside footrest. This pedal is fitted with a toe release, so that the clutch may be held permanently out of engagement or instantly engaged. The brake is in this case worked from the near side footrest. The kick-starter pedal is attached to a spindle running through an eccentric bearing on a carrier slotted at the end to take the rear wheel spindle and sliding in a bearing at its forward end, so that the whole control mechanism can slide with the wheel. As regards the kick-starting device, the free-wheel, which is connected by chain to a sprocket on the rear wheel spindle, is attached to the kick starter spindle so that it may be easily dismantled if required. The eccentric bush is, of course, for facilitating the adjustment of the chain. The whole design is well carried out and reflects great credit on the company's works manager, Mr. F.

W. Barnes, who has had it under test on his own machine for some time."

*The Motor Cycle*,  
October 24th.

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This, and all the special features of the ZENITH, including the world-renowned GRADUA GEAR, will be available there for minute inspection. You cannot fail to be interested in the machine which has gained FIRSTS in every important Trial during the past season. Remember this is

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and  
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**ONE MINUTE.**

**THOS. WHITTLE & SONS, Ltd., Warrington.**



Name of Machine and No. of (cylinders).	H.P. and Name of Engine.	Bore and Stroke.	Cubic Capacity.	Cooling.	Name of Carburettor.	No. of Speeds.	Gear Ratios to 1.	Transmission.	Dimensions.				Make and Size of Tyres.	No. of Wheels.	Weight of Chassis.	Price.
									Ex-treme Height	Ex-treme Length	Ex-treme Width	Gro-nd Clear-ance.				
Phantomobile (2)	8.3	82 x 84	888	Air	Longuemare Automatic	2	5, 10	Chain	ft. in. 5 0	ft. in. 8 10	ft. in. 4 11	in. 11	ft. in. 6 3	3	672	£120 0
P.M.C. Motorette 6	P.M.C.	95 x 102	723	Water	—	2	4 to 13½	Chain	—	—	—	—	—	3	448	£105 0
*Rex Sidette (1)	4 Rex	84½ x 95	532	Air	B. & B.	2	5, 10	Belt 1½"	—	—	—	3½"	4 1	3	—	£70 0
*Rex Sidette (2)	6 Rex 48°	77½ x 95	896	Air	B. & B.	2	5, 10	Belt 1½"	—	—	—	3½"	4 9	3	—	£75 0
Rolle Sc. ....	6-7 Rolfe	—	—	—	Amac	3	—	Chain	—	—	—	—	—	3	—	£84 0
Wall Tuicariage	4½ Precision	89 x 96	597	Air	H.C.	2	5½, 10	Shaft	—	8 6	4 0	6	6 3	3	336	£94 10
Wall Parcelcar	4½ Precision	89 x 96	597	Air	H.C.	2	6½, 11	Shaft	—	8 6	4 0	6	6 3	3	336	—
Wall T'icar	6 Precision	75 x 80	706	Air	H.C.	2	5½, 9½	Shaft	—	8 6	4 0	6	6 3	3	364	£101 17
Williamson Sc(2)	8 Douglas	85 x 85	964	A. or W.	—	2	4½, 7	Chain	—	—	—	—	—	3	—	—

\*Rex Sidette: Chain drive, £3 ext.a.

## FOUR-WHEELED CYCLES.

NO. OF SPEEDS.—R. = Reverse. TRANSMISSION.—S. = Gear. S. = Shaft. C. = Chain. W. = Worm.

Name of Machine and No. of Cylinders.	H.P. and Name of Engine.	Bore and Stroke.	Cubic Capacity.	Cooling.	Name of Carburettor.	No. of Speeds.	Gear Ratios to 1.	Transmission.	Dimensions.				Make and Size of Tyres.	No. of Wheels.	Weight of Chassis.	Price.
									Ex-treme Height	Ex-treme Length	Ex-treme Width	Gro-nd Clear-ance.				
A.L.C. (2)	8 J.A.P. 50°	85 x 85	964	Air	Amac, A. ....	Var.	4 to 9	—	ft. in. 4 0	ft. in. 9 6	ft. in. 4 4	in. 8	ft. in. 4 0	4	6	£91 7
Arden (2)	8 J.A.P. 50°	85 x 85	964	Air	B. & B., H.C. ....	3 & R.	5, 8½, 12	Chain	4 0	10 0	4 4	8	3 8	4	5½	£115 10
*Ariel (2)	8 Ariel 50°	85 x 85	964	Water	Lukin, A. ....	2 & R.	5, 16	Chain	4 0	10 0	4 10	8	7 6	4	5	£140 0
Autocrat (2)	8 J.A.P. 50°	85 x 85	964	A. & fan	Amac	3 & R.	5, 7½, 11½	Sand C	3 3	10 3	4 2	9	7 6	4	6	£99 15
Autocrat (4)	10	62 x 90	1088	Water	Amac	3 & R.	4½, 7½, 11½	Sand C	3 3	10 2	4 2	9	7 6	4	6	£125 0
Automobilette (1)	6-8 Automob.	80 x 130	653	Water	Clandel-H. ....	3	—	Belt	—	—	—	—	—	4	2½	—
Automobilette (2)	9 Automob.	70 x 130	1000	Water	Clandel-H. ....	3	—	Belt	—	—	—	—	—	4	4	—
Averies (4)	8-10 Ave.ies	59 x 100	1099	Water	Marvel, A. ....	3 & R.	4, 7, 10½	Shaft	—	10 0	4 5	8	7 3	4	6	£157 10
Baby (2)	6-8 Buchet	90 x 110	—	Water	Clandel-H. ....	4 & R.	—	Sand C	—	—	—	—	—	—	—	£99 15
Beacon (2)	10 Beacon 50°	85 x 110	1248	Air	Beacon	3	4, 6½, 9	Shaft	3 4	10 0	4 6	8	7 6	4	—	£115 10
Bedelia (1)	3½ Quentin	76 x 82	372	Air	G.A., A. ....	2	—	Belt	3 11	11 0	3 6	6	8 6	4	3½	£58 16
Bedelia (1)	4½ Quentin	82 x 88	465	Air	G.A., A. ....	2	—	Belt	3 11	11 0	3 6	6	8 6	4	3½	£69 6
*Bedelia (1)	5½ B.D.	80 x 100	503	Air	G.A., A. ....	2	—	Belt	3 11	11 0	3 6	6	8 6	4	3½	£84 0
*Bedelia (2)	8-10 B.D. 99°	80 x 100	1008	Air	G.A., A. ....	2	—	Belt	3 11	11 0	3 6	6	8 6	4	3½	£100 16
Brough (2)	8 Brough 50°	85 x 95	1075	Air	Senspray, H.C.	3	4½, 7, 12	Chain	4 0	9 2	4 6	9	6 8	4	4	£100 0
*C. & H. (2)	5-6 Fafair 45°	70 x 89	616	Water	B. & B., H.C.	3	4½, 7, 10½	Chain	3 6	8 9	4 6	9	6 6	4	4	£110 0
*Chater-Lea (2)	8 Chater-Lea	85 x 95	964	Air	—	3	—	Shaft	—	—	—	—	7 6	4	—	£100 0
Chota (1)	6-8 Buckingham	89 x 120	746	Air	—	2	—	Com.	—	—	—	—	6 4	4	3½	—
Crescent (2)	8 J.A.P. 50°	85 x 85	964	Air	Amac	5 & R.	3½ to 12	Faction	—	10 3	3 9	9	7 9	4	5	£99 15
Crouch Carrette	7-9 Crouch 60°	80 x 90	994	Water	Amac, H.C.	3 & R.	4½, 8, 14	Chain	3 8	9 6	5 0	7	7 3	4	6	£127 10
Dav-Leeds (2)	8-9 Leeds 69°	85 x 88	998	—	To order	3	4, 6½, 10	G and B	3 10	8 6	4 3	8	6 6	4	4½	£110 0
Ducar (2)	8 J.A.P. 50°	85 x 85	964	Air	Lukin, A. ....	Var.	3½ to 8	C and B	4 2	9 7	4 0	8	7 0	4	4½	£99 15
*Eagle (2)	8 Eagle 50°	85 x 88	993	Air	B. & B., H.C.	3 & R.	4½ to 10½	Shaft	4 0	10 1	4 8	7	7 0	4	4	£109 0

\*Bedelia: 5½ h.p., Commercial Model, £10 10s. extra; 8-10 h.p., magneto, £7 7s. extra.

\*Chater-Lea: Chassis price.

\*C. &amp; H.: With 8 h.p. Precision engine, £5 extra, and 28 lbs. heavier.

\*Eagle: Water-cooled, £10 ext.a.



## FOUR-WHEELED CYCLECARS (Continued).

Name of Machine and No. of Cylinders.	H.P. and Name of Engine.	Bore and Stroke.	Cubic Capa- city.	Cooling.	Name of Carburettor.	No. of Speeds	Gear Ratios to 1.	Trans- mission.	Dimensions.				Make and Size of Tyres.	No. of Wheels.	Weight of Chassis.	Price.
									Ex- treme Height	Ex- treme Width	Ex- treme Clear- ance.	Wheel- base.				
									ft. in.	ft. in.	in.	ft. in.				
Flycar (2) .....	8-10 J.A.P. ....	85 x 96	1100	Air	Claudel-H. ....	3	4, 6, 9	Sand B	4 0 10	4 6	12	7 6 3	650 x 65 PC	4	5	£115 0
Glyard (2) .....	8 J.A.P. 50° ..	85 x 85	964	Air	B. & B., H.C. ....	3	4 to 11½	Chain	2 9 10	4 6	8	6 10 3	650 x 65 ...	4	4½	£100 0
Globe (1) .....	8-9 Aster .....	105 x 120	1037	Water	Claudel-H. ....	2	4, 9	C and B	4 0 10	4 2	6	7 2 3	700 x 75 ...	4	—	£131 5
Glover (1) .....	4½ Precision ...	89 x 96	597	Air	Amac, H.C. ....	2	3, 7 to 8.2	Belt	3 9 9	4 4	4	7 0 3	400 x 65 D.	4	3	£78 15
G.N. (2) .....	8-10 G.N. 90° ..	80 x 98	985	Air	B. & B. ....	2	4½, 8	Com.	4 0 11	4 4	4	8 0 3	650 x 65 M.	4	3½	£99 15
*Gordon (2) .....	8 J.A.P. 90° ..	85 x 95	1078	Air	Binks, A. ....	3 & R.	4½, 7½, 11½	Chain	4 0 10	4 3	7	7 6 3	26 x 2½ D.	4	5	£135 0
G.W.K. (2) .....	8 Cov.-Simplex	86 x 92	1068	Water	Solex, A. ....	4 & R.	3.9 to 9½	F.ict'n	3 7 10	4 6	9	7 7 3	650 x 65 ...	4	5½	£135 0
Humberette (2)	8 Humber 50° ..	84 x 90	998	Air	Auto. 4-jet ..	3	4½, 6, 13½	Shaft	—	4 4	4	7 3 3	650 x 65 D.	4	6	£115 0
Invicta (2) .....	8 J.A.P. 50° ..	85 x 85	964	Water	—	3	—	Sand C	—	—	—	7 9 3	—	—	—	—
J.B.S. (2) .....	8 J.A.P. 50° ..	85 x 85	964	Air	Lukin, A. ....	4 & R.	4½, 9½, 9, 14	Shaft	4 3 10	4 5	0	7 6 4	26 x 2½ P.	4	6	£120 0
Kendall (2) .....	8 J.A.P. 50° ..	85 x 85	964	Air	B. & B. ....	2	—	Belt	—	—	—	—	650 x 65 M.	4	5	£89 5
Kendall (2) .....	8 J.A.P. 50° ..	85 x 85	964	Air	B. & B. ....	2 & R.	—	Shaft	—	—	—	—	650 x 65 ...	4	6	£115 0
L.E.C. (2) .....	8 L.E.C. ....	80 x 108	1085	Water	Lukin, A. ....	3 & R.	3½, 6, 10	Shaft	3 6 10	4 4	3	7 10 3	700 x 75 A.	4	6	£145 0
Leo (2) .....	8 J.A.P. ....	85 x 85	964	Air	J.A.P., A. ....	2 & R.	—	—	—	—	—	—	—	4	—	£100 0
L.M. (2) .....	8 J.A.P. 50° ..	85 x 85	964	Air	B. & B., H.C. ....	2	4½, 10½	Chain	3 11 10	3 3	8	7 9 3	26 x 2½ M.	4	5	£99 15
Marlborough (4)	8-10 .....	59 x 100	1092	Water	Claudel .....	3	—	Shaft	—	12 0	4	9 0 4	700 x 85 M.	4	6½	—
Midget (1) .....	Alldays .....	108 x 114	1044	Water	—	—	—	Shaft	—	—	—	—	—	4	6	—
Parent (1) .....	6 Parent .....	80 x 140	704	Water	Solex, A. ....	3 & R.	—	Shaft	—	—	—	7 6 3	—	4	4½	—
P.D.A. (2) .....	8 P.D.A. 50° ..	85 x 85	964	Air	Lukin, A. ....	2 & R.	4, 7, 9.7	Shaft	4 0 9	4 2	7	6 10 3	650 x 65 ...	4	4	£110 5
Perry (2) .....	Perry .....	72 x 108	879	Water	Perry, A. ....	3 & R.	—	Shaft	—	—	—	—	700 x 80 ...	4	6	£136 10
Peugeot Baby (4)	—	55 x 90	856	Water	Claudel-H. ....	2	—	Shaft	—	—	—	—	—	—	—	—
*Premier (2) .....	7-9 Premier 50°	85 x 88	998	Air	—	2	4½, 9½	Chain	—	8 6	4	6 0 4	650 x 65 D.	4	5½	£105 0
Rollo Monocar(1)	4½ Precision ...	89 x 96	597	Air	Amac, H.C. ....	2	5, 8½	Com.	3 0 9	0 3	1	6 8 2	26 x 2½ M.	4	2	£75 0
Rollo Tandem(2)	8 J.A.P. 50° ..	85 x 85	964	Air	Amac, H.C. ....	Vari.	4½ to 8½	Com.	3 6 10	8 3	6	8 4 3	26 x 2½ M.	4	4	£99 15
Rollo Sociable(2)	8 J.A.P. 50° ..	85 x 85	964	Air	Amac, H.C. ....	Vari.	4½ to 8½	Com.	3 2 9	8 4	0	7 6 3	26 x 2½ M.	4	4	£99 15
Rudge (1) .....	5-6 Rudge .....	85 x 132	750	Air	Senspray, H.C.	10	3.5 to 14	Belt	3 3 2	9 6	5	6 9 4	26 x 2½ ...	4	4½	—
Sabella (2) .....	10 J.A.P. 50° ..	85 x 95	1078	Air	Lukin .....	6	4 to 9	Band C	3 6 10	6 4	4	8 3 3	26 x 2½ M.	4	4½	£99 0
Sherwin (2) .....	8-10 .....	75 x 120	1060	Water	—	3 & R.	4½, 5½, 9½	Shaft	—	—	—	—	650 x 65 ...	4	—	—
*Singer (4) .....	10 Singer .....	63 x 88	1096	Water	Claudel-H. ....	3 & R.	4½, 6½, 9½	Shaft	5 4 10	6 5	0	7 6 3	700 x 80 D.	4	6	£185 0
Super (2) .....	8-10 Anzani 25°	85 x 85	964	Water	Claudel, A. ....	7	4 to 16	Com.	2 6 10	6 3	6	8 0 3	650 x 65 ...	4	3½	£99 15
Surridge (2) .....	8 Falmir .....	84 x 88	976	Air	B. & B. ....	5 & R.	4 to 16½	Chain	—	—	—	8 0 3	700 x 80 Con	4	5	£115 10
Swift (2) .....	6 Swift .....	75 x 110	972	Water	Longuemare	3	—	Shaft	—	—	—	7 0 3	650 x 65 ...	4	5	—
Tiny Car (2) .....	8 J.A.P. 50° ..	85 x 85	964	Air	B. & B. ....	4	4 to 15	Cand S	4 4 11	0 4	6	8 6 3	650 x 65 P.	4	5	£104 0
Tyseley (2) .....	8½ Tyseley .....	82½ x 102	1090	Water	To order .....	2	4½, 9½	Shaft	—	9 10	4	8 7 0	650 x 65 ...	4	5½	£150 0
Violette, (1) .....	6 .....	80 x 140	704	Water	Claudel-H. ....	Vari.	—	Chain	—	—	—	—	—	—	6	—
Walycar (2) .....	8 J.A.P. 50° ..	85 x 85	964	Air	Amac .....	2	5½, 10½	Shaft	3 4 9	0 4	8	6 9 4	26 x 2½ ...	4	4½	£99 15
Warne (2) .....	8 .....	85 x 85	964	—	—	2	—	Belt	—	10 2	4	8 0 3	26 x 2½ ...	4	4½	£99 0

\* Premier: Weight is for complete machine.

\* Singer: With hood up; price includes hood, screen, and five lamps.

\* Gordon: Weight is for complete machine.



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## Olympia.

THE third Olympia Show organised by the Motor Cycle Manufacturers' Union, which was opened on Monday last, will be looked back on in years to come as a thoroughly representative exhibition. Practically every stand bristles with the latest in motor bicycle, sidecar, and cyclecar construction, and a prospective purchaser who leaves the Show without having arrived at some idea as to what his motor mount for 1913 is to be will be either difficult to please or so bewildered with variety that he will reserve his order until he can consult an expert friend.

We found when inspecting the motor cycle exhibits that, broadly speaking, the bicycle frames are little changed—to the casual observer they are not altered at all from last year—but there are, nevertheless, to be practised eye evidences of detail refinement and a general strengthening up, particularly where sidecars are to be permanently attached, *i.e.*, used almost constantly with the bicycle.

Gears are by no means settled; for serious sidecar riding in general and touring the all-chain drive is undoubtedly correct, and preferably with a multi-cylinder engine of about 5 h.p. Solo tourists have a choice of all belt and three-speed hub, all chain and counter-shaft two or three-speed gear, combined chain, gear and belt and infinitely variable gear between two points.

Engines are receiving more and more that close attention which only comes as design is settling down. Makers are looking more carefully into the lubrication question. The life of any petrol motor depending so much on correct and even oiling of all the parts, it is essential that this point should have the most careful tests, and signs are not lacking that this is forthcoming to a very large extent.

Mudguarding of engine, rider, and transmission is vastly improved; far-seeing firms are standardising belt guards, and entirely enclosed chain drives are becoming quite common. The stowing and carrying of tool cases is one of the items which many makers have improved, and numbers of these fitments are now fitted with metal frames, so enabling the leather portion better to retain its shape. Although the motor bicycle in most cases is as well designed as it is possible for it to be under existing conditions, we cannot refrain from mentioning that in comparison with many portions of a motor car there is still room for simplification

and reduction in number of parts. The average man is apt to make comparisons between the two, and think a motor bicycle complicated when he sees so many working parts exposed. Simplicity combined with efficiency is the keynote to strike, and there is always room to make details more simple.

Brakes are wonderfully efficient in these days, but none should be so fitted that they increase trouble in removing a wheel. Most brakes in the Show are greatly improved. In an exhibition it is, of course, excusable to polish everything on a motor cycle or car till it both attracts and dazzles, but we think it would be a good idea if every firm were to show one example of the same highly plated and enamelled machine, finished in grey paint only, just as a reminder that it is not necessary always to keep that glittering plate like a mirror. A few firms do adopt this course, but if more were to follow suit we do not think it would be a bad business move.

Novel sidecar frames and bodies are quite a predominant feature; the former are in most cases lower than before, and security of attachment has been more carefully studied. The bodies on many sidecars are most luxuriantly fitted, and with easy springing suited to the passenger's weight are more comfortable than many cars. Hooded, screened, and sprung as they are, their popularity will increase, because there is nothing to equal a sidecar as a passenger motor vehicle in first cost, maintenance, speed, and efficiency.

The greatest interest is displayed in the miniature motor cars, and the cyclecars of both three and four-wheeled types. Orders will, we know, flow in for these handy little runabouts, which should in many cases cost little more to maintain than a sidecar. While there are tried and tested designs on view, many of them have hardly smelt the road, let alone been tested as they should be for a few thousands of miles before being offered to the public. Like the motor bicycle, the fittest will survive, but we think some are born to disappointment. There are examples of great excellence which reflect the utmost credit on their producers, and we wish them all the best of good fortune and success during the coming year. The performances of the untried ones will decide to a very great extent whether the public will obtain the same amusement and good health from their use as they have done from motor bicycles and sidecars, and the few tried cyclecars there are on the road.



OCCASIONAL  
COMMENTSBY  
"IXION"**Lightweight Maintenance.**

The Scottish correspondent whose experiences I described on November 14th has now forwarded some additional details. He omitted to charge up his spare belt, and now explains that two belts were concerned in the surprising mileage of 5,800, but that the spare was purchased in July, 1911, and had run 1,500 miles before the season started. In other words, with two belts he claims to have covered 7,300 miles, and asserts that both are in excellent condition. He answers my astonishment at the behaviour of his engine chain by explaining that it is periodically removed and soaked in grease, saying that friends of his, using similar machines, wear out both chains and sprockets in much shorter distances, because they merely oil the surfaces of the rollers with the chain *in situ*. Under any circumstances such a transmission experience must be regarded as extremely satisfactory.

**Engine Silence in 1913.**

It will be interesting to see whether threatened legislation and consequent modifications in design procure a real advance in engine silence next year. So far as I can see, the similar pressure in the car world has effected very little improvement. In many provincial towns, where the police are neither expert jurists nor motorphobes, a keen observer would find no evidence for supposing that circumstances had changed; possibly the road-hog type of driver is a little more considerate in the use of his cut-out, and that is all. Personally I hope that the corresponding movements in the motor cycle world will extend no further. I regard a really quiet motor bicycle as a public danger. An inaudible car is dangerous, but it is less dangerous than an inaudible motor cycle, because it is larger, and the eye helps the ear in assisting to keep reckless pedestrians out of danger. There would be no genuine cause for complaint if the new pressure prevented road-hog motor cyclists from driving on the open exhaust in populous places. Some of the modern ultra-efficient engines, with perfect tuning, peculiar valve timing, and open exhausts, create a perfectly abominable and unpardonable noise; and numerous bounders have often driven such machines through towns and villages, not only on ordinary occasions, but late at night, early in the morning, and on Sundays. This ought to be stopped, and will be stopped. But it is ridiculous to fuss about the noise created by a standard roadster machine of 1912 design with the cut-out shut. It is only the novelty of its noise which sets people talking, for there are many long-established noises which represent a far more genuine nuisance.

The swift passage of a heavy tram, the shouting drovers and barking dogs in charge of cattle, the whistles of locomotives, railway shunting, the rumble of a heavy traction engine or caravan, the squeaking

BIG

of a cumbrous waggon, barrel organs, street play brass bands, etc., etc., are all far more tiresome. Behind most of these noises there is some public necessity; and the motor cyclist can fairly claim the right to create a reasonable noise in the interests of personal and public safety, not to speak of mechanical factors. If the dummy silencer and open cut-out are killed by the new designs and regulations, more need be expected or hoped for. If there is an exception, it is that a special degree of silence should be enforced in all motor cycle trials. A stream of motor cycles stand in a different category from the passage of a solitary machine. The row created in Scotland and in the West of England by the hold of the two big Six Days' Trials was wholly unjustifiable; nor was it confined to the fringe of scallywags who attend such functions and delight in disgusting all sensible men.

**The Price of Motor Bicycles.**

The sharp lesson administered to the British automobile industry appears to be ignored by the motor cycle industry. A huge invasion of cheap foreign cars designed on simple lines, produced in vast quantities and manufactured by very keen organisation, has hampered the second-hand car market, and has considerably fluttered the manufacturing dove. A similar attack upon our motor cycle industry is only a matter of time, and may or may not incorporate such a depreciation in quality as is characteristic of



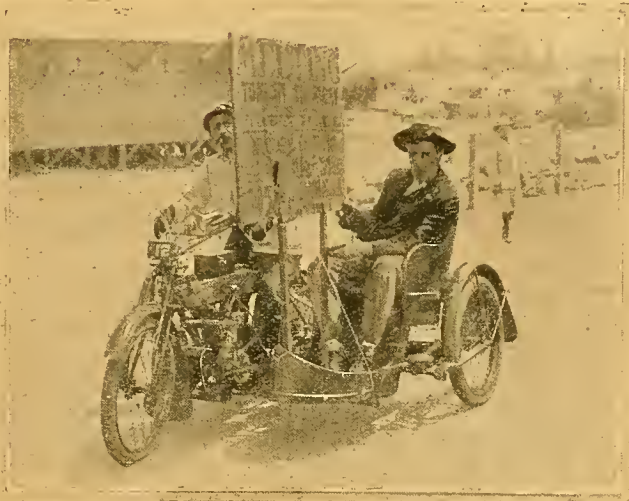
Miss Florrie Richards, age sixteen years, said to be the first lady motor cyclist in Nottingham. Miss Richards has been a motor cyclist for two years. Her present mount is a 2½ h.p. Elswick; on this she has ridden as much as 200 miles a day. She is particularly clever in traffic, and often drives her father out in a Sun-Precision and sidecar.



## Occasional Comments.—

car invasion. At the moment there are no signs of our motor cycle industry being forewarned, or forearmed. Efforts to cheapen the motor cycle are confined to a few small firms, turning out machines in small quantities, the economy being apparent rather than real, and being effected solely by avoiding middlemen's commissions, racing expenses, advertising charges, and all that would rank as "establishment charges" in the case of big firms, an item that often absorbs 25% of the list price of a commodity. There are no immediate signs of a motor cycle invasion, but our markets are expanding by leaps and bounds, and some such onslaught is only a matter of time. I appeal to our big and successful firms to consider whether they cannot form plans for protecting themselves by substantial reductions in their prices for 1914. Such a reduction would have very far-reaching effects. It would popularise the hobby, and, as we are near the ideal of possessing a motor cyclist in every household earning more than £3 per week, our position would be much improved. It would build up the national prosperity, and improve the national health, now suffering from the pleasures of artisans being largely confined to watching football matches and attending picture palaces. Manufacturers are justified in charging £50 for a good machine so long

as they can get it; but prices are rising steadily; and few years may elapse before huge batches of American or French or German machines are dumped upon us at £40 or £30 apiece.

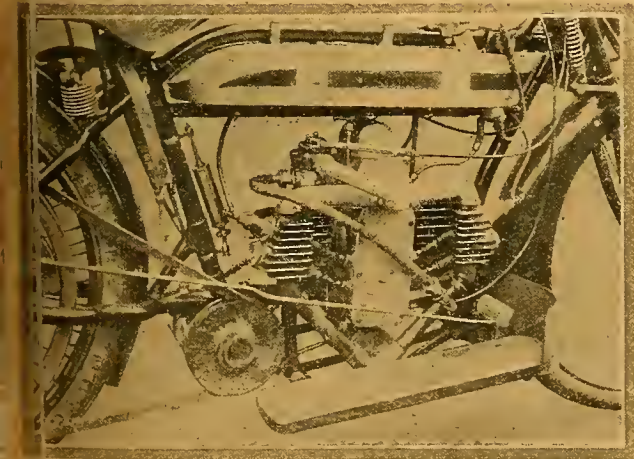


A 6 h.p. Matchless and sidecar, used by Mr. J. Van Zwieten in the city of Pretoria and suburbs, for advertising purposes. We are told that the machine was run for long periods at almost walking pace.

## Some Experiences with a Lukin Carburetter.

AS the Douglas which we are now riding is used a great deal in London traffic, and often has to be driven through London parks where a speed in the neighbourhood of twelve miles an hour is to be maintained, a carburetter which would give the greatest amount of flexibility had to be found. The first time the Lukin was put on it achieved the desired result. Easy starting and slow running were obtained with the minimum amount of trouble. There was no need to search for the mixture when it was required to run slowly in tricky places. It was always there, so to speak, no matter to what degree the throttle was opened. The difficulty of adapting the Lukin carburetter was overcome by fitting an extra induction pipe as shown in the illustration, which allows the carburetter to be stowed away neatly behind the mag-

neto. It could not be fitted in the usual way, as owing to the position of the mixture orifice it would have had to have been placed with the float chamber outwards, and would have projected too far. The method of fixing, though neat, is by no means ideal, as the rear cylinder, owing to the acute corner the gas has to turn to reach it, receives its mixture under more or less of a disadvantage. We mention this fact purposely, as notwithstanding this difficulty the carburetter works extremely well, gives ample power and wonderful controllability. Thanks to the latter excellent attribute it renders traffic driving a real pleasure. In fact, we have never traversed congested streets on a motor bicycle with greater comfort than on the Douglas working with the Lukin. The new carburetter was fitted in October, when the mornings were cool and foggy, and the first great fault soon manifested itself. This was freezing, which would cause a complete stoppage in the early part of the day, and would disappear as the temperature became warmer. How this was overcome may be seen by the accompanying illustration. A hot air sleeve was bolted round the vaporising chamber and connected to the exhaust pipe of the front cylinder by a pipe lagged with asbestos string. Since the fitting of this warming device the carburetter has worked perfectly. It gives plenty of power, and is not extravagant. In a word, it has greatly altered the machine for the better. It would undoubtedly give better results still if it could be bolted direct to the induction pipe, doing away with the extra pipe shown. The whole of the fitting was carried out by Messrs. Lukin, Ltd., the Ride, Newcomen Street, S.E. Incidentally, the photograph shows a method of carrying a spare piece of belting in an unused corner, and a home-made mud-shield which is most effective.



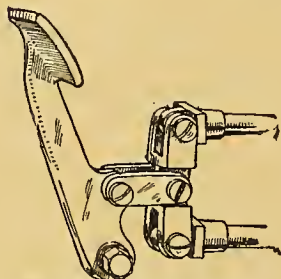
The warming pipe from the exhaust fitted to the Lukin carburetter.



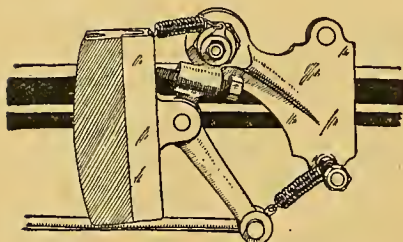
# Chain-driven Machines at the Show.



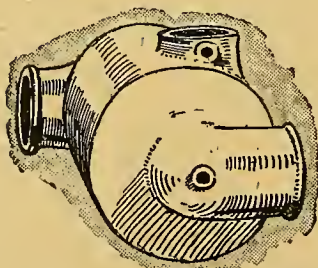
Calthorpe cast aluminium footboard.



Rover compensating link for rear belt rim and sidecar band brakes. The lever is mounted in the usual position.



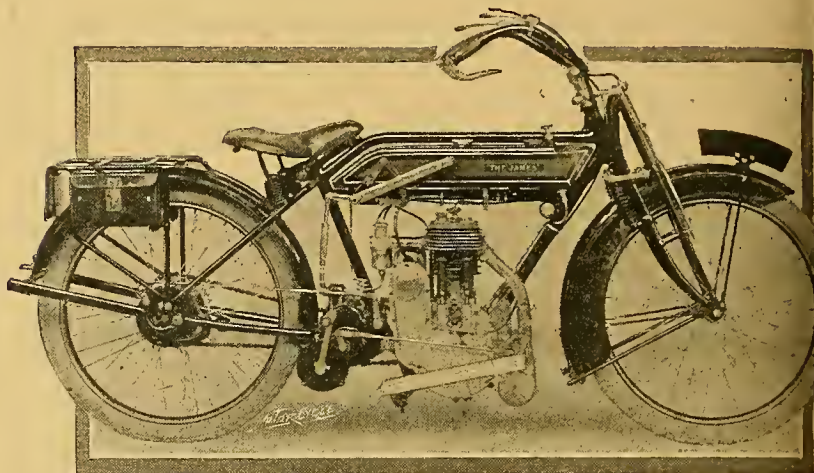
Torpedo compensated rear brake.



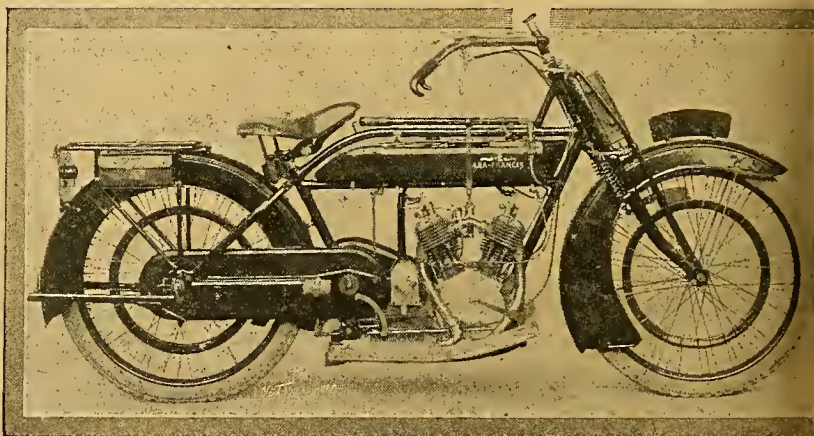
A single aluminium casting which constitutes the Clyno silencer.



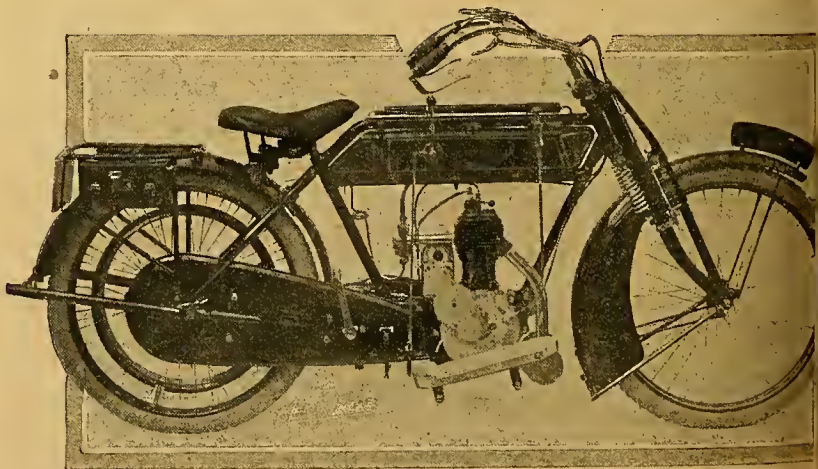
B.S.A. combined front stand and mudguard stay.



A striking example of the 86 x 96 mm. three-speed James.



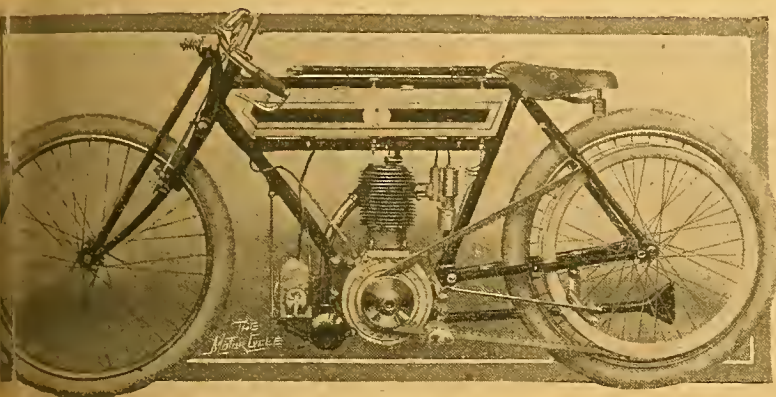
3 h.p. twin-cylinder two-speed Lea-Francis—a new mount for 1913.



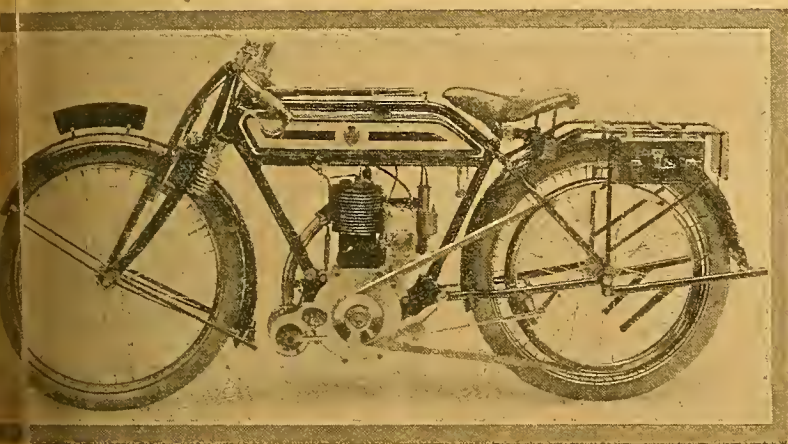
Valve side of next year's 2½ h.p. two-speed Sunbeam with oil bath chain cases.



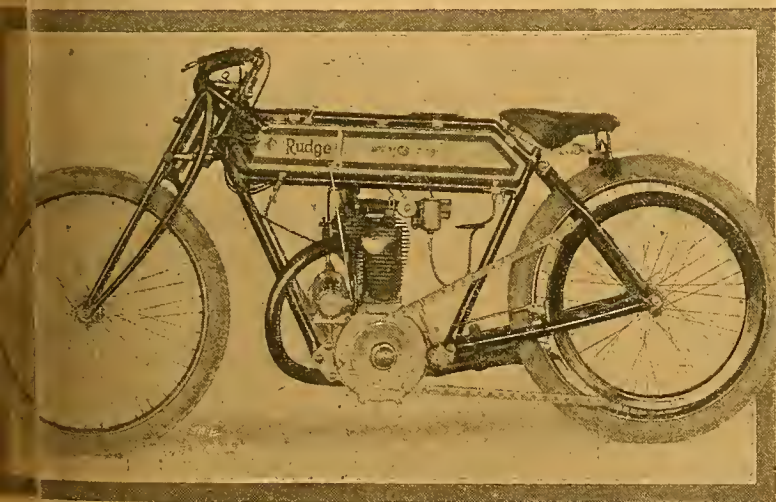
# Tourist Trophy Types.



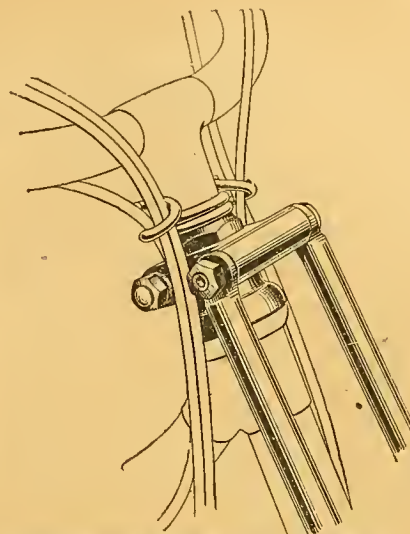
A T.T. Triumph stripped for racing.



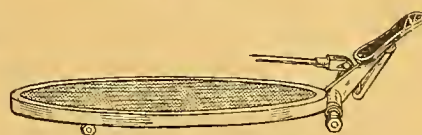
Rover 3 1/2 h.p. T.T. model.



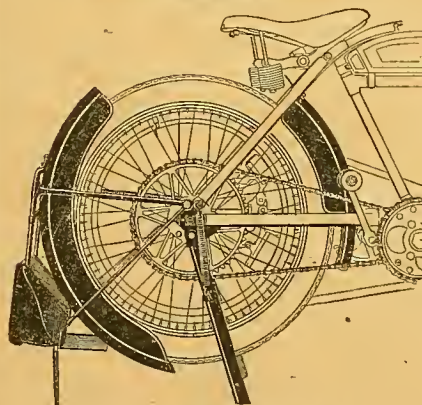
1913 model T.T. Racing Rudge.



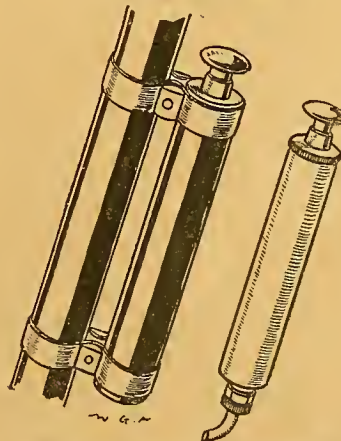
L.M.C. new ball head clip, also showing clips for Bowden wires.



Centaur foot board and clutch pedal for Armstrong gear.



L.M.C. rear mudguard swung down.



A useful accessory in the form of an oil squirt is fitted to Bradbury machines and is carried, as shown, on the saddle tube.



## RECORDS AT BROOKLANDS.

G.W.K. Regains Hour Record. A Douglas averages 44 m.p.h. for Six Hours.

**T**UESDAY last week proved a successful day for record aspirants. The weather was fair with a gusty wind, but the track was wet. At 10.13 a.m. J. T. Wood and S. L. Bailey were started by Mr. A. V. Ebbelwhite. The former was driving a G.W.K. with twin-cylinder Coventry-Simplex engine of 86 x 92 mm. = 1,070 c.c., the weight of which all on, including body, was 721 lbs. Wood's task was a difficult one, as he had several miles to add to his previous best hour record, for H. F. S. Morgan had wrested the title of hour record holder by adding seven miles to the G.W.K. record of September 25th. However, the G.W.K. buzzed round the track regularly at a speed not far short of a mile a minute, and Wood was successful in his object, incidentally capturing the fifty miles record on the way. The times and distances were:

1 hour	...	56 mls. 76 yds.	= 56.04 m.p.h.
50 miles	...	53m. 8 $\frac{3}{4}$ s.	= 56.45 m.p.h.

*Previous Best.*

H. F. S. Morgan (Morgan cyclecar), 9/11/12.

1 hour	...	55 mls. 329 yds.	50 miles	...	54m. 39 $\frac{1}{2}$ s.
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S. L. Bailey, riding a Douglas as usual, much longer ride, his object being to annex C (350 c.c.) records up to six hours. The Douglas fine fettlé, though, of course, it was never forced utmost in view of such a long gruelling trial record was characterised by the regular running little twin, as a consideration of the speeds. Every new record actually averaged between 44 $\frac{3}{4}$  m.p.h. Bailey already held the three record, and commenced raking in new records the expiration of four hours, when he improved 10 miles the distance covered by N. D. Slatter 247 c.c. single-cylinder Alcyon over a year ago. 1 of the new records are appended:

4 hours	...	173 mls. 786 yds.	= 43.46 m.p.
5 hours	...	223 mls. 864 yds.	= 44.69 m.p.
6 hours	...	264 mls. 216 yds.	= 44.02 m.p.
200 miles	...	4h. 30m. 22 $\frac{3}{4}$ s.	= 44.78 m.p.
250 miles	...	5h. 43m. 28 $\frac{3}{4}$ s.	= 43.67 m.p.

*Previous Best.*

N. D. Slatter (single-cylinder Alcyon, 62x82). 31/1	
4 hrs. ... 163 mls. 1622 yds.	6 hrs. ... 223 mls. 14
5 hrs. ... 196 mls. 1011 yds.	200 mls. ... 5h. 5m. 1

## A.C.U. Silencer Tests. The Regulations.

**T**HE Auto Cycle Union invites manufacturers of motor cycles and others to submit silencers for the purpose of testing their efficiency in a trial which will be held near London during January next. The committee consists of A.C.U. members and representatives of the Motor Cycle Manufacturers' Union. The judges are Col. H. C. L. Holden, R.A., Mr. J. W. G. Brooker, Dr. A. M. Lowe, D.Sc., Mr. Archibald A. Sharp, B.Sc., and Dr. Wm. Watson, B.Sc.

The method of carrying out these tests has been decided upon by a committee appointed by the A.C.U., and for the purpose preliminary tests were held earlier in the year to determine the "standard" of silence, which was obtained by constructing a special telescopic silencer, details of which have already appeared in these pages.

All silencing devices entered for the competition will be tested against this "standard" silencer, which, it should be noted, is of so simple a form that manufacturers may easily construct duplicates in order to ascertain the degree of quietness, irrespective of efficiency, which the committee consider desirable. It should also be understood that the committee put this design forward merely as an exhaust arrangement that is effective as a silencer, and do not suggest that it is necessary or desirable that motor cycle silencers should be of such large dimensions.

Silencers submitted for the test will be divided into two classes:

A. Silencers that are suitable for attachment to any make of motor cycle.

B. Silencers which are an essential part of the whole design of a particular make of machine.

Silencers in Class A will be tested both on the bench and on Brooklands Track, such combined tests rendering them eligible for a *First Class Certificate*.

In Class B silencers will be tested at Brooklands, and will be eligible for *Certificates of Merit* only.

### Conditions for the Brooklands Trial.

In order to judge the noisiness of the various cycles, they will be ridden by an official of the A at definite speeds, throttle openings, etc., both and without their silencers and exhaust pipes.

Tests will also be made to determine the efficiency on the level and uphill, and for these tests the entrant must supply the driver.

Silencers entered in Class A will be tested fit a standard 3 $\frac{1}{2}$  h.p. Rudge motor bicycle (placed at the disposal of the A.C.U. by Rudge-Whitely Ltd.), and such silencers must be submitted complete with exhaust pipe and all other necessary attachments.

### Conditions for the Bench Tests.

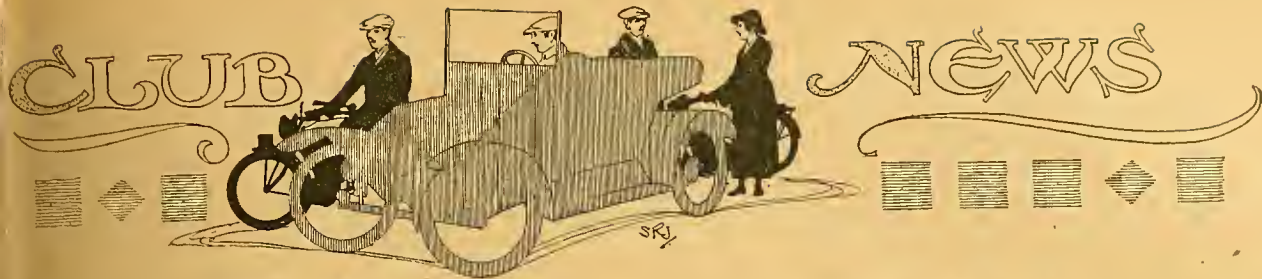
The bench tests entered in Class A will be held at the works of Auto-Carriers, Ltd., Thames Ditton, where a 3 $\frac{1}{2}$  h.p. single-cylinder water-cooled field engine (lent by Blumfield, Ltd.) will be installed and coupled to a fan dynamometer, lent for the tests by White and Poppe, Ltd.

Data will be obtained with the engine running 1,000 and 2,000 r.p.m. respectively with the standard silencer, and compared with similar data obtained with each competing silencer fitted. It will be taken that the engine is run under the conditions throughout the tests. The noise made by the various silencers will be measured by Holden's audiometric apparatus, and the pressure point between the engine and the silencer will be recorded.

In judging the results the following points will be taken into consideration: (a) Degree of noisiness compared with the "standard"; (b) weight of silencer complete, including emission pipe if fitted; (c) volume; (d) general practicality.

Entries close on December 31st, 1912.



**Westmorland M.C.C.**

The annual dinner and presentation of prizes took place on the 7th inst.

**Stockport and District M.C.C.**

The annual dinner of the above club will be held on December 5th, at headquarters, White Lion Hotel, Stockport.

**Newcastle and District M.C.C.**

A supper and smoking concert took place on the 21st inst., and there will be a fault competition on December 5th.

**Foleshill and North Warwickshire M.C.**

The first annual dinner was held on the 19th inst. at the General Wolfe Hotel, followed by the presentation of the prizes won during the year. Mr. S. Bettmann, J.P., the president, promised to present the club with a silver cup.

**Cork and District M.C.C.**

The annual dinner took place on the 26th ult. The prizes competed for during the season were distributed. The dinner was followed by an excellent musical programme to which the club orchestra, under the title of the "Non-skid" and, contributed several pleasing items.

**Penang (Straits Settlements) M.C.C.**

As there are now a large number of motor bicycles in Penang, it has been decided to form a club. Will any motor cyclists willing to join kindly send their names to the hon. secretary, *pro tem.*, Mr. L. W. Learmount, c/o Paterson, Simons and Co., Ltd., Penang?

**Motor Cycling Club.**

On the 19th inst. the Motor Cycling Club held a most successful smoking concert at the Crown Room, Holborn restaurant. The programme was an exceptionally good one. Mr. Charles Jarrott (the president) was in the chair. Visitors from several metropolitan and provincial clubs attended.

**Bristol B. and M.C.**

The thirty-seventh annual general meeting of the above club was held at the headquarters, Full Moon Hotel, on Wednesday, the 13th inst. The meeting was well attended, the chief result being that the motor section was put on a much firmer footing. The following were elected officers for the coming year: President, Mr. E. J. Prosser; Captain, Mr. F. Bevan; hon. sec., Mr. A. S. Richards, 34, Ivor Road, Bishopston, Bristol.

The annual dinner (at which prizes will be presented) will be held at headquarters on December 7th, at 7 p.m.

**Colchester and District M.C.C.**

A club has been formed with the above title. Mr. E. Herdman is captain and Mr. C. L. Gray hon. sec. Headquarters, Red Lion Hotel.

**Cumberland County M.C.C.**

The annual general meeting was held on the 9th inst. The club has had a most successful year, and the membership now totals 130. The following officers were elected: Captain, Mr. E. A. Iredale; joint hon. secs., Messrs. W. B. Little and Hilton Robinson; treasurer, Mr. T. B. Westmorland. A dinner and concert followed the meeting.

**Herts County A. and Ae.C. (Motor Cycle Section).**

The last of the series of four open reliability trials for motor cycles and passenger machines will take place on December 14th. The route will be: St. Albans, Harpenden, Luton, Barton, Sundon, Dunstable, Ivinghoe, Aston Clinton, Aston Hill, Wendover, Prince's Risborough, Missenden, Chessham, Boxmoor, Hemel Hempstead, Water End, Gaddesden, Markyate, Dunstable, Caddington, Harpenden, St. Albans. The trial will consist of non-stop runs over certain sections of the route and two timed hill-climbs, a fast and a slow. The competitor in each class making the best time either fast or slow will set the standard for the hill and gain full marks, the rest will lose one mark for every two seconds variation. Five marks will be deducted for failure on an observed hill. Particulars may be obtained from Mr. G. S. N. Carter, Aplins Close, Harpenden, Herts, to whom entries must be sent on or before December 2nd.

**Aberavon, Port Talbot and District M.C.C.**

On the 16th inst. a novel speed-judging competition was held. The competitors were required to travel twice over a circuitous route of slightly more than twenty miles, and the winners were to be those riders showing the least variation of time for the two trips. Speedometers and watches were not permitted. The weather was fine and the roads in dry condition. The results were as follow:

**SIDECAR CLASS.**

Rider and machine.	Time of		Time of		Variation.
	1st journey.	2nd journey.	1st journey.	2nd journey.	
*E. W. Roderick (6 Zenith)...	1h. 1m.	1h. 1m.	1h. 1m.	1h. 1m.	nil
H. J. Brokensha (6 Entfeld)...	1h. 0m.	1h. 0m.	1h. 1m.	1h. 1m.	1m.
A. Salway (3½ Premier)...	1h. 24m.	1h. 25m.	1h. 25m.	1h. 25m.	1m.

\* Club gold medal.

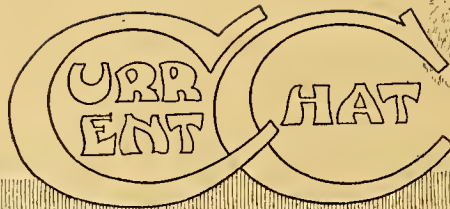
**SOLO CLASS.**

J. Davies (3½ Zenith) ...	1h. 15m.	1h. 18m.	3m.
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Bristol M.C.C. members at Keynsham on the occasion of the last competition of the year.





#### TIME TO LIGHT LAMPS.

Nov. 28th	...	...	4.55 p.m.
" 30th	...	...	4.55 p.m.
Dec. 2nd	...	...	4.52 p.m.
" 4th	...	...	4.51 p.m.

#### Next Thursday.

Next week's issue of this journal will contain critical and commentary articles on the different types of motor cycles exhibited at Olympia, written by well-known experts.

#### Record Breaking in November.

Record breaking has started again in earnest. There are quite a number of aspirants to record fame at Brooklands, new figures at Show time being especially sought after.

#### A Two-stroke Engined Cyclecar.

We hear of a cyclecar being built in the Midlands which is to have a two-stroke twin-cylinder engine. We have awaited with expectancy and not a little interest the advent of such a type of runabout.

#### Meeting of the F.I.M.C. at Olympia.

The Marquis de Mouchilly de St. Mars regrets he was unable to take the chair at the meeting of the delegates of foreign and colonial motor cycle clubs. He has always taken the greatest interest in international competitions, and it is only owing to his being in bad health and having been ordered abroad by his doctor that he was unable to attend.

#### Stolen Machines.

A 1912 free-engine Triumph was stolen from outside the Royal Hotel, Sutton Coldfield, on the 14th inst. The machine number is 193,377, registration number E1605. The oil tank is dented through a collision with a motor car. The back tyre is a Michelin and the front Clincher.

#### Home-made Petrol and Excise Duty.

In the House of Commons on the 19th inst., Mr. Bigland asked the Chancellor of the Exchequer, if the Government would undertake to allow the sale of home-manufactured petrol or petrol substitutes free of excise duty, with a view to securing an adequate supply immune from the liability to capture by an enemy. The Chancellor of the Exchequer said: "The answer is in the negative."

#### Championship Races at Ontario.

The Ontario championship motor cycle races were decided at Toronto before 5,000 spectators on the Toronto dirt track. In the five mile race for private owners riding belt-driven machines, Percy Barnes (3½ h.p. Triumph) was an easy winner in 6m. 25½s. In the sidecar race first, second, and third places were taken by

Fred Hall, A. McHaffrey, and Fred Greenwood, who all rode Triumphs. The winner's time was 8m. 23½s.

#### Auto Cycle Union Notes.

**NEW SCHEME OF CLASSIFICATION FOR COMPETITIONS.**—It was agreed that the adoption of the new scheme of classification should be a condition attached to all permits issued next year, with the exception of six meetings. The six meetings are to be balloted for by the secretaries of the various clubs. It was also agreed that a sub-committee consisting of Messrs. S. W. Carty, E. M. P. Boileau, W. G. McMinnies, J. F. McNab, J. G. Brooker, and Archibald Sharp should meet and draft the new scheme of classification.

**PERMITS.**—A permit has been granted to the Herts County A.C. to hold the fourth of a series of one day reliability trials on Saturday, December 14th, subject to the timekeepers being approved by the A.C.U.

**RECORDS.**—Various claims have been passed and accepted, except one claim by Harry Martin for a half-mile record, which the A.C.U. Competitions Sub-Committee decided was not a recognised distance.

**ENGLISH-DUTCH TRIAL.**—This competition will take place on August 4th, Bank Holiday, as last year. Further details will be published in due course.

**AN UNOFFICIAL TRIAL.**—The A.C.U. has decided to take action with regard to F. Begley's unofficial ride from London to Edinburgh; both the makers of the machine and the rider have been communicated with.

**BRITISH MOTOR CYCLE RACING CLUB.**—The following dates have been fixed for B.M.C.R.C. meetings at Brooklands: March 9th, April 26th, May 17th, June 14th, August 9th, September 13th, and October 11th.

**MEMBERSHIP.**—Two hundred and forty-two members represented the increase in membership of the A.C.U. during the last month.

**AFFILIATION.**—The Bournemouth and District M.C.C. and the Bristol Sports Club (motor cycle members) have become affiliated to the A.C.U.

**CYCLECAR DEFINITION.**—It has definitely been passed as a rule which has received the approval of the R.A.C. Competitions Committee that a cyclecar complete with body shall not exceed 7 cwt. [This announcement is interesting, as we recently pointed out that a cyclecar could have a body of any weight, according to the old rule, provided the chassis weight was less than 6 cwt. —Ed.]

#### SPECIAL FEATURES: OLYMPIA SHOW REPORT

Profusely Illustrated.

#### A TOUR IN SWITZERLAND. REGULATIONS FOR SILENCER TESTS.

**ANNUAL DINNER.**—The annual dinner of the Auto Cycle Union will be held about the second week in January. Further particulars will be published in due course. This year ladies will be invited.

**CANADIAN MOTOR CYCLISTS.**—The Canadian Motor Cyclists' Association, which has entered into an agreement with the Federation of American Motor Cyclists, has also entered into an agreement with the Auto Cycle Union, the idea being to maintain as far as possible the same competition rules, to recognize records in either country, and to extend touring facilities to A.C.U. members in Canada, and to Canadian members travelling in England.

**THE F.I.C.M.**—To-day, the 28th inst., the delegates of the English, Irish, Scottish, and the principal foreign and colonial governing bodies of the motor cycle sport and pastime are being entertained to luncheon at the Royal Automobile Club. A meeting is to take place at Olympia with the object of re-founding the Fédération Internationale des Clubs

Motocyclistes, at which Mr. J. L. Orde, secretary of the R.A.C., in the absence of Mervyn O'Meara, will preside. The delegates will be entertained to tea at Olympia after the meeting.

**THE NEW BADGE.**—Mention was made in the pages last week of the new A.C. badge which at last Monday was available for purchase at 3s. each. Those who possess the old pattern badge may obtain new ones by turning their present badges to the secretary and enclosing six stamps.

**THE L.G.B. CUT-OUT REGULATIONS.**—The draft of the above regulations was duly considered by the Silencer Committee, and it was agreed to recommend the General Committee that no objection be offered.



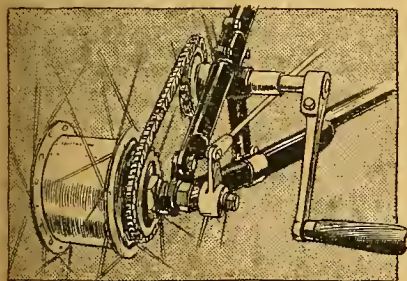
New A.C.U. badge fitting for top of lamp or front mudguard extension.



**ALLDAYS, No. 106.**

3½ h.p. MODEL: 85 × 88 mm.; m.o.i.v.; Amac; V belt; two-speed hub and free engine.

ALLDAYS AND OXIONS, LTD., Birmingham.—Most models on view are of the 3½ h.p. size, but the new twin is the attraction. In 1903 models a new steering head is adopted, also a new design of spring forks and front stand. Care has been taken in mudguarding both front and back wheels, side flaps being fitted to the guards in both cases. A new guard over the belt rim should be noted, while on the type fitted with two-speed Roc gear a neat aluminium cover over the band brake and clutch is provided. The luggage carrier tool-cases are metal housed. On the two-



Alldays handle-starting mechanism.

speed model the chief points in the power plant are waterproof magneto, placed behind the crank case and driven by chain, and spring plunger drip feed pump. Neat aluminium footboards are well supported at both ends, and on the right-hand side heel and toe pedals are provided for the brake and the low-speed control. On the left side is the high gear pedal held in place when required by a pedal trigger. A hand-starting device enables the engine to be started with the back wheel raised. A new sidecar frame is being adopted. The 8 h.p. twin engine has already been described. This is fitted to the Alldays sidecar machine, and also to the Alldays Midget, a cyclecar which is described elsewhere in this issue. The bore and stroke of the 8 h.p. twin-cylinder engine are 85 × 88 mm.

**B**IGGER, more complete and better arranged than hitherto, the third annual Olympia Show of Motor Cycles and Accessories cannot fail to prove an immense attraction. The doors are open at 10 a.m. each day, and remain open until 10-30 p.m. Admission 1/-. We deal elsewhere with the tendencies of design for 1913, but the outstanding feature of the Show is the large proportion of passenger motor cycles exhibited. This is not only due to the new rule admitting light four-wheelers which come within the definition of cyclecars, for sidecars also have undoubtedly increased in numbers. Even the casual observer must be moved to pay a tribute to the exquisite finish of most of the machines which include the best that British workmanship can produce.

The gallery is packed with ingenious accessories made for greater convenience and to reduce time and trouble. No motor cyclist or prospective rider of a motor cycle should fail to visit the exhibition.

The descriptions of 1913 models in this issue have been written by our own staff, who are all motor cyclists of long experience, after a stand to stand tour of the Show.

**NOTE.**

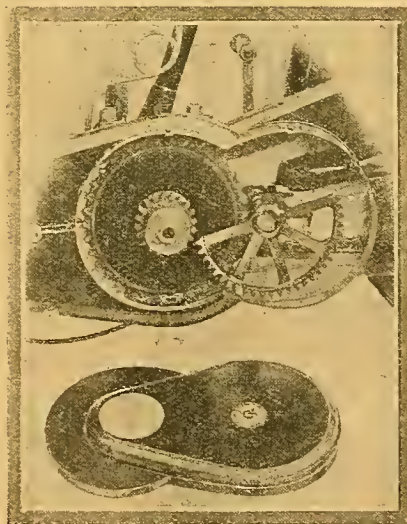
Our last few issues have contained advance reports of many new models; for detailed descriptions and illustrations of such machines we append the following reference table:

- |          |               |   |
|----------|---------------|---|
| Oct. 10. | Cyclecars.    | Humberette.   |
| Oct. 17. | Cyclecars.    | Premier.  |
| Oct. 24. | Motor Cycles. | Rudge, Humber Zenith.   |
| Oct. 31. | Motor Cycles. | Rover, Calcott, Matchless, Rex, Stella.   |
|          | Cyclecars.    | Alldays Midget, Crescent.   |
| Nov. 7.  | Motor Cycles. | James, Iodan, Enfield, Clyno, P.&M., A.J.S., Henderson.   |
|          | Cyclecars.    | Swift.  |
| Nov. 14. | Motor Cycles. | Williamson, Douglas, Swift, Bradbury, Brough, N.S.U., Triumph, Rex-Jap, Calthorpe, Hazlewood, Sunbeam, Ivy, Corah.  |
|          | Cyclecars.    | L.M., Gordoo, A.C., Crescent, Chater-Lea, Autotrix, Bedelia, G.N., G.W.K. Invicta, Autocrat, Leo, Day-Leeds.  |
| Nov. 21. | Motor Cycles. | Chater-Lea, Torpedo, Trump, New Imperial, Star, S.I.A.M.T., Bat, Pope, Excelsior, Auto-wheel, Moto-Reve, Motosaecoche, B.S.A., Monopole, Premier, Stella, Lincoln Elk, L.M.C. |
|          | Cyclecars.    | Sherwin, Perry, Eric.   |

**A.J.S., No. 29.**

2¾ h.p. MODEL: 74 × 81 mm.; side by side m.o.i.v.; Amac carburettor, chain transmission; two-speed A.J.S.; countershaft sliding.

A. J. STEVENS AND CO., Retreat Street, Wolverhampton.—This is one of the most successful medium weight machines, which was entered in competitions this



A.J.S. kick starter mechanism, showing how a portion of chain case can be removed to gain access to kick starter, also front and back chains.

year. In this and other A.J.S. models the latest type of waterproof U.H. magneto is fitted. The company has wisely decided to confine its attention to two models only. The chains are entirely enclosed in dust, mud, and waterproof casings.

It is interesting to note that the back wheel, gear box, clutch, sprocket, chains, and kick-starter can all be removed without dismantling the chain cases. The internal expanding brake on the rear wheel is also well worthy of inspection. The clutch has five plates, two of these being provided with cork insets, which allow the drive to be taken up

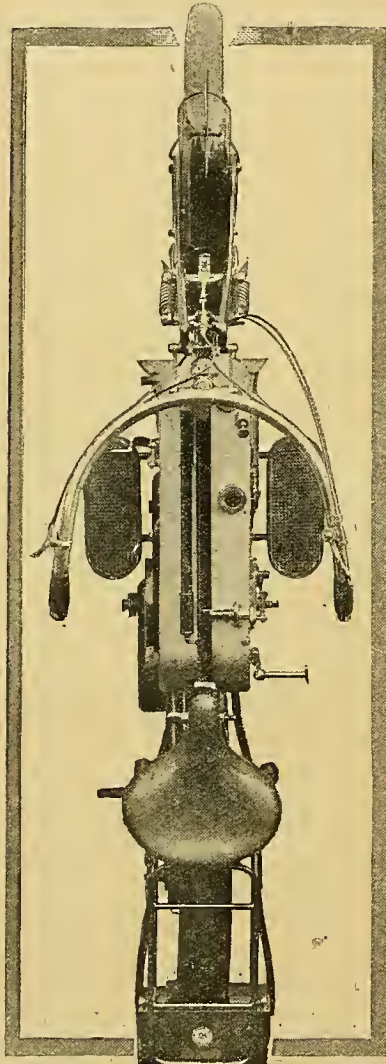


**The Olympia Show.—**

very sweetly. This model may be had with a three-speed gear at a slight extra cost.

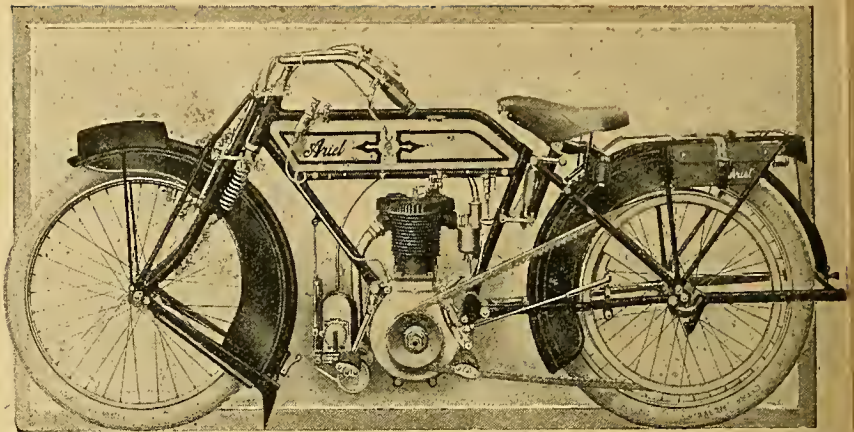
6 h.p. MODEL (twin): 74 × 81 mm.; side by side m.o.i.v.; Amac carburetter; chain transmission; A.J.S. three-speed sliding.

The 6 h.p. A.J.S. sidecar model is one of the most successful passenger machines of the year, and in the main closely resembles the smaller model we have just described. It is fitted with stronger chains and is quite up to the work for which it is intended. All the tappets are held down by springs which keep them pressed against the



Plan view of 6 h.p. 1913 A.J.S.

cams, thus reducing noise. Two of these machines are shown fitted with the new A.J.S. sidecar, the panels of which are of sheet steel, following a practice adopted in motor car building. The back is well padded, and at the rear there is a locker for a spare tyre cover. It will also be noticed that the leg room is ample. An advantage is that the engine, motor cycle, and sidecar are made in one factory.



Ariel T.T. roadster with spring seat pillar. The mudguarding is a good feature of this make.

**ARIEL, No. 91.**

3½ h.p. MODEL: 86.4 × 85 mm.; side by side valves; B. and B. automatic carburetter; belt; Armstrong V. or VI.

COMPONENTS, LTD. (Ariel Dept.), Bournbrook, Birmingham.—The Ariel Co. still retain the detachable tank and lower rail as a standard feature; the tank has rounded corners, petrol sump, and filter. Lubrication is by a semi-automatic drip feed oiler. The frame may be obtained with either dropped tube or straight top rail, both are used in conjunction with the Ariel spring seat-pillar. The front wheel has wide side extensions for its full length and specially made splashers attached to the front wheel stand. The rear guard is fitted with a long wide flap extending to the belt rim and low enough to protect the belt from mud.

The spring forks are made somewhat wider so as to accommodate the new mudguard, and an improved water-tight front hub is fitted. The front brake acts on the rim in the usual way, but the fork carrying the shoes lies outside the guards, and takes its bearing in special lugs brazed to the frame.

Pannier bags are fitted below the level of the carrier, and are enclosed in a sheet steel housing. The Ariel engine remains practically unaltered. It is notable for its simple and effective form of decompressor and the extra width between the valve chests. This model may be obtained with the Ariel free engine and variable gear, also with a fixed engine and a T.T. model. The free engine model is fitted with neat aluminium footboards. All the three-speed models are fitted with a kick-starter.

7 h.p. MODEL (two-cylinder): 85 × 88 mm.; side by side valves; B. and B. carburetter; chain; two-speed counter-shaft gear.

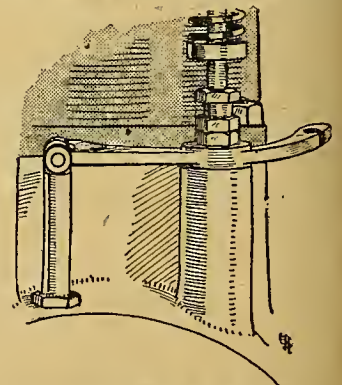
This is quite a new model for 1913, and is made either for solo or sidecar work, sidecar lugs being incorporated in the frame. The engine is a neat piece of work, and drives to a counter-shaft by two chains, and thence by chain to the rear wheel. The gears are engaged by means of expanding clutches, which lock one of two front chains to the counter-shaft. A slipping clutch is fitted

on the engine shaft. The frame has a dropped top tube, and is built on the same lines as the 3½ h.p. frame. Handle starting is fitted to the engine, and very long footboards. The rear brake is of the internal V-type acting on a dummy belt rim. No decompressor is fitted to this model. The company also construct a special sidecar, the chief feature of which is the low chassis position.

**ARNO, No. 43.**

3½ h.p. MODEL: 84 × 89 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Sturmey-Archer three-speed.

THE ARNO MOTOR CO., LTD., Coventry.—One of the features is the attachment of the engine to the frame. The crank chamber is furnished with two horizontal plates resting on platforms brazed to the down tubes of the frame. The attachment is made by four bolts, upon removing which the whole power unit slides out sidewise. In the T.T. model the ordinary type of silencer gives place to a long rearward tube. The frame is



Arno external exhaust lift and adjustable tappet.

dropped considerably, and careful attention has been paid to making it extremely rigid.

The magneto is gear driven, and is placed behind the cylinder, being located on one of the crank chamber plates to which we have already referred.

The 2½ h.p. 77 × 81 mm. and the 2¼ h.p. 65 × 70 mm. machines conform



**The Olympia Show.—**

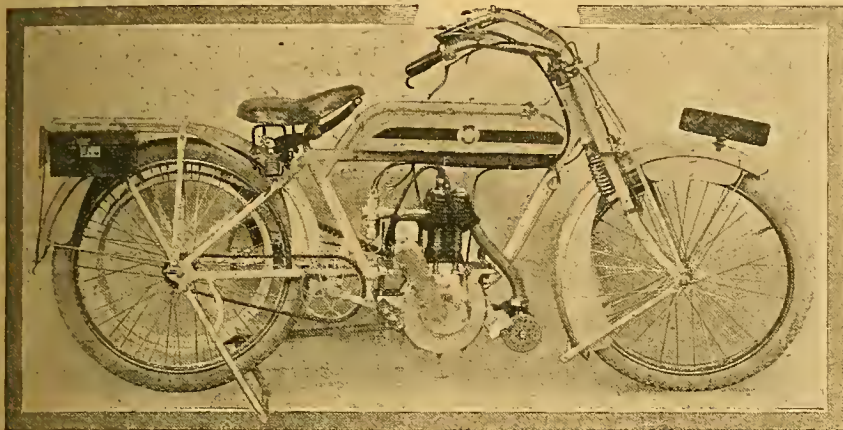
to the same specification, but are shown in single-gear form only. Except in the case of the smallest model, all of the Arno machines can be fitted with pedal-

for easy access to the valves. The tank has large filler caps, and the lubrication by Best and Lloyd is semi-automatic. The front mudguard has wide side extensions all the way round. The rear

one nut. All models are fitted with a neat petrol filter.

6 h.p. MODEL: 70 × 80 mm.; side by side valves; Amac carburetter; N.S.U. two-speed; belt.

The 6 h.p. twin-cylinder model is quite new, and is fitted with a Fafnir engine. A chain-driven kick starter is fitted, and in most respects this model resembles the 3½ h.p. The chief alteration lies in the silencer, which fits longitudinally in



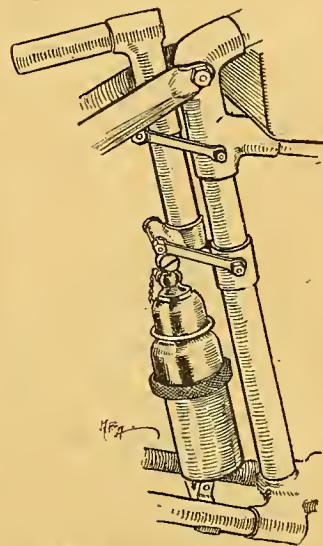
Valve side of the 3½ h.p. Arno.

ing gear, which is entirely removable by undoing a couple of bolts, detachment being so arranged that no sign remains of the pedalling gear when it has been removed.

guard is fitted with a protector for the mud thrown from the belt rim, and a tray to protect the working portion of the rear air springs. Band brakes are fitted to both wheels, that at the rear being operated by a pedal and Bowden cable. A new feature shown for the first time this year is the A.S.L. two-speed gear, which is carried in front of the engine and driven from it by a chain enclosed in an aluminium case. Inside the gear box lies a multiple plate clutch, the gears being always in mesh and changed by sliding dogs. This operation is carried out by a double pedal.

The clutch is operated by a Bowden lever and cable on the left handle-bar. From the gear box the transmission is by a single belt of considerable length, and as the driving pulley is geared down considerably, a small rear belt rim is fitted.

The engine may be started by a pedalling gear which is attached to the bottom bracket, and may be removed by undoing

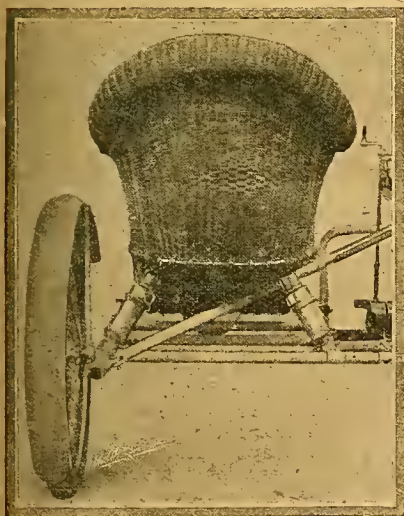


Seat-pillar suspended on an air spring. (A.S.L. stand.)

the frame and has a central air tube for cooling purposes. From the silencer a very large diameter pipe extends to the rear, and is flattened at the end. A guard is fitted over the rear exhaust pipe to protect the rider's leg.

A sidecar suspended entirely on air springs was a late arrival. It should be most comfortable.

The A.S.L. system of spring suspension is an excellent one, and as we wrote last week it is surprising that more motor cycle frames are not sprung.



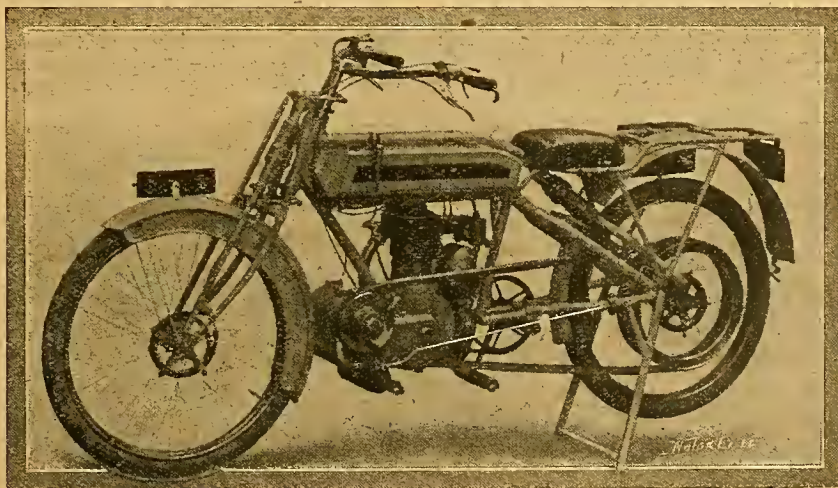
The A.S.L. air spring suspension applied to the rear portion of a sidecar.

**A.S.L., No. 85.**

3½ h.p. MODEL: 84 × 86 mm.; side by side valves; Amac carburetter; A.S.L., N.S.U., or Sturmey-Archer gear; belt.

AIR SPRINGS, LTD., Stafford. — The chief feature of these machines is, of course, the air spring suspension. For some time past these models have been fitted with 26in. wheels.

A departure for the company is a machine with a rigid rear frame, the saddle and front forks being supported on air springs only. The tank has rounded edges, and a portion cut away



A spring frame A.S.L., with two-speed counter-shaft gear in front of the engine.



**The Olympia Show.—****AUTO-WHEEL, No. 126.**

1 h.p. MODEL: 54 × 54 mm.; a.o.i.v.;  
Wall carburetter; chain; single  
gear.

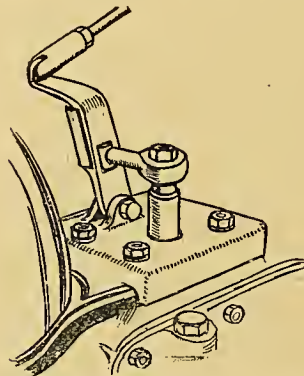
THE INTERNATIONAL AUTO-WHEEL CO.,  
Russell Garage, Russell Road, W.—This  
attachment was very fully dealt with on  
page 1337 in our issue of November 21st,  
so it needs no more than a passing refer-  
ence. The stand contains many examples  
of this ingenious device, which are shown  
separately and also attached to pedal  
cycles.

**BAT, No. 97.**

5.6 h.p. MODEL (twin-cylinder): 76 ×  
85 mm.; side by side valves; Amac  
carburetter; chain; Bat two-speed.

THE BAT MOTOR MFG. CO., Penge,  
London, S.E.—The well-known Bat  
rear springing is retained without altera-  
tion, the chief change being in the rear

gear box. The 8 h.p. model has a bore  
and stroke of 85 × 85 mm., and is an  
exact duplicate of the 5.6 h.p. in other  
respects. It was described on page 1334  
of the last issue. A similar machine is  
constructed for fast touring, the chain



The Bradbury gear control lever has a universal movement.

drive being replaced by a belt, with  
three-speed hub gear. The magneto lies  
in front of the engine, and is driven by  
chain, and the Bat spring forks are  
used, but not a spring frame. The tank  
is torpedo-shaped. Pump lubrication  
only is relied on. All models are provided  
with wide and serviceable side exten-  
sions to the front guards, and front  
wheel stands are fitted throughout. The  
carrier is made of flat strip steel, and  
supports a single large toolbox at the  
rear, the top of which lies flush with the  
top. The control for the Armstrong  
gear is somewhat unusual, in that it lies  
on the right-hand side of the machine  
and is carried across the frame by a rod  
passing through the bottom bracket.

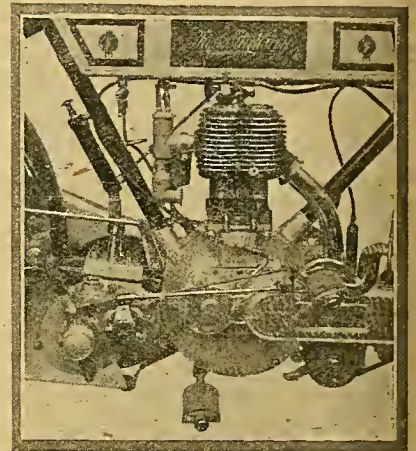
5.6 h.p. MODEL (twin-cylinder): 75 ×  
65 mm.; overhead valves; J.A.P.  
automatic carburetter; belt; fixed  
gear.

This is a T.T. model, and is con-  
structed on semi-racing lines through-  
out. It will be noted that a short stroke  
overhead valve engine is used, in com-  
bination with an automatic carburetter.  
Small silencers are fitted at the  
end of each exhaust pipe. This model  
is very tastefully finished for the Show,  
having the exhaust pipes, etc., copper-  
plated. All the Bat models are beauti-  
fully finished in black or French grey.

**BRADBURY, No. 113.**

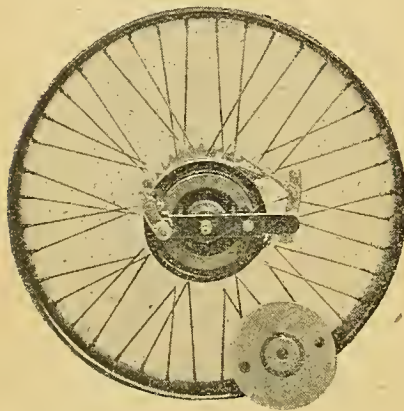
3½ h.p. MODEL: 89 × 89 mm.; side by  
side m.o.; B. and B. carburetter;  
engine-shaft and counter-shaft two-  
speed; belt, belt and chain, or all  
chain.

BRADBURY AND CO., LTD., Oldham,  
Lancashire.—The Bradbury 1913 models  
were dealt with in *The Motor Cycle* of  
November 14th (page 1319), and as the  
belt-driven machine is already so well-  
known, we devote this report to the  
combined drive and the all chain-  
driven machine. Both are fitted with the  
Bradbury two-speed counter-shaft gear,  
and in both cases great care has been  
taken to protect the transmission with  
sheet steel guards. Taking the chain-  
driven model first, one of these is shown  
with standard pattern sidecar, for which  
work it has been specially designed, the  
sidecar attachment lugs are brazed to  
the frame, and specially strong tubing  
is used in the frame construction.



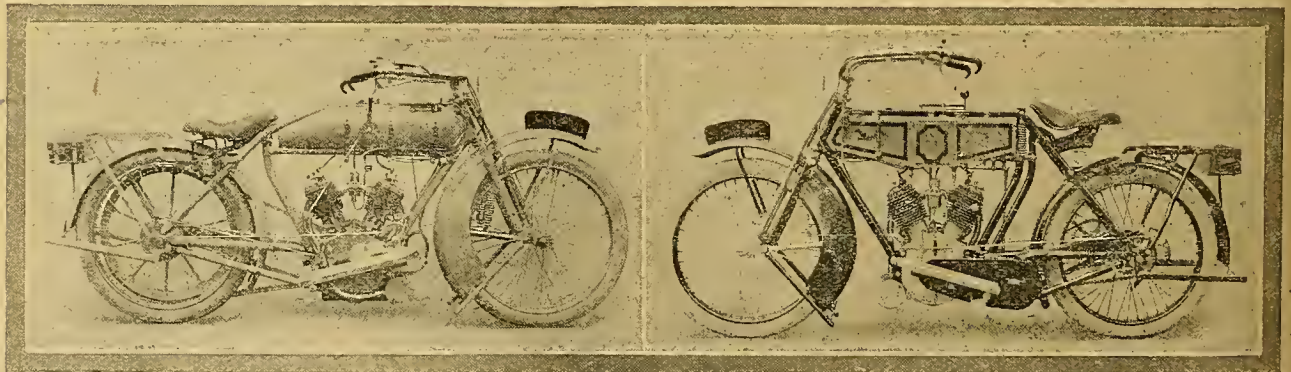
Toper plant of the 2-speed chain and belt drive  
Bradbury, showing clutch control and kick-  
starter.

In the engine the cylinder has been re-  
designed, giving large valve pockets and  
adjustable valve tappets, while the kick  
starter has also been entirely redesigned,  
and is now enclosed in an extension of  
the counter-shaft gear box. The cone clutch  
is now worked by pedal. The gears are  
changed by lever on the top tube. For  
chain adjustment the gear box is slid  
along the stays. A new method is  
adopted for hardening the gear wheels.  
Four patterns of sidecar are on view,



Bat 8 h.p. back wheel, showing both brakes.

brakes. These act on a single drum,  
one internal expanding, the other external  
contracting. The rods are connected  
to the bands by a special spring clip,  
rendering the rear wheel easier to take  
out. The tank is large and fitted with  
spring filler caps. A short chain trans-  
mits the engine power to the gear box,  
which is of the sliding type, an ex-  
panding clutch, the faces of which are  
slightly coned, being used. Thence an-  
other chain drives the rear wheel. A kick  
starter is fixed to the right chain stay,  
power being transmitted by chain to the



Valve side of the 6 h.p. three-speed belt driven Bat.

8 h.p. chain driven two-speed Bat-Jap.

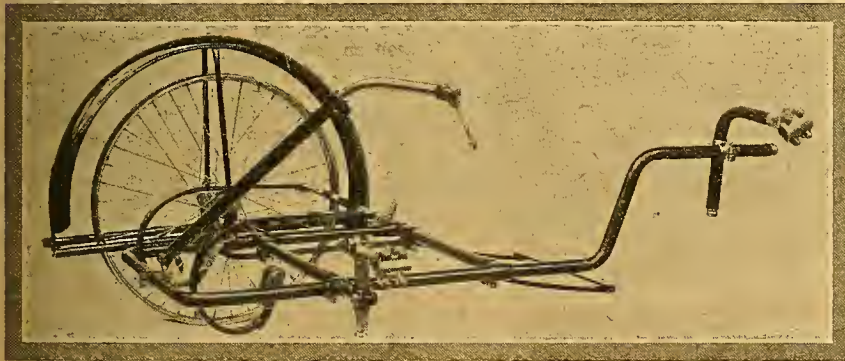


**The Olympia Show.—**

including one coach-built. This is the product of the firm's own Baby Carriage Department, in which they have had much experience with this class of work. Before leaving the machine, special mention should be made of the design of the left foot rest, which affords an additional security attachment for the sidecar frame. The circular dished cover for the clutch is now hinged, and by undoing a single screw the clutch is accessible. On the sidecar the combined sprag and stand is pivoted on the axle, and by means of a lever can be operated by either driver or passenger. The sidecar frame is extended rearwards to form a luggage platform. The combined belt and chain-driven model may best be described as a modification of the chain model, but it is noteworthy that the gearing down of the counter-shaft admits of a comparatively small rear belt rim and a large counter-shaft belt pulley. The very special provision for protecting the belts has already been illustrated in our pages. A new kick starter of the free wheel chain-driven type and totally enclosed is incorporated in the open drive belt model.

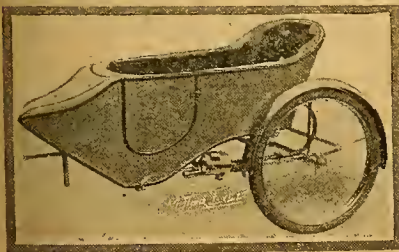
**BRAMBLE, No. 41.**

BRAMBLE MFG. Co., London Road, Coventry.—Five types of Bramble sidecars, with various patterns of bodies. The most interesting feature is a quickly detachable joint which consists of a circular slotted end, the slot being cut on a spindle formed with the portion attached to the bicycle frame. Inside

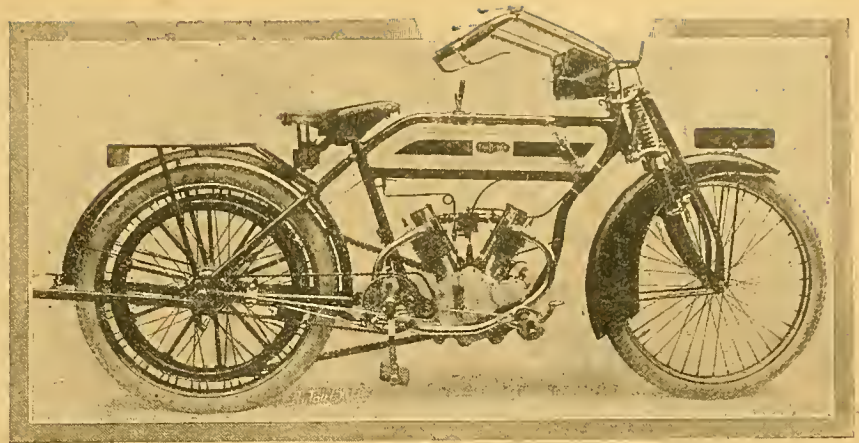


Bramble sidecar chassis, which has a slightly dropped frame.

it is a circular slotted disc provided with a lever which allows it to be turned round. Another feature on this stand is a sidecar provided with a detachable wheel. This wheel is carried in a pair of forks slotted at the rear end. When the spindle nuts are loosened they allow the wheel to be removed in its entirety.



Example of a Bramble sidecar body.



An entirely new model Brown. The engine is a  $3\frac{1}{2}$  h.p. twin-cylinder.

A stand is fitted to the fork in which the wheel runs; this is similar to those used with motor cycles.

**BROUGH, No. 36.**

$3\frac{1}{2}$  h.p. MODEL:  $85 \times 88$  mm.; side by side m.o.i.v.; Senspray carburetter; single gear; belt.

BROUGH MOTORS, Nottingham.—This is a well-designed machine built on absolutely standard lines. A feature is the wide petrol tank, which carries an ample supply of spirit. A similar model is shown fitted with an Armstrong three-speed gear.

no curved tubes used in the frame. The back mudguard is extended to prevent mud being thrown up by the belt rim, and, in company with other models shown, is provided with a handle starter and three-speed gear. There are also shown on this stand two sidecars, one fitted with a tradesman's carrier, and the other with a handsome touring body with side door and adjustable wind screen.

**BROWN, No. 144.**

$3\frac{1}{2}$  h.p. MODEL (twin):  $63 \times 80$  mm.; overhead valves; semi-automatic carburetter, two jets; Armstrong gear.

BROWN BROS., LTD., Great Eastern Street, E.C.—A new model twin-cylinder medium weight of  $3\frac{1}{2}$  h.p. The cylinders are set at  $60^\circ$ , and the valves are of the overhead type, the seating being in the domes, so that the whole valve can be removed for regrinding. The exhaust pipes are driven tightly into holes in the cylinders and secured by a grub screw. Each jet of the two-jet carburetter is adjacent to the inlet pipe which it serves. The tank holds  $1\frac{1}{2}$  gallons of petrol, and ignition is by Bosch magneto. Footrests as well as pedals are provided. The gear is the No. 7 three-speed Armstrong, which allows the engine to be started with rear wheel on the ground. The mud-guarding has been well looked after, that of the front wheel being particularly good, while the back guard has an extension to catch any mud thrown off the belt rim. The handle-bars are wide, and have the ends dropped, allowing a comfortable riding position. A Brown petrol

6 h.p. MODEL (twin-cylinder):  $77 \times 88$  mm.; side by side m.o.i.v.; Senspray carburetter; single gear; belt.

The Brough machines were fully described on page 1309 of our issue of November 14th, so that only a brief reference is necessary. On the T.T. model a single gear is provided, no silencer but a long exhaust pipe, whilst in the touring model an Armstrong three-speed gear and standard silencer are supplied. This is a type on which Geo. Brough has been so successful in various competitions during the 1912 season.

Lady's MODEL:  $85 \times 88$  mm.; side by side m.o.i.v.; B. and B. carburetter; Armstrong three-speed gear; belt.

The lady's model is an excellent piece of work, and it is interesting to note that the top tube is duplex, and there are



Improved design spring fork on the Brown. Note the long bearing and reinforced head.



**The Olympia Show.—**

filter with three-way cock is fitted, also handle-bar control to the magneto. The exhaust pipes are long and gracefully curved, terminating in an expansion chamber of slightly larger diameter than the exhaust pipe, and drilled with numerous small holes. The spring fork design has been improved, and the machine is beautifully finished.

$3\frac{1}{2}$  h.p. B. MODEL: 86 × 86 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; three-speed Armstrong or two-speed Bowden counter-shaft gear.

The  $3\frac{1}{2}$  B model, like the  $3\frac{1}{4}$  B, has dropped top tube, which is a new feature of the Brown motor bicycles. It is fitted with Bowden two-speed gear and kick starter. It has not undergone any other alterations



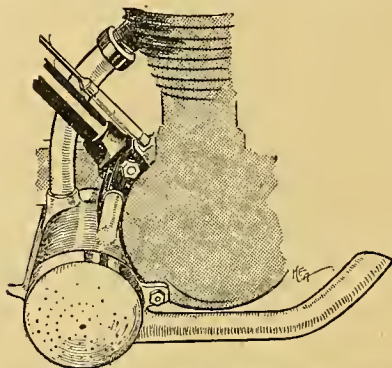
Showing neat bend of exhaust pipes and expansion chamber at the end, on the new  $3\frac{1}{2}$  h.p. Brown twin.

**B.S.A., No. 50.**

$3\frac{1}{2}$  h.p. MODEL: 85 × 88 mm.; side by side m.o.i.v.; B.S.A. carburetter; chain; counter-shaft two-speed.

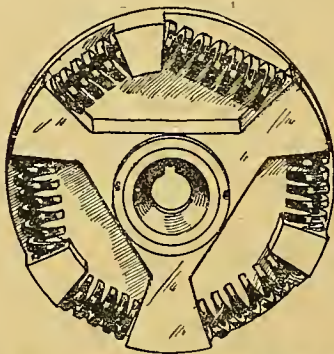
BIRMINGHAM SMALL ARMS CO., LTD., Small Heath, Birmingham.—It is quite safe to say that on no stand do the motor cycles exhibited show a higher standard of workmanship and finish than those exhibited by the B.S.A. Co. The most interesting machine is naturally the newest type, in which entirely enclosed chain transmission is used in conjunction with the B.S.A. two-speed hub. The change is effected by a rocking pedal placed adjacent to the left footboard. The cylinder is offset, and the widening of the fins so as to give the largest possible radiating surface to the head is very noticeable. The B.S.A. carburetter, which was described in our pages recently, is designed to give a straight through induction at all speeds. A kick starter is very neatly arranged on the off side of the machine, and is adapted to the bracket which supports the counter-shaft of the chain transmis-

sion. A semi-automatic lubricator is fitted, whilst the spring forks are of the well-known B.S.A. type. The silencer is



On the T.T. B.S.A. a secondary exhaust pipe conducts the gases to the rear of the engine.

in front of the engine immediately behind the chain-driven magneto. An exhaust pipe lead to the extreme rear of the machine ensures quietness of running. Other models which are shown on this comprehensive stand have all the same sized engine, and comprise a T.T. type with single gear and belt drive, a tourist type with single gear and free engine, a



B.S.A. spring drive mechanism fitted on the engine-shaft.

belt-driven two-speeder with the B.S.A. hub gear, and a model which the firm have named "All English Type."

These machines have been very successful in nearly all the open and other events in which they have been ridden during the past season.

**CALCOTT, No. 51.**

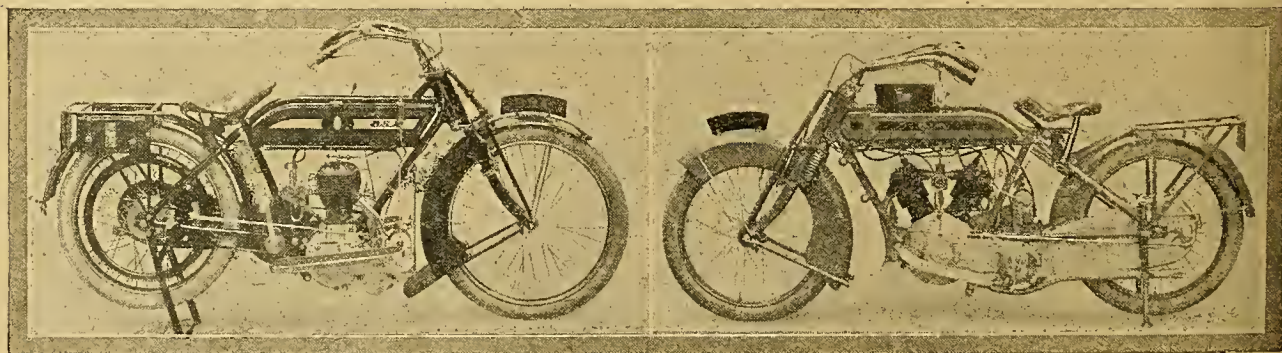
$2\frac{1}{2}$  h.p. MODEL: 70 × 76 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Armstrong three-speed.

CALCOTT BROS., LTD.—The  $2\frac{1}{2}$  h.p. fixed gear model is shown in addition to the above, also as a T.T. model. The engine is specially characterised by compactness. The magneto is placed immediately behind the cylinder, where it is driven by an enclosed train of gear wheels. Immediately behind and at the side of the magneto is the carburetter. The cylinder is pronouncedly off-set to the crankshaft a valuable point in a small-sized engine that is required to pull hard. The silencer is of aluminium and the use of a copper-plated exhaust pipe gives this part of the power unit a very natty appearance.

In order to allow the use of straight levers on the foot brake and gear control neat rocking shafts are arranged. A feature of the machine is the design of the bottom bracket, which carries a pedalling gear and is extended forwards and outwards to support the engine. The T.T. model has adjustable footrests in the place of pedalling gear, but the latter can be substituted for them immediately if desired. It has also a long plain exhaust pipe with a flattened end in place of a silencer. Druid forks are used throughout, and an ordinary hand lubricating pump is employed.

**CANOULET, No. 125.**

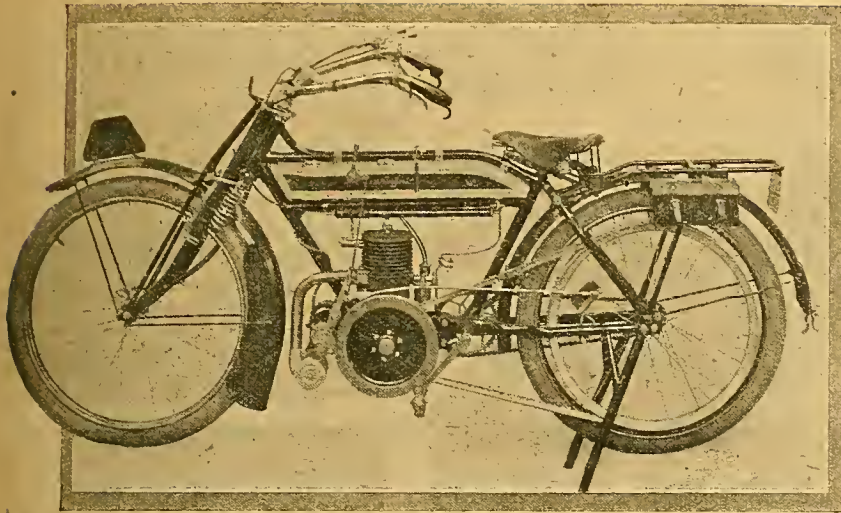
MEAD AND DEAKIN, Ladypool Road, Sparkbrook, Birmingham.—Undoubtedly the sidecar that will attract most attention on this stand is the luxurious coach-built torpedo-bodied conveyance complete with wind screen, Cape cart hood, and side curtains. A substantial luggage grid that hinges down from the curved up back members of the frame. An additional tubular strut has been introduced with the result that the structure is now triangulated to afford very much greater strength. Notable among the other bodies is a deep torpedo open touring body with rolled and upholstered side arms, and another fitted with a torpedo apron giving very complete protection for an open body. An important point in the Canolet design is that the front connections are carried across both the longitudinal frame members, so that were one joint to go the other would still be available.



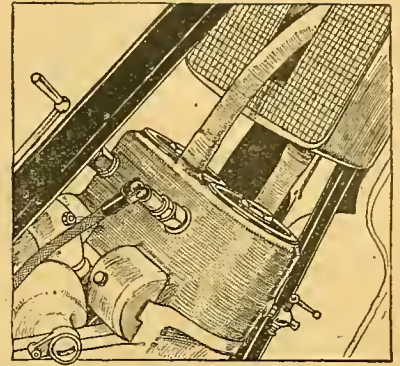
Valve side of B.S.A. two-speed chain-driven machine.

6 h.p. Clyno, showing three-speed gear and chain cases and long exhaust pipe.

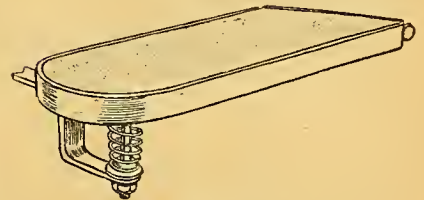




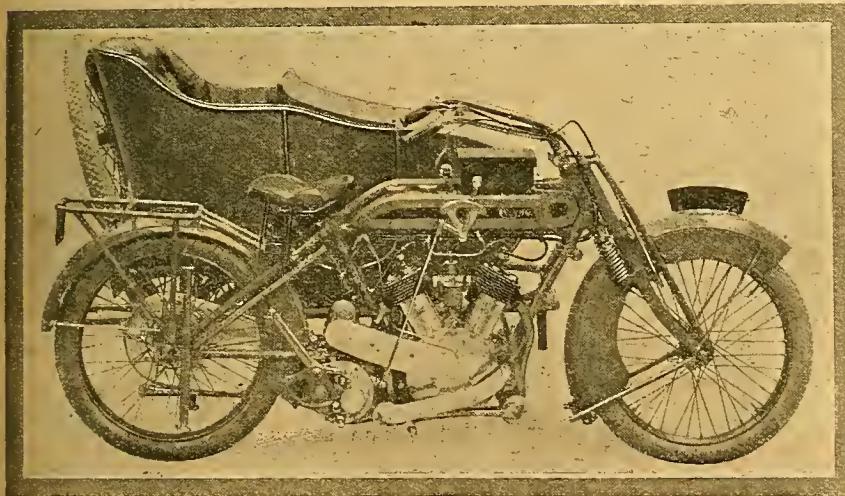
Connaught two-stroke single-cylinder lightweight.



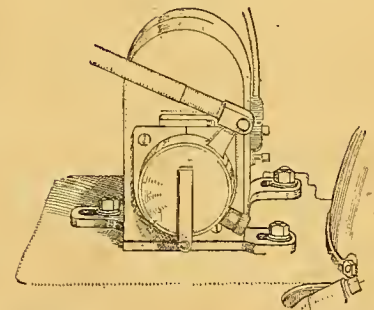
Scott engine, showing water-cooled cylinders with air cooled heads, transfer ports, and position of radiator.



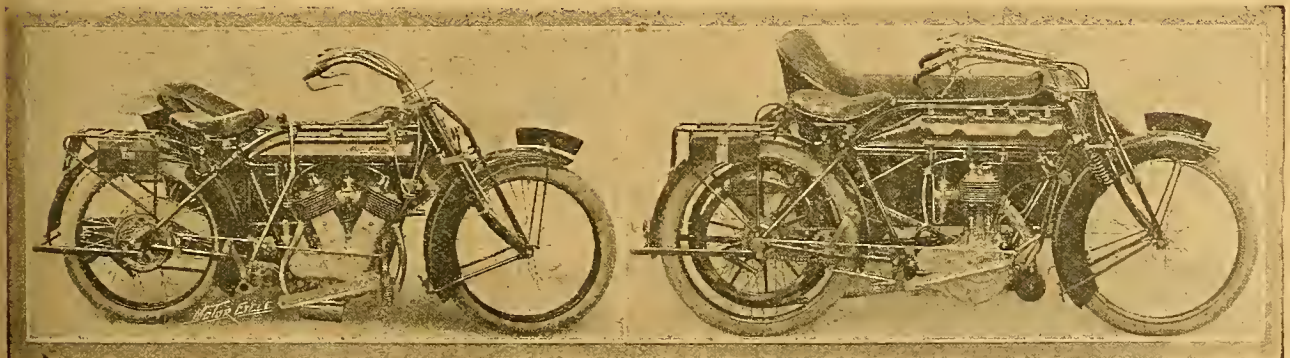
L.M.C. spring footboard.



1913 Clyno Standard Sidecar Outfit. Detachable wheels are fitted and a spare wheel is included.



Slotted baseplate of magneto on the Clyno to enable ready adjustment of driving chain.



Alldays 6 h.p. twin sidecar combination.

Centaur 3 1/2 h.p. three-speed model, with kick starter.



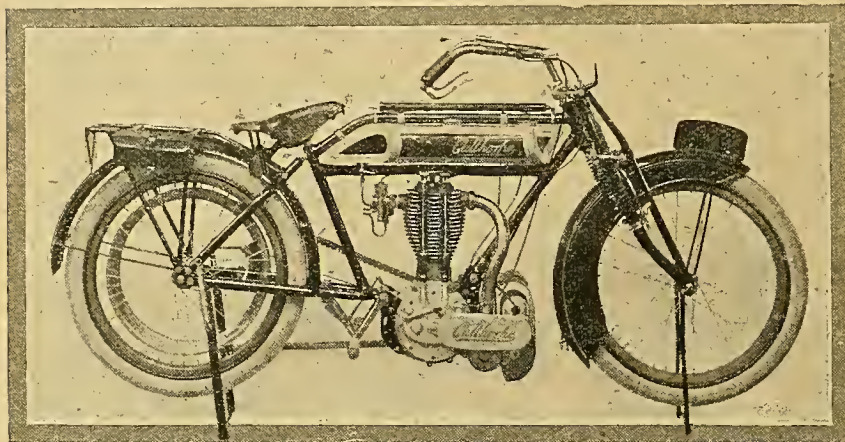
**The Olympia Show.—****CALTHORPE, No. 23.**

2½ h.p. MODEL: 75 × 85 mm.; m.o.i.v.; side by side; Amac carburetter; belt; Armstrong three-speed gear.

MINSTREL AND REA, Barn Street, Birmingham.—This is a very serviceable

6 h.p. MODEL (twin-cylinder): 75 × 85 mm.; side by side m.o.i.v.; Amac carburetter; belt; Calthorpe two-speed.

This is another sidecar model, which, except with regard to the engine, possesses the same features as the two foregoing machines.



T.T. Calthorpe with overhead valve engine. This machine has wood rims.

lightweight, and in company with all other Calthorpe models it is fitted with pump fed drip feed lubrication. Pedals are provided for starting on this model, but all others are without pedals.

3¾ h.p. T.T. MODEL: 85 × 88 mm.; overhead valves; Amac carburetter; belt; single gear.

This model is fitted with wide handlebars, ordinary saddle, and fixed gear. Footrests instead of footboards are provided, but in all the other models except this and the 2½ h.p., comfortable footboards are supplied.

4½ h.p. MODEL: 90 × 95 mm.; side by side m.o.i.v.; Amac carburetter; chain and belt; Calthorpe two-speed counter-shaft gear.

This machine is especially designed for sidecar work, and the sidecar to which it is attached is provided with a tradesman's delivery body. The chassis also takes a touring passenger body if desired.

3½ h.p. MODEL: Green-Precision engine, 85 × 88 mm.; side by side m.o.i.v.; Amac carburetter; chain and belt; D.H.K. three-speed gear.

This model has a water-cooled Green-Precision engine and a kick starter. In the case of the D.H.K. gear, the change is effected by means of dog clutches. The plate clutch is carried on the counter-shaft. All models are provided with efficient side shields to the front mudguards, spring-up back stands, and front wheel stands.

**CENTAUR, No. 89.**

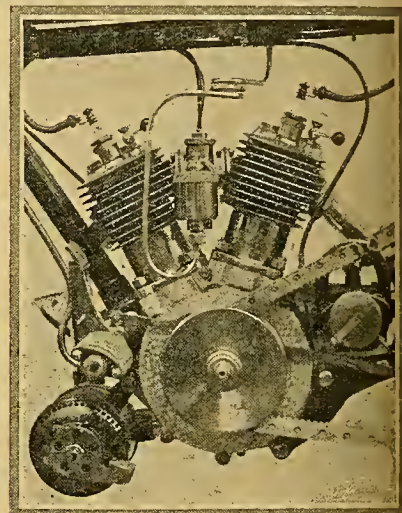
3½ h.p. MODEL (single-cylinder): 84 × 86 mm.; side by side valves; Amac carburetter; belt; Armstrong VI.

THE CENTAUR CO., LTD., Coventry.—The new Centaur model may be distinguished by square cylinder radiating ribs. In most respects, however, they are similar to last year's model. The

tank is circular and lubrication is by an enclosed pump. Neat rubber-covered footboards are fitted as standard.

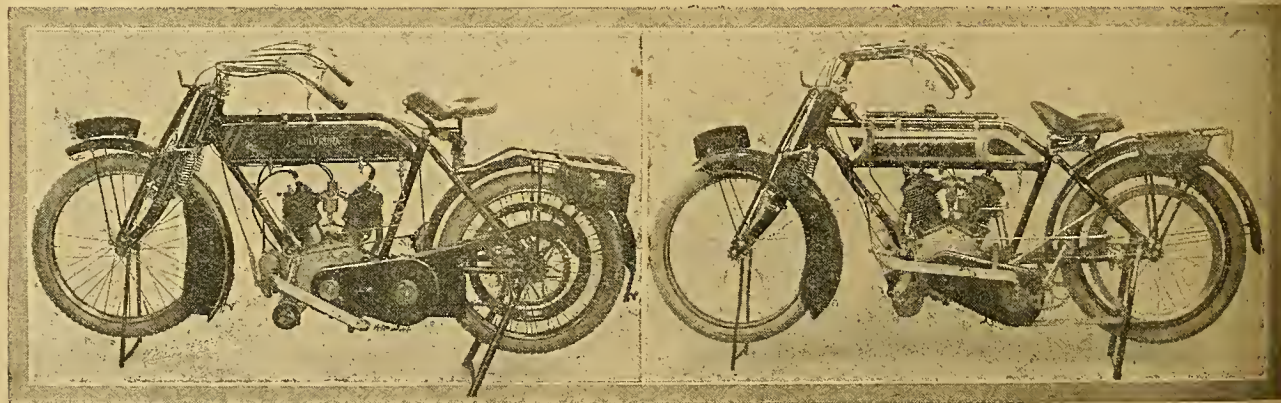
The Armstrong mark VI. hub gear is used. A neat kick-starter is fitted on the off side, consisting of a pedal, which drives the rear hub clutch by a short length of chain. The magneto is gear-driven, and lies behind the engine well out of the way of mud and water. The gear is operated by a single pedal, but the clutch may be held out by means of a spring catch. The rear rim brake is interesting in that the shoe is of unusual length; it operates inside the V of a dummy belt rim. The shoe is pivoted so that the full length of the shoe accommodates itself to the radius of the rim.

The front mudguard has side wings extending its full length, and the rear guard is hinged and has a neat belt protector attached to it. The carrier is



2½ h.p. Centaur power plant. The radiating flanges are of square shape.

of ample dimensions, and supports pannier toolbags, which do not interfere with the luggage accommodation. The spring forks are of the Druid type made under licence. A large expansion box is fitted across the frame in front of the engine, which renders the exhaust extremely quiet.



6 h.p. Wulfruna, with counter-shaft gear and chain drive.

Twin-cylinder two-speed Calthorpe, with belt and chain drive.



**The Olympia Show.—**

2½ h.p. MODEL (V twin): 60 × 60 mm.; side by side valves; Amac carburetter; belt; Armstrong V.

This model is similar in most respects to the 3½ h.p.; the silencer, however, is fitted with an internal baffle plate and has no emission pipe, and the side flaps of the front guard extend to the fork only. The foot brake also is of the usual pull-on type and shoe is not pivoted. Pedalling gear is fitted chiefly for the purpose of starting the engine, which can be done with the rear wheel on the ground.

2 h.p. MODEL (single-cylinder): 60 × 70 mm.; side by side valves; Amac carburetter; belt.

This model is practically a single-cylinder replica of the 2½ h.p. just described, with the exception of the fact that no change-speed mechanism is fitted. All Centaur models have off-set cylinders.

**CHATER-LEA, No. 78.**

8 h.p. MODEL: Side by side valves; Amac carburetter; chain; Chater-Lea three-speed counter-shaft.

CHATER-LEA, LTD., Golden Lane, E.C.—Several examples of the popular No. 7 sidecar model are exhibited. The magneto is now fitted behind the engine. The three-speed gear box, which incorporates a multiple disc clutch and chain drive, remains as before. The tank is capable of containing two and a half gallons of petrol and half a gallon of oil. The sidecar has a dropped loop frame with trussed side members and a coachbuilt body.

3½ h.p. MODEL: 70 × 64½ mm.; side by side valves; chain and belt; Sturmey-Archer three-speed gear.

This is quite a new model, and a very interesting machine. The engine is a twin J.A.P. The drive is by chain to the counter-shaft, where a spring wheel offsets the harshness of the chain, thence to the back wheel by belt with 8in. diameter pulley. The foot starter engages with the counter-shaft. The

Neots lubricator is fitted. Side wings are fitted to both mudguards. This model is known as the No. 10.

**CLYNO, No. 122.**

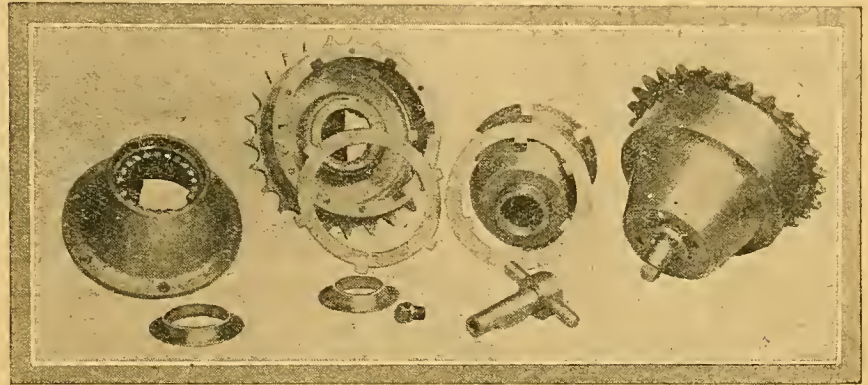
5-6 h.p. MODEL: 76 × 82 mm.; m.o. side by side; B. and B. carburetter; chain; three-speed counter-shaft.

CLYNO ENG. Co., Wolverhampton.—Various examples of the Clyno, with and

for special remark. The sidecar lugs are brazed to the frame. The Clyno is essentially a sidecar machine, and in this connection it is instructive to note that the sidecar frame has been strengthened by the introduction of a diagonal tubular strut at the front of the frame, where it connects to the motor cycle.

**COMFY, No. 114.**

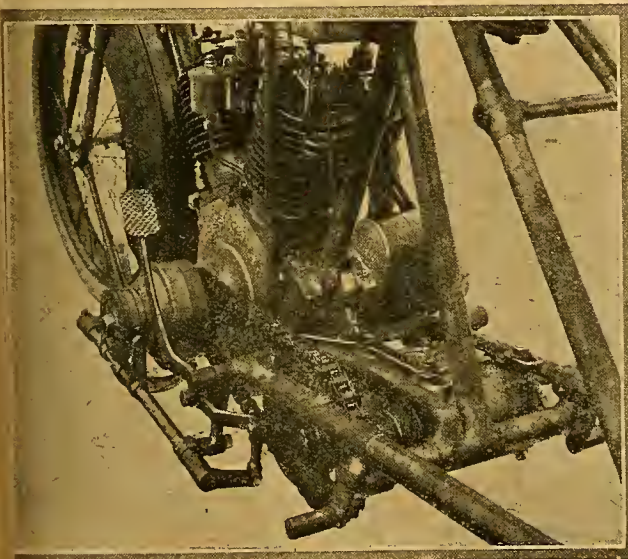
COMFY SIDECAR Co., High Road, Leytonstone.—The sidecars on this stand



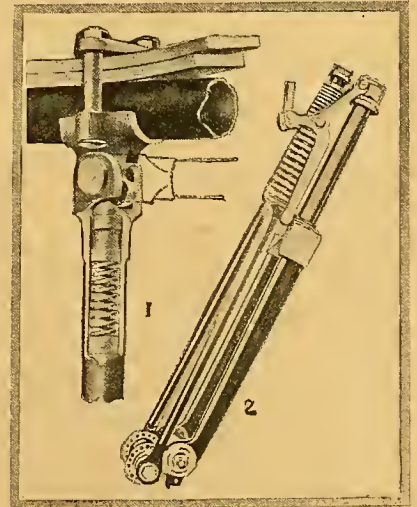
Parts of Clyno multiple-disc clutch.

without sidecars, are exhibited. For 1913 this excellent passenger motor cycle has been entirely redesigned, and it would be a difficult matter to criticise any portion. The kick starter is now on the right hand side, whilst the frame has been modified to give a larger tank and yet a lower riding position. The silencer is made of aluminium. The waterproof type magneto is handle-bar controlled, and the carburetter is automatic and controlled by one lever placed above the throttle lever. The lubrication arrangements also have been modified, so as to feed the oil automatically by pressure through a sight feed adjustable oiler on the top of the tank. The chain cases are made so as to constitute an oil bath for the Renold roller chains from engine to gear box and gear box to back wheel. As the magneto, which is placed on the bracket above the gear box, is chain driven, provision is made for adjustment by securing it with bolts through slotted holes, and the same principle is applied to the gear box. The gear ratios are now 4½, 8½, and 14½ to 1. 26in. × 2½in. tyres are fitted, and special care has been given to render both quickly detachable. Strong stands are provided for both wheels, the patent adjustable stand of the back wheel calling

comprise two designs of chassis. In one the axle is reinforced by a dropped tube that enables the body to be swung lower, as the back stay to the seat-pillar can then be carried in a straight line from the lower member. With the addition of a light grid arrangement accommodation is afforded for a spare petrol can or luggage. At the outer end of the axle, too, the down tube to the lower member is used to accommodate a patent stand, which slides in it, and on being let down by the release of a catch, automatically locks itself with the lifting of the sidecar wheel. Various types of body are fitted to this sidecar, but to suit the torpedo type of body the frame is made with a dropped front member.



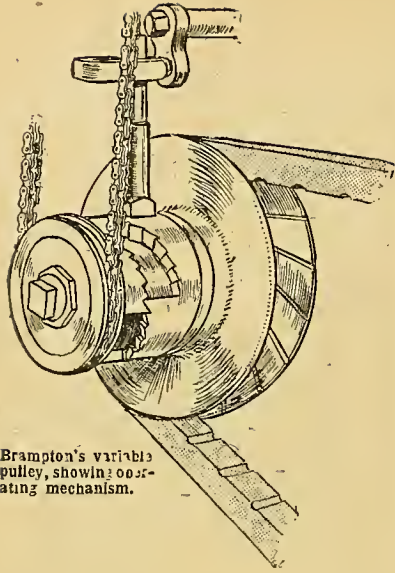
Chater-Lea No. 7 model, showing combination of engine, magneto, gear box and clutch with operating mechanism.



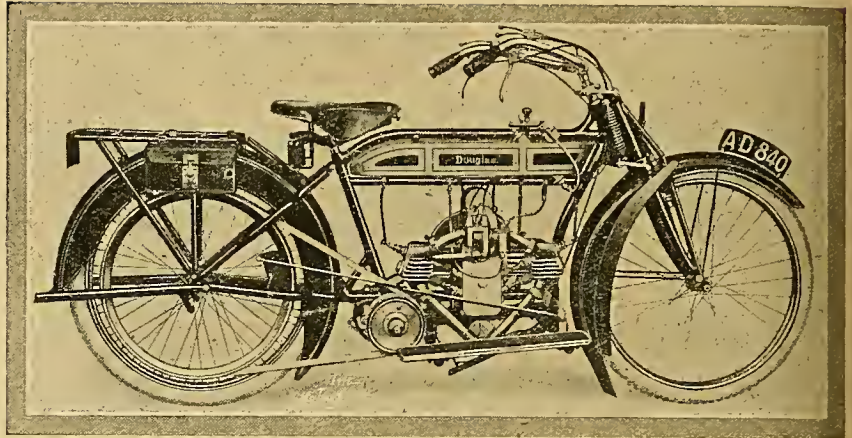
(1) Chater-Lea patent sidecar stand. The hinge is kept in open or closed position by the coil spring.  
(2) New design of fork sidecar stand fitted to the Chater-Lea No. 7 model. The connecting links are fitted with ball-bearings.



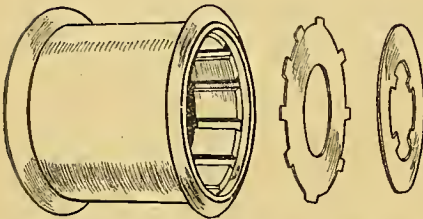
# Variably-geared Lightweights.



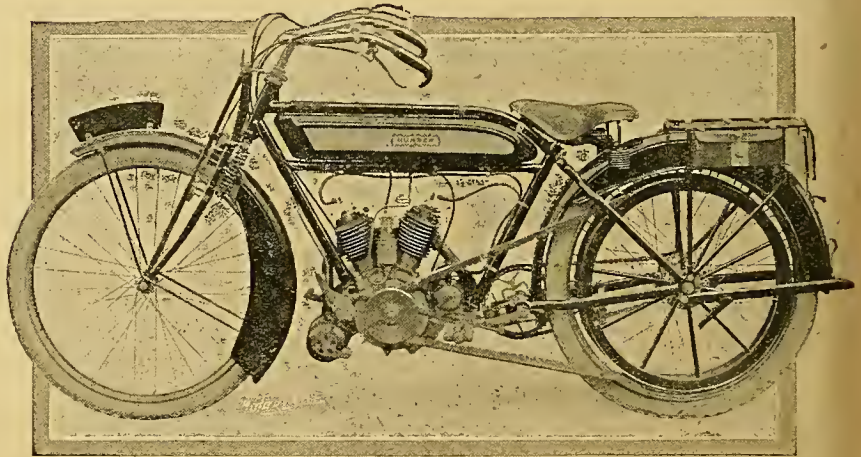
Brampton's variable pulley, showing co-ordinating mechanism.



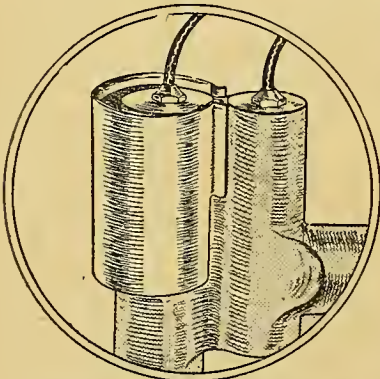
2 1/2 h.p. two-speed Douglas, fitted with new pattern front mudguard.



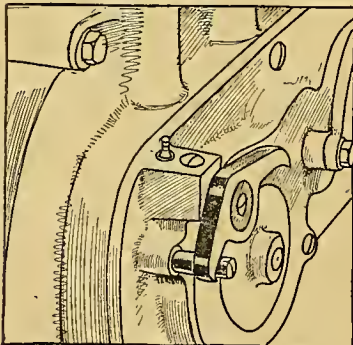
Sheil's of the Sturmey-Archer three-speed gear, with two of the set of clutch plates.



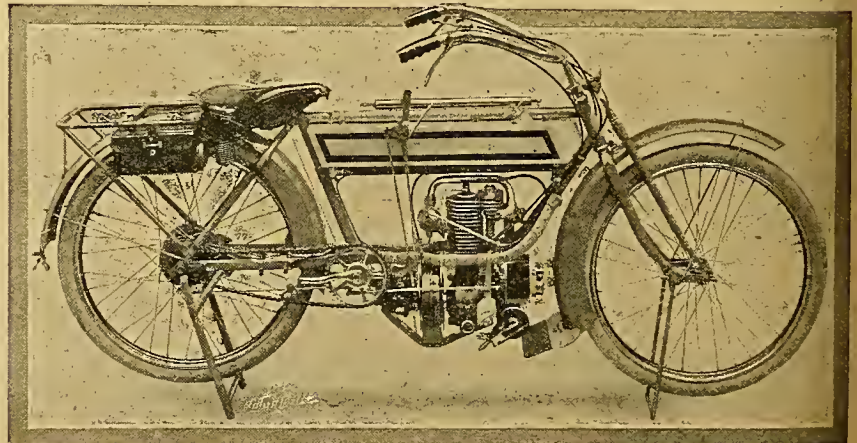
2 1/2 h.p. twin-cylinder clutch model Hunter.



Triumph gauze cover which clips over the inlet valve cam.



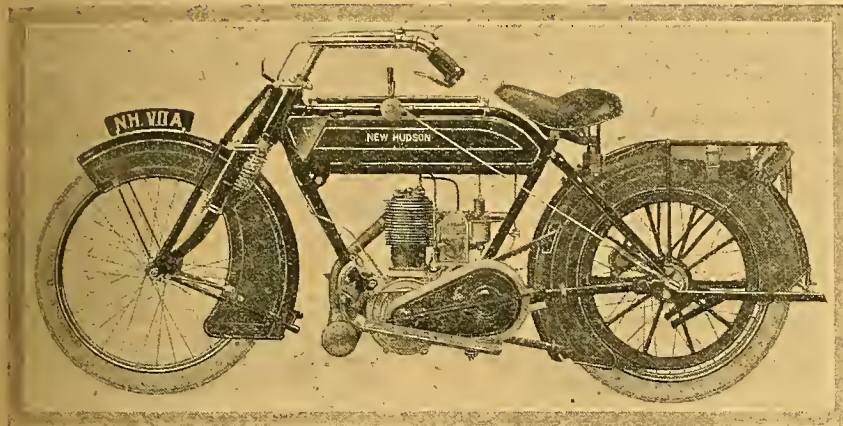
Triumph gear mechanism, showing inlet valve cam.



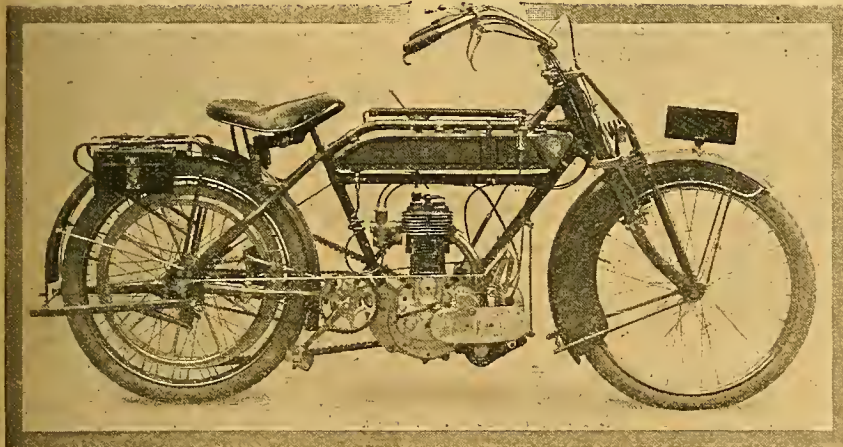
2 1/2 h.p. shaft-driven two-speed F.N.



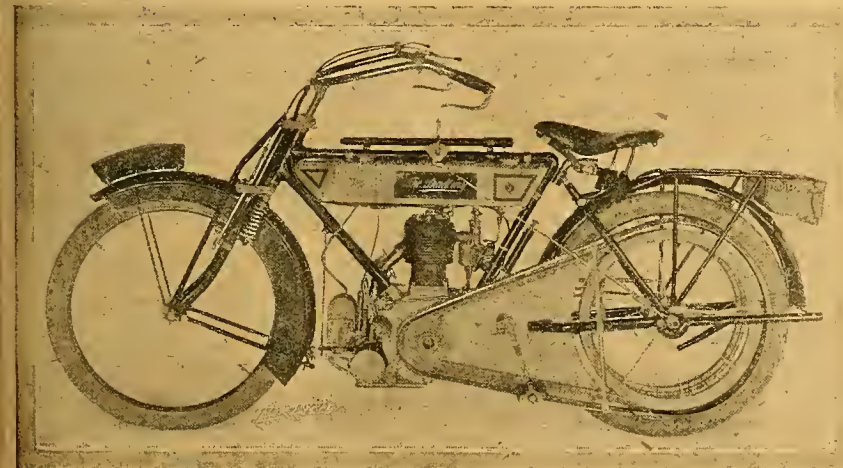
## Single-cylinder Three-speeders.



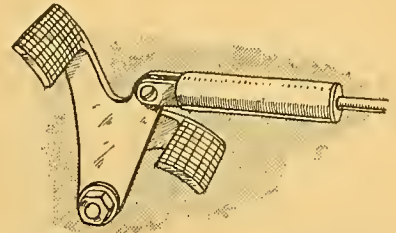
New Hudson 3.1 h.p. three-speed model, with exceptionally large mudguards.



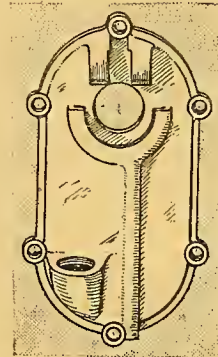
Valve side of the Monopole—an entirely new model fitted with a Precision engine and S.A. three-speed gear.



89 x 89 mm. Bradbury three-speed (belt side) showing the efficient mud guarding of the belt.



B.S.A. gear control which works on a notched quadrant, and has an enclosed spring which aids the low gear clutch mechanism.



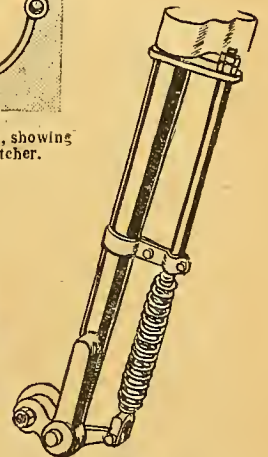
A.J.S. gear box end, showing oil filler and catcher.



New exhaust pipe cut on the new Singers.



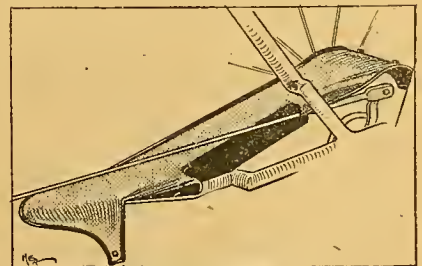
Forked big end bearings of the new 7-9 h.p. twin Premier. The large diameter of the bearing and the oil hole will be noted.



Arrangement of L.M.C. new fork.



Valve tappet adjustment plates on the Service Co.'s stand.



Cast rear chain guard.

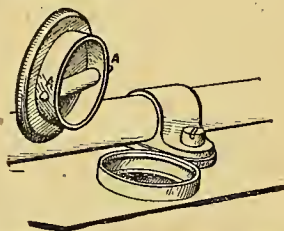


## The Olympia Show.—

**CONNAUGHT, No. 17.**

3 h.p. MODEL: 292 c.c.; two-stroke; Amac carburetter; belt transmission.

BORDESLEY ENGINEERING Co., Birmingham.—This is an interesting little machine, which is shown on the Service Company's stand, in that the lubrication is effected in a peculiar manner. To the present model there is no lubricating oil pump but a small measure screwed on to the oil tap union which is filled with oil and poured into the petrol tank. Beyond a charge of oil in the crank case, the lubrication is effected through the lubricant being mixed with the spirit—a system which we are led to believe is entirely satisfactory. The gas is drawn in from the front of the cylinder, and on entering the engine it cools the outgoing exhaust charge. There is, of course, a partition between the inlet and exit ports. The transfer port is cast at the rear of the cylinder. The machine is neatly designed throughout, and is illustrated on another page.



Spring filler caps on the Corah tank. A.A. spring points.

**CORAH, No. 25.**

3 h.p. MODEL: 60 x 76 mm.; m.o.i.v.; B. and B. carburetter; belt; single gear.

CORAH MOTOR MANUFACTURING Co., King's Norton, Worcester.—At the time our report was made only one model was to be seen on this stand, specification as given above. The machine is fitted with a somewhat novel built-up lamp bracket attached to the sprung portion of the frame, thus possessing the advantage of being insulated from road shocks. Comfortable footboards are fitted, and the peculiarity of the frame construction is that an additional stay runs from the rear fork ends to the lower portion of the crank case. The hubs and handle bars are finished in black. The sidecar is fitted with a canoe-shaped body with a spacious locker behind. The sidecar wheel is sprung, and the wheel runs on ball bearings of the cage type. A 6 h.p. machine was expected.

**DAY-LEEDS, No. 95.**

3½ h.p. MODEL: 85 x 88 mm.; overhead inlet; carburetter to order; Bowden counter-shaft two-speed belt.

JOB DAY AND SONS, LTD., Ellerby Lane, Leeds.—This is the first time the Day-Leeds motor cycle has been exhibited at Olympia. The engine has several features well worthy of note. The decompressor is particularly simple and is brought into action by the motion of a special rocker. The exhaust valve lifter is neat, the valve being raised by a cam. The inlet valve lies over the exhaust, and may be very

readily detached complete with its pocket. This is done by simply unscrewing a locking ring and removing the unit. Both valve tappets are adjustable, and the inlet tappet has an additional guide cast with the inlet pipe.

The magneto is gear-driven and behind the engine. The frame is of the standard dropped-tube type, and the tank has neatly rounded edges; it is supported by lugs fixed to the lower rail. The lubrication is by semi-automatic drip, and the oil pipe leads to a groove surrounding the baffle plate in the crank case. Thus the piston dips directly in the fresh oil, and the surplus is splashed to the base chamber. This method ensures perfect lubrication to the most important part, i.e., the piston. The machine may also be obtained either with fixed gear or Villiers free engine. Side flaps extending to the front forks are arranged on the front guard, and both front and rear wheel stands are fitted. The handle-bars are finished all black. Druid forks are fitted, and a particularly stout carrier with pannier tool bags.

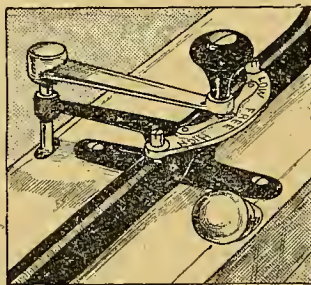
An important item on this machine is the finger-adjustable pulley, which is of very stout construction and extremely simple in its action.

A special sidecar chassis is shown, which is extremely low and especially strengthened at the important points.

**DOUGLAS, No. 104.**

2½ h.p. MODEL: 60.5 x 60 mm.; m.o. inclined; combined chain and belt; counter-shaft two-speed gear.

DOUGLAS BROS., LTD., Kingswood, Bristol.—All Douglas 1913 machines, of course, embody the 2½ h.p. horizontally-opposed engine, and the combined chain and belt counter-shaft drive which the firm have rendered so famous. We dealt at such length with these models in our



The tank supports and bracket for gear control are brazed to the top tube on the 1913 Douglas.

issue of the 14th inst. (pages 1296b and 1297) that it only remains to recapitulate a few of the more salient features. Apart from the modification in the valve design affording an easier flow of gas, and the adoption of the enclosed Bosch magneto, the improved lubrication is one of the more essential new features. Oil is supplied through a Best and Lloyd pump by a spring-forced plunger, the feed of which is regulated by an adjustable needle valve.

One feature of the Douglas machine which at once strikes the eye is the fact that while the chain from engine to counter-shaft is carried on the left the drive from counter-shaft to back wheel is

taken on the right hand side of the gear box. The several patterns exhibited include a single-gear light touring model with free engine clutch and foot boards, a light touring model without clutch and with two speeds and foot-rests, while still another is the full roadster, the lines of which are, in general, followed on the ladies' model S, but this has, of course, an open frame. The saddle position is unusually low, thus the machine is suitable not only for ladies but for short or elderly men.

The mudguarding has been specially studied. The operating rod for the two-speed gear now runs through the wide tank on the men's model. The great successes of the Douglas machines during the last year or two have so focussed public attention on them that we need not dilate too much on the details of the machines, which, however, deserve most careful study and attention from every motor cyclist.

**DUNHILL, No. 42.**

ALFRED DUNHILL, LTD., Euston Road, N.W.—Several sidecars are exhibited fitted with various bodies, from the inexpensive but comfortable wicker body to the more expensive type of coachbuilt body with torpedo top. A novel form of body with an extra seat at the side for a child was described in our last issue. An interesting type of sidecar is one fitted with a sort of tulip body—quite an unconventional design. One sidecar is fitted with a nickel-plated chassis. Dunhills, Ltd., also exhibit the Regal-Green motor bicycle on which Garrett recently succeeded in making some new sidecar records.

**EDMUND, No. 102.**

3½ h.p. MODEL (single-cylinder): 85 x 85 mm.; side by side valves; B. and B. carburetter; chain and belt; Albion two-speed counter-shaft.

CHARLES EDMUND AND Co., Chester.—The chief feature of this bicycle is its spring frame. The saddle member is pivoted at the steering head and supported at the rear end of the carrier by an arrangement of laminated leaf springs, a quarter elliptic spring being supported at each side of the carrier and shackled to another leaf spring, which is pivoted to an extension of the rear fork ends. This feature is a clever attempt to overcome the frame springing difficulty. In other respects the machine follows standard lines. The front mudguard has side flaps extending as high as the forks. A cast aluminium silencer is fitted at the front of the engine and below the magneto, the latter being chain-driven.

Three other models are shown, one fitted with the new 5-6 h.p. twin Fafnir, which has belt drive to an Albion hub two-speed. A 4 h.p. single-cylinder Fafnir with belt drive to an Albion hub clutch and a 4 h.p. single-cylinder J.A.P. with a fixed belt drive.

An unusual fitment is that of the new Albion two-speed revolving counter-shaft gear, with which we intend to deal in detail at a later date.

Briefly described, the gear is mounted on a bracket just above the bottom bracket of the frame. The whole gear revolves, and it is fitted with a neat kick-starter. It is chain-driven from the

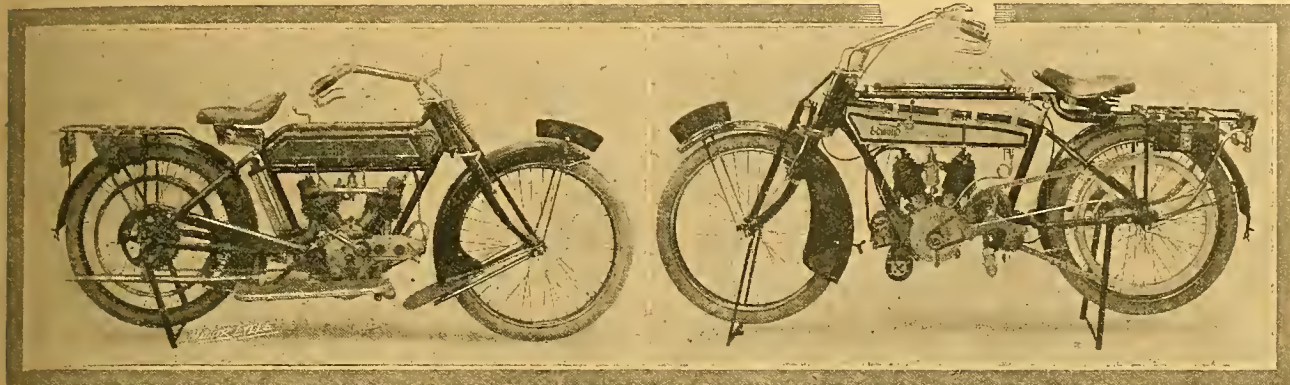


**The Olympia Show.—**

engine-shaft, a simple chain adjustment being fitted. On the outside of the gear shell is a large adjustable pulley from which the drive is taken to the rear wheel by belt. Another model is shown

stroke of 70 x 76 mm. In other respects these models are similar throughout, the frame of the 2½ h.p. being constructed specially light. A neat sidecar is shown, having an outside bearing for the wheel, and a particularly good mudguard, which

front wheel stand is fitted, and the front mudguard has mud flaps extending for its full length; it is also fitted with a splash guard of large dimensions at its lower end. The rear mudguard also has side flaps, which extend from the seat



3 h.p. two-speed Enfield, with new design engine.

Edmund spring-frame mount, with Albion revolving counter-shaft gear.

similar in all respects, with the exception of the engine, which is a 3½ h.p. twin-cylinder, having a bore and stroke of 60 x 76 mm.

**ELSWICK, No. 84.**

3½ h.p. MODEL (single-cylinder): 85 x 88 mm.; side by side valves; B. and B. carburetter; belt; Armstrong three-speed gear.

ELSWICK MFG. Co., Barton-on-Humber. —This machine follows standard lines throughout. It is fitted with a dropped tube frame and a tank of large capacity. The filler caps are of the snap type, and have gauze strainers inside. Lubrication is by semi-automatic sight feed lubricator. The front mudguard is fitted with side extensions. The rear guard has wide extension pieces covering the belt and brake rims. A front wheel stand is fitted and the rear brake shoe is compensated so that it grips with its entire surface at once. Pannier toolbags are protected on three sides by steel covers. All models are finished in a neat shade of green with black and gold lines. The machine has a pleasing appearance, and is fitted with a guard enclosing the front end of the belt and driving pulley.

The 4½ h.p. has a bore and stroke of 89 x 95 mm., and the 2½ h.p. a bore and

has deep side flaps on each side and a tubular luggage carrier behind.

**ENFIELD, No. 101.**

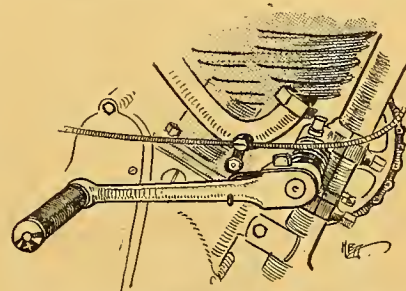
6 h.p. MODEL (twin-cylinder): 76 x 85 mm.; side by side valves; Amac carburetter; chain; Enfield counter-shaft two-speed gear.

THE ENFIELD CYCLE CO., LTD., Redditch, Worcestershire. —The 6 h.p. Enfield remains practically unaltered. The well-known and reliable Enfield two-speed gear is retained.

The tank is of unusual capacity, and the lubrication is by sight feed drip, an auxiliary hand pump being fitted. The control for the change-speed is by handle placed on the tank. Long footboards are fitted, and the brake pedal is in a convenient position; it acts on a dummy belt rim, the shoe and actuating mechanism being particularly powerful.

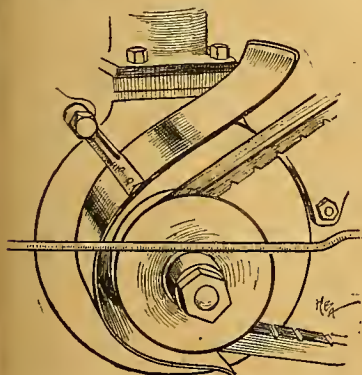
The engine is started by means of a handle-starting device fitted on the seat tube. A large silencer is placed underneath the footboard which has a pipe reaching to the back of the rear wheel. A

stays to the back stays. The carrier is particularly strong, and may be detached with the rear portion of the mudguard to facilitate tyre repairs. The pannier

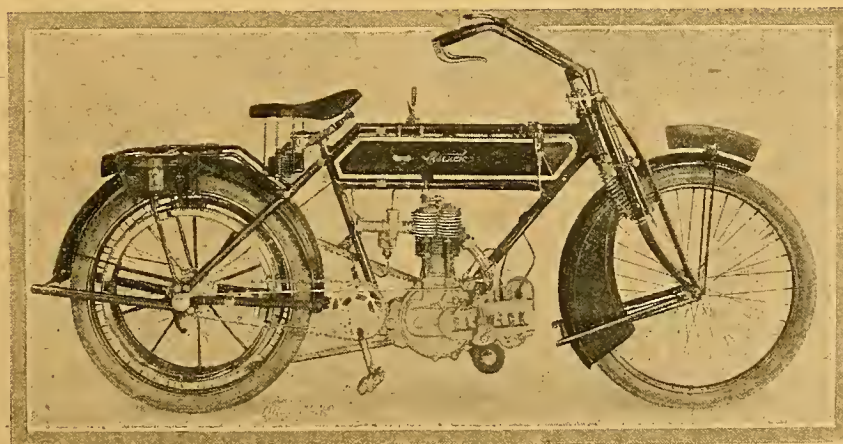


Foot starter mechanism of the Enfield lightweight.

toolbags are protected from mud by steel sheaths. The Enfield sidecar and attachment are essentially the same as before, but a strong luggage carrier has been fitted. Points worthy of special observation on the Enfields are the sidecar frame and springing.



Simple but efficient belt guard on the Elswick



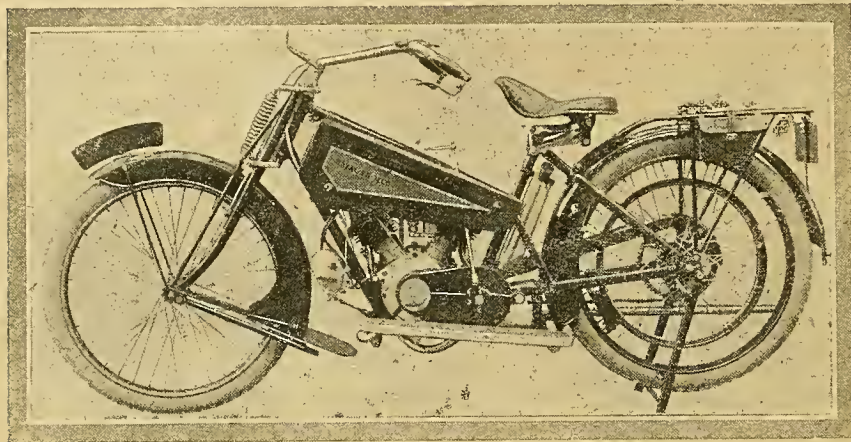
3½ h.p. Elswick, fitted with Armstrong three-speed gear and B. & B. single lever carburetter.



**The Olympia Show.—**

3 h.p. MODEL (twin-cylinder): 60 x 75 mm.; overhead inlet valves; Amac carburetter; chain; Enfield two-speed.

The 3 h.p. is a new model, and was described in a recent issue of this journal. The engine is a striking piece of work. The method of attaching the cylinders



New model open frame Enfield with 3 h.p. twin-cylinder engine.

is unusual, and it is only necessary to undo three nuts, when both cylinders can be removed. This is effected by three small clamps, which grip a flange on the base of the cylinder. A neat kick-starter is attached to the 2 to 1 gear. A mechanical oil pump is fitted on the timing gear side. This forces oil through the crank pin and big ends, whence it is splashed to the pistons and remaining bearings. A large glass oil reservoir, through which the oil is pumped, is fitted behind the seat-pillar. As in the case of the 6 h.p. model, the front chains are entirely enclosed, and the rear chain is protected on the upper side. Footboards are fitted, and the Enfield V. handle-bars with controls brazed on, which have become a feature of these machines.

This model is also shown constructed as a lady's machine, with a sloping front bar. The petrol tank is provided with a large glass topped filler cap, which acts also as a petrol gauge. Simple and neat dressguards are fitted round the tank, extending below it. These are hinged to the upper edge of the tank and held in position by simple clips. Thus the engine is readily accessible, although the shields afford ample protection for a lady's skirt.

2½ h.p. MODEL (twin-cylinder): 54 x 75 mm.; side by side valves; Amac carburetter; chain: Enfield two-speed

The 2½ h.p. Enfield is too well known to require lengthy description, and has undergone no important alterations with the exception of the fitting of a kick-starter. This is carried on the front down tube and connected to the crankshaft by means of a chain. The Enfield "cush" drive is fitted to all models; this consists of a drum divided into three compartments, in which lie six rubber blocks; between each pair of blocks is a flange attached to a plate on which is carried the driven sprocket. All the Enfields are beautifully finished.

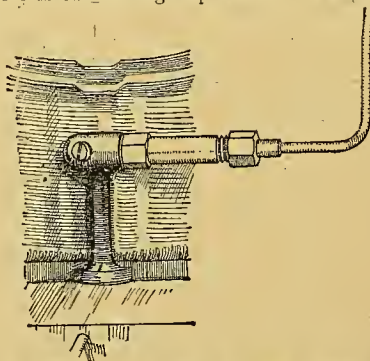
**EXCELSIOR, No. 98.**

4½ h.p. MODEL (single-cylinder): 86 x 112 mm.; side by side valves; Binks automatic carburetter; G.H. two-speed or S.A. three-speed; belt or chain.

BAYLISS, THOMAS, AND CO., LTD., Coventry.—The 4½ h.p. model is chiefly made for sidecar work. The engine, except

for its bore and stroke, is typical of all the firm's productions, and consequently a description of this one model will suffice. The chief improvements on the Excelsior are re-designed timing gear, which runs on ball bearings, and a particularly neat and simple decompressor, which was described and illustrated in our issue of the 21st, page 1336.

Adjustable valve stems are fitted instead of adjustable tappets. The magneto is carried high up behind the engine.



Excelsior oiling system, which feeds the gudgeon pin at the bottom of the stroke, the surplus oil being conducted to the main bearing.

The frame has a dropped top tube, and there are side extensions to the front mudguard and a particularly wide rear mudguard, the rear portion of which is detachable. The silencer has been considerably increased in size. Its construction is unusual, in that the tubular portion is carried in the engine plates and extends on each side, this forming a neat unit. Druid spring forks are fitted, and a metal protected toolbag which lies flush with the rear of the carrier.

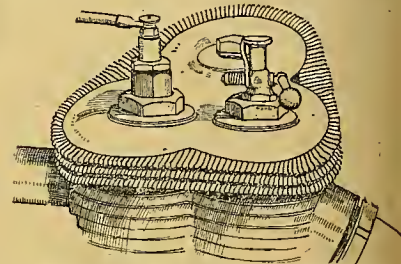
The control for the Sturmey-Archer gear is brazed to the top tube, and if the G.H. gear be fitted, both chains are neatly protected from mud. The gear

box is bolted to the bottom bracket, and slides to adjust the chains. The tank has rounded edges, and is supported by lugs from underneath. Lubrication is by semi-automatic drip, and a petrol filter is combined with the petrol tap.

The 5-6 h.p. model is similar to this in all respects, but the engine has bore and stroke of 96 x 112 mm., and the Armstrong Mark VI. gear replaces the Sturmey-Archer; 2½ in. tyres are fitted to both these models.

The 3½ h.p. engine has a bore and stroke of 80 x 88 mm., and can be supplied with Sturmey-Archer three-speed, Villiers free engine, or fixed gear. All models are fitted with Coolguard trouser protectors, which consist of a coil spring extending round the cylinder radiating ribs.

As a striking contrast to the Excelsior's new models, an old machine built by the company in 1902 is exhibited. It is fitted with a 24 in. frame, 28 x 2 wheels, and 2½ h.p. M.M.C. engine. This was, of course, fitted with rigid forks, atmospheric valves, surface carburetter, and coil and accumulator ignition.



Wire coils are arranged around the cylinder head of the big single-cylinder Excelsior.

The lubrication of the Excelsior is somewhat unusual, and it has been slightly altered for 1913. Oil is led to a lug cast between the valves of the cylinder, whence a hole is drilled into the cylinder on a level with the gudgeon pin when at the bottom of its stroke. Thus oil reaches the small end bearing through the hollow gudgeon pin, but the lug is also drilled down to the crankshaft bearing, from which it is led by ducts to all the main bearings.

**F.N., No. 19.**

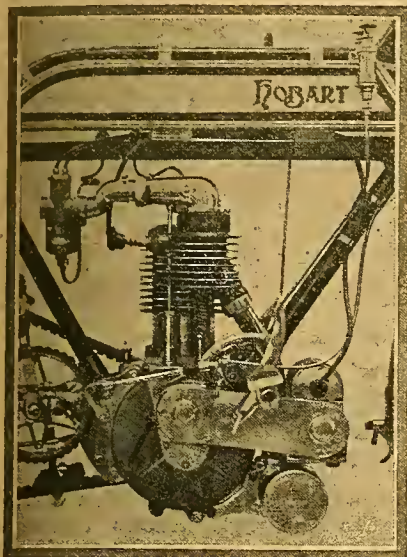
5 h.p. MODEL: Four cylinders, 52½ x 57 mm.; automatic inlet, over exhaust; F.N. automatic carburetter; shaft drive; F.N. two-speed gear.

F.N. (ENGLAND), LTD., Great Portland Street, W.—Ten examples of the F.N. are exhibited, two of them nickel-plated all over. Several alterations have been made in the new four-cylinder model, and the lines of the machine have been somewhat altered so that they should conform with the English ideas of a standard machine. The engine remains practically unaltered, except for the strengthening of certain reciprocating parts. Two plates have been added to the clutch, and a kick starter is now fitted. A neat two-speed gear is incorporated in the casing of the shaft drive. This gear is of the sliding type. The high gear is direct, and is engaged by a sliding dog; the low gear is engaged by a sliding gear wheel. The shafts run on adjustable ball bearings, and the portion



**The Olympia Show.—**

on which the dog slides is castellated. The gear casing is of cast steel, and has an inspection door. The frame is somewhat lower, and has a dropped top tube, giving a saddle position nearly four inches



New .A.P. 3 1/2 h.p. engine with overhead inlet valve on a Hobart.

lower than in previous models. A front wheel stand has been added, and the carrier and part of the rear mudguard are detachable to facilitate tyre repairs. Pannier toolbags are now fitted. The tank is shallower but wider, and holds 1 1/2 gallons of petrol and nearly half a gallon of oil. It now has an enamel finish instead of the oxidised finish so well known on these machines. Large glass-topped filler caps are used; a strainer is placed inside each filler cap, and, in addition, a filter is fitted between the tank and the petrol pipe. Lubrication is arranged on the sight feed drip plan; once the adjustment has been set it is only necessary to pull up the pump handle and the feed is automatic. A gear and shaft drive cut in section demonstrates the extreme simplicity of the gear. The carburetter is of the semi-automatic type. An extra air valve of novel design with a delicate action is situated over the jet and controlled by a handle-bar lever.

2 1/2 h.p. MODEL: Single-cylinder, 65 x 85 mm.; m.o.v. side by side; F.N. automatic carburetter; shaft drive; F.N. two-speed gear.

This model remains unaltered except for the finish, the tank being now enamelled and plated rims being fitted. Side exten-

sions are now fitted to the mudguards, and the saddle position is very low.

The ten motor cycles shown comprise a 2 1/2 h.p. and 5 h.p. in section, a 2 1/2 h.p. and 5 h.p. finished in French grey, a 2 1/2 h.p. and 5 h.p. plated all over, a 2 1/2 h.p. and 5 h.p. finished in black with gold lines, and two 5 h.p.'s fitted with somewhat novel sidecars.

**FORWARD, No. 26.**

M. G. VARLEY, Sparkbrook, Birmingham.—Eight different models of the Forward sidecar. The latest pattern is provided with a step at the side, and an apron of Cape cart hood material, which is fastened by means of spring fasteners.

Another model has a special frame made to support a suit case behind, and at the side of this there is a subsidiary frame carrying a specially constructed spare petrol can. On the luggage grid there are springs to prevent the box from rattling. A further model is provided with an efficient double folding wind screen, whilst the type illustrated on page 1316 of our issue of November 14th is also exhibited. Yet another model is provided with a screen and hood.

**GLORIA, No. 76.**

GLORIA CYCLE CO., LTD., Coventry.—The centre of attraction is undoubtedly the Projectile sidecar, which was recently described and illustrated in our columns. This is specially built for use with high-

other models of more conventional design with special extension at the back to carry a touring bag and petrol can.

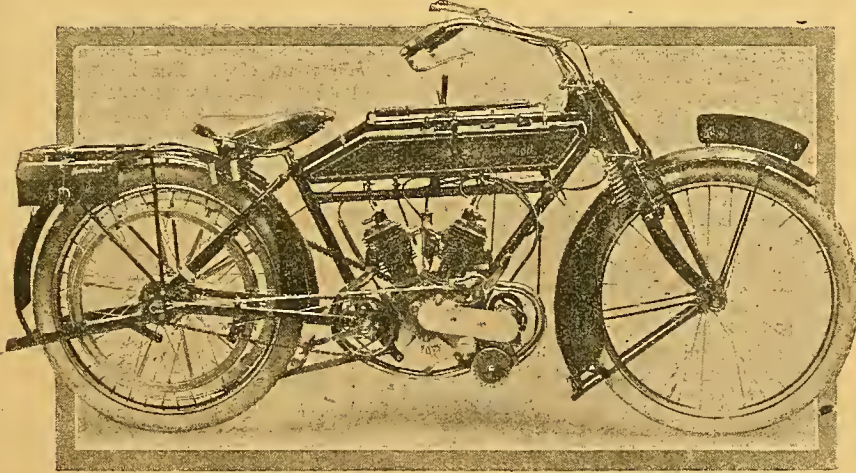
**GRANDEX, No. 107.**

GRANDEX MOTOR CYCLES, Gray's Inn Road, W.C.—The chief models for 1913 made by this firm are a 5-6 h.p. twin for sidecar work, a 4 1/2 h.p. single-cylinder for sidecar work, and a 3 3/4 h.p. Tourist model, all of which are fitted with Sturmey-Archer three-speed gears. In addition to these there are the 3 3/4 h.p. and 2 3/4 h.p. T.T. single-gear models and the 2 3/4 h.p. competition model and a 2 1/2 h.p. lightweight. All of these machines are fitted with Precision engines, Best and Lloyd lubricators, and the same double dropped frame which was introduced at the end of last year. The carrier is slightly altered, being made rather more strongly and attached to the rear mudguard, and Saxon forks are used on all models. The magneto is handle-bar controlled, and the latest pattern automatic Brown and Barlow carburetter is fitted.

**HAZLEWOOD, No. 54.**

5 h.p. MODEL: 70x76; side by side m.o.v.; B. and B. carburetter; chain and belt; three-speed Armstrong gear.

HAZLEWOODS, LTD., Coventry.—The twin Hazlewood is quite a new model, and is an extremely interesting and well-



3 h.p. three-speed twin-cylinder Hazlewood.

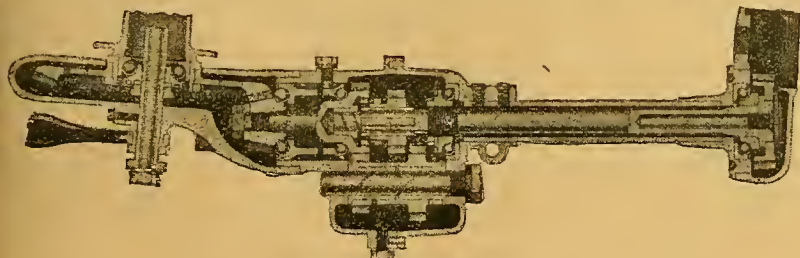
powered machines and is luxuriously fitted. It has a parcel-carrying receptacle in the back, and a spare tyre carrier and cover. The extreme front of the body is carried on a helical spring.

The Gloria spring wheel remains practically as heretofore. There are several

designed machine. Its most notable feature is the fact that an Armstrong three-speed hub is mounted so as to form a counter-shaft which is driven by chain, the latter being entirely enclosed in an aluminium case. The final transmission is by belt. The usual method of operating the Armstrong gear is employed.

The foot brake operates a fibre block through a rocking shaft and takes effect upon the outside circumference of the brake rim. Both cylinders discharge into a single silencer, which is immediately underneath and forward of the crank chamber. Above this is the magneto, which is driven by chain. A similar model to the above is shown with three-speed Armstrong gear in the hub.

The now well-known 2 3/4 h.p. 70 x 76 machine is also fitted with Armstrong hub gear.



Plan section of F.N. transmission.

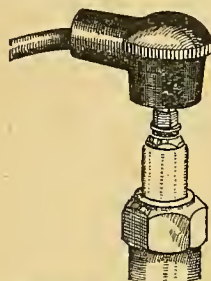


## The Olympia Show.—

**HOBART, No. 77.**

2½ h.p. T.T. Model: 65 × 100 mm.; overhead m.o.i.v.; Bosch magneto; B. and B. carburetter; belt; Hutchinson tyres.

HOBART BIRD AND CO., LTD., Coventry.—The 2½ h.p. T.T. machine is quite a new model. The engine is fitted with very accessible overhead valves having



Waterproof plug terminal adopted on all Hobart machines.

adjustable tappet rods and very strong rockers. The tank is of the torpedo shape, and lubrication by automatic drip-feed. This machine is said to be capable of 50 m.p.h.

The popular ladies' model 2½ h.p. has a new frame in which the engine is fitted vertically instead of being inclined as before. The

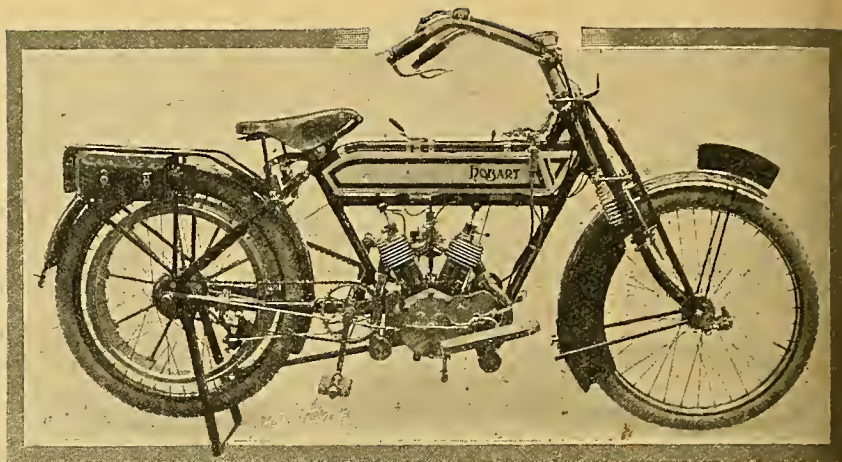
engine is improved in detail and is slightly larger (300 c.c.) than before (292 c.c.). The three-speed is a Sturmey-Archer. All controls, including the magneto (an enclosed Bosch), are on the handle-bar.

3½ h.p. Model: J.A.P., 85.5 × 85 mm.; overhead valve; Bosch magneto; B. and B. carburetter; belt; Hutchinson tyres.

The motive power of the 3½ h.p. model is an improved J.A.P. engine with overhead inlet valve. The Villiers F.E. hub is standard on this machine. A front wheel stand is fitted, and the carrier is provided with pannier plates to carry the toolbags. Large glass-topped filler caps take the place of gauges. By loosening two screws the back mudguard can be turned back to facilitate tyre repairs.

4 h.p. Model: Twin Hobart engine, 68 × 76 mm.; Bosch magneto; B. and B. carburetter; belt; Hutchinson tyres.

The sidecar machine, a 4 h.p. twin, has been brought quite up-to-date and the size of the valves and exhaust pipes increased. The fittings are the same as in the other models. An Armstrong sidecar gear is standard (this gear starts with the back wheel on the ground). The petrol consumption is said to be quite moderate.



A neat looking twin-cylinder lightweight Hobart with hub three-speed gear.

**HUMBER, No. 52.**

3½ h.p. Model: 84 × 90 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Sturmey-Archer or Armstrong three-speed gear.

HUMBER, LTD., Coventry.—Several improvements have been made to the 3½ Humber. In the type which is designed for sidecar work, and which is shown attached to the latest Humber coach-built sidecar, a simple and strong form of kick-starter is employed, consisting of a chain sprocket with a single crank mounted upon a bracket brazed on to the off side chain stay. The bracket which supports the spindle also serves to carry the fulcrum of a very large and well-designed fibre foot brake.

A special mudguard forming a side extension to the rear guard is fitted to protect the belt. A very sensible-sized silencer is now used, and is placed forward of the engine, having a plain outlet pipe extending rearwards behind the bottom bracket. All the 3½ h.p. models are furnished with a crossbar for accessories between the grips of the handle-bars. In addition to the above, the 3½ h.p. model is exhibited with a fixed gear and also with a Villiers clutch hub.

2¾ h.p. Model: 60 × 60 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Armstrong three-speed gear.

The improvements which have been made in this machine are similar to those which have been outlined above and in

previous issues regarding the 3½ h.p. model. This machine is shown in T.T. form, as well as with fixed and three-speed gears.

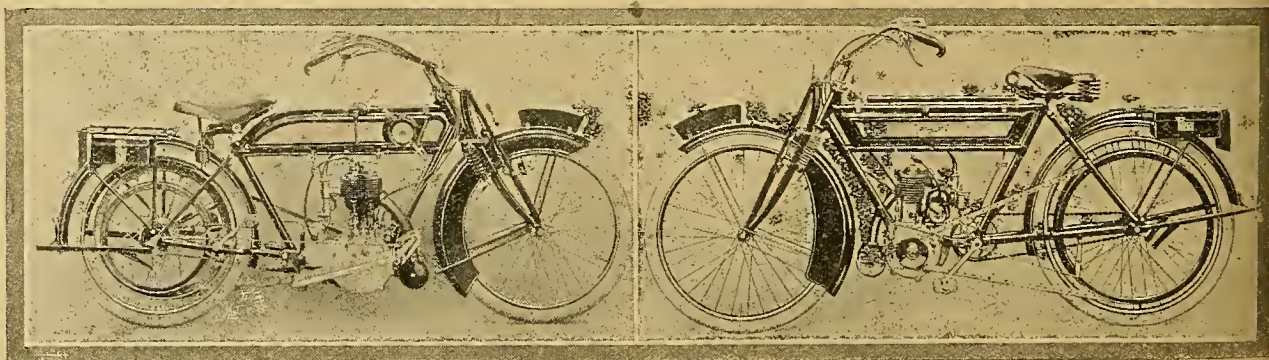
2 h.p. Model: 60 × 70 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Armstrong three-speed gear.

The lightweight remains unchanged for next year. Its features are already well known. The cylinders in this and all other Humber motor bicycles are considerably off set.

**INDIAN, No. 108.**

3½ and 7 h.p. Models: 82½ × 93 mm.; m.o. inlet over exhaust; Indian carburetter; chain transmission; counter-shaft two-speed gear.

THE HENDEE MFG. CO., Great Portland Street, W.—The new Indian design in which the back part of the frame is spring-supported has already been dealt with in *The Motor Cycle*, but one of these machines fitted with a sidecar exemplified in an extraordinary manner how the provision was made for the play of the back springs when attaching the sidecar. In this an attachment coming from close to the seat-pillar was provided with a hinged joint. Apart from the new spring-hung models, the most striking machine is the Tourist Trophy Indian, distinguished by its short wheelbase and the rakish appearance of its steering head. In all the machines Indian practice is followed throughout; that is to say, the engine is supported on a curved bottom



Valve side of the 3½ h.p. three-speed Humber.

2 h.p. Humber lightweight model.



**The Olympia Show.—**

tube, cylinders are constructed with detachable combustion heads, and an overhead rocker-operated inlet valve. Perhaps most important of all, lubrication is fed to the engine mechanically by a geared down force pump. In the new engines, too, roller bearings are used on the big ends, and the gear-driven magneto is of the waterproof pattern. The transmission to the two-speed countershaft is, as before, by chain, and thence through a plate clutch. The Indian transmission has been carefully studied, and is very soft in action. The movement of the laminated spring at the front is transmitted to the front wheel by forks joining on to one arm of a bell crank lever pivoted on the axle spindle, and supporting on the end of its other arm the trussed forks. The handle-bars are designed so as to allow the articulated throttle and exhaust valve control to be brought to their work in a straighter line than of yore, and thus put less severe work on the joints. Of course, the machines, which are all finished in Indian red, make a very striking exhibit.

**IVY, No. 16.**

2½ h.p. T.T. MODEL: 70 × 90 mm.; side by side m.o.i.v.; Amac carburetter; belt.

S. A. NEWMAN, Lichfield Road, Birmingham.—The 2½ T.T. model is fitted with a Precision engine, provided with an extra large exhaust valve, and is the same as that used by H. C. Newman in the Junior Tourist Trophy Race last July. It is provided with a forced induction device, consisting of a pipe running from the crank case to the jet, the theory being that the descending piston sends a column of warm air up the jet, forcing the petrol with it. This device is also fitted to the 3½ T.T.

2½ h.p. MODEL: 70 × 75 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Brampton variable gear.

The 2½ h.p. model is fitted with a smaller Precision engine, but has a Brampton variable gear.

3½ h.p. MODEL: 85 × 88 mm.; side by side m.o.i.v.; Amac carburetter; belt; B.S.A. two-speed gear.

The 3½ h.p. T.T. model is similar in most points to the other machines mentioned, except that a Best and Lloyd lubricator is fitted instead of the ordinary pump.

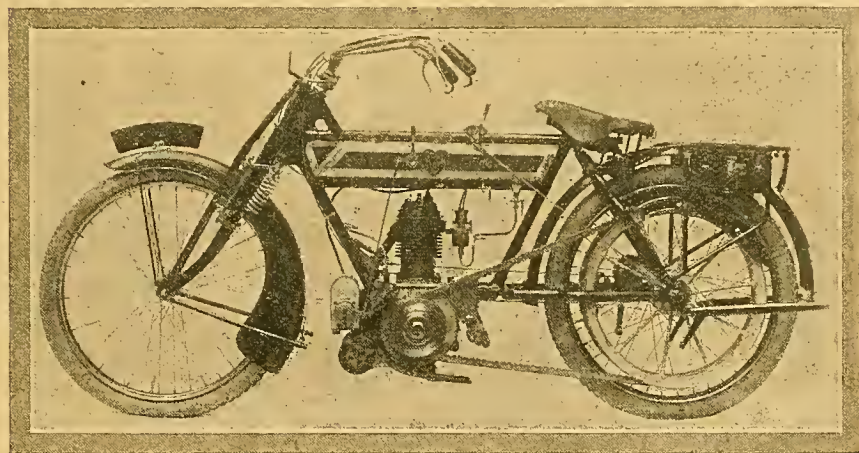
The lady's model is quite an interesting machine. It is of 3½ h.p., with Sturmey-Archer three-speed hub and a kick-starter device. The top tube of the dropped frame is in duplicate, and encircles the tank, which is bolted to it. Efficient shields protect the lady's dress.

in a separate frame provided with ordinary fork ends which render the wheel interchangeable with the front wheel of the motor bicycle.

**JAMES, No. 65.**

3½ h.p. MODEL: 86 × 96 mm.; S.S.; B. and B. carburetter; James three-speed in counter-shaft; chain.

THE JAMES CYCLE CO., Greet, Birmingham.—These machines all have the same



1913 3½ h.p. twin three-speed Trump-Jap.

Comfortable footboards are fitted. The lubrication is by drip feed pump, and a comfortable saddle is provided.

The 3½ h.p. touring model has wide handle-bars and comfortable saddle, B. and B. carburetter, and B.S.A. two-speed gear, while the mudguarding is good, and it is a thoroughly serviceable machine. The water-cooled T.T. model, with Green Precision engine (same dimensions as above), is another mount which attracts attention.

4½ h.p. MODEL: 90 × 96 mm.; side by side m.o.i.v.; Amac carburetter; belt; Sturmey-Archer gear.

The sidecar model has an Ivy make sidecar with coach-built body hung inside a rectangular frame, and is supported on four coil springs. The wheel is carried

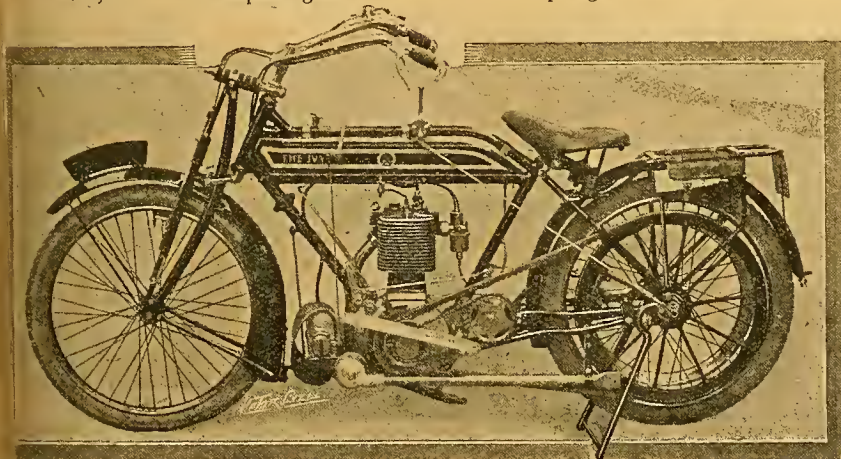
sized engine, but are turned out in a variety of forms.

The three-speed model is most interesting, and this we recently described and illustrated. The gear is in the counter-shaft, and is worked by sliding a toothed wheel which has dog clutches on either side.

For high and low gears the dog clutches come into engagement and the wheel itself for the middle gear. Combined with this is a very effective multiple plate clutch. The back brake is of the internal expanding type. The footboards are supported by springs at the rearward end. The engine is fitted with a decompressor operated by a Bowden wire on the handlebar. Another lever controls the magneto. The silencer has an extension pipe running to the rear and has no cut-out. The tank is made in one piece, supported on brackets from below. The filler caps are on the right-hand side—a great convenience when a sidecar is attached to the left.

Lugs for attaching the sidecar are permanently brazed to the frame. The standard sidecar is the James-Canoelet. This has three-point attachment, and underneath is fitted a large silencer connected with the expansion chamber on the machine by a flexible pipe. Other models are fitted with the James two-speed gear, the Sturmey-Archer three-speed hub, and the Villiers free engine. The mudguards are provided with side flaps of suitable dimensions.

One point about the kick starter is worthy of mention; the first tooth is made movable, so that it is impossible for the teeth to meet end to end as the movable tooth slips to one side and the drive is taken up smoothly. Another important item is that the kick-starter gear is entirely enclosed in the gear box casting and thus protected from mud.



Ivy-Precision three-speed machine for 1913.

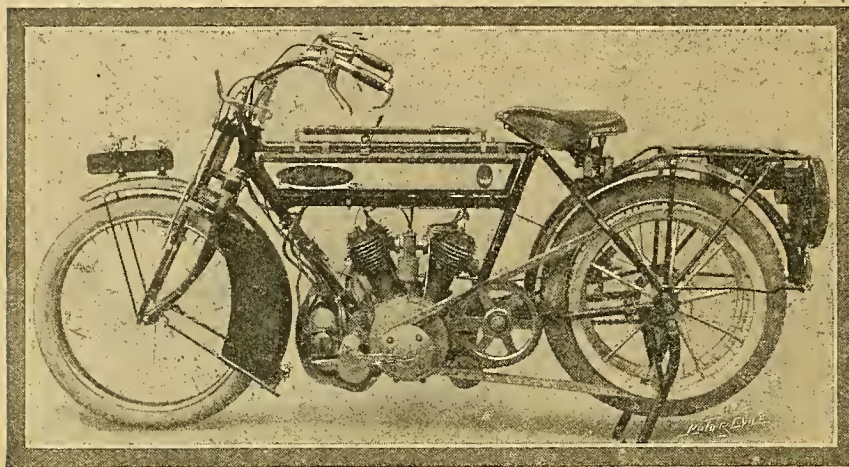


## The Olympia Show.—

**KERRY-ABINGDON, No. 58.**

3½ h.p. MODEL: 85 × 88 mm.; side by side m.o.i.v.; B. and B. carburetter; chain and belt; two-speed gear.

THE EAST LONDON RUBBER CO., Great Eastern Street, E.C.—The most pro-



Twin-cylinder Kerry-Abingdon with chain and belt drive two-speed gear.

minent feature on this machine is the two-speed gear, which is arranged so that a belt transmits the power on the high ratio and a chain on the low. In both cases the transmission is direct. The belt pulley and a small chain sprocket are connected to the engine-shaft by means of an enclosed leather faced clutch, which is worked from the left handle-bar grip. This clutch therefore applies to both high and low gears. Behind the bottom bracket a chain countershaft is arranged, with its driving sprocket on the side of the machine opposite to the driven one. The belt rim and the final drive sprocket are therefore on opposite sides of the back hub. The change of gear is effected in the hub by a clutch device worked by a small lever on the side of the petrol tank, which connects either of the two drives. When the top gear is in operation the low gear chains run idly, and *vice versa*. The front forks are of the Kerry type with enclosed springs.

A case with a quick detachable lid for spare belt or inner tube is fixed at the back of the carrier, at each side of which is a pannier toolbag of good size. The 3½ h.p. machine is also shown with a single gear.

6 h.p. MODEL: Side by side m.o.i.v.; B. and B. carburetter; chain and belt; two-speed gear.

This model is shown attached to a sidecar, and has exactly the same form of transmission system as that adopted in the one previously described. The sidecar is of pleasing shape, and special attention has been paid to luggage and tool-carrying capacity, there being a deep pocket behind the back of the seat and a cupboard underneath it. The twin engine has separate silencers, both of which are fitted with cut-outs. In all models a front wheel stand is fitted, which also acts as a mudguard stay.

**KYNOCH, No. 44.**

4 h.p. MODEL: 85½ × 85 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; three-speed Sturmey-Archer.

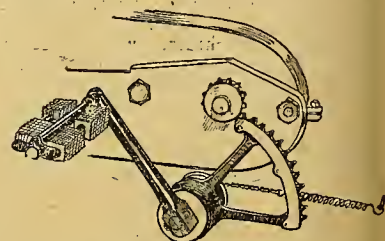
KYNOCH, LTD., Birmingham.—Careful attention to detail and studied construction generally are characteristics of the

A third machine is a 6 h.p. twin Kynoch also fitted with a V-type J.A.P. engine and a three-speed Sturmey-Archer gear. In all the Kynoch models commendable large pannier tool cases are fitted to the side of the carrier. Automatic drip-feed lubrication is provided.

**LEA-FRANCIS, No. 73.**

3½ h.p. MODEL: Two cylinders, 60 × 70 mm.; side by side m.o.i.v. Amac automatic carburetter; Lea Francis two-speed gear; chain.

LEA-FRANCIS, LTD., Coventry.—This machine is a new-comer to Olympia, but its appearance is attracting considerable attention, the model finished throughout in what is known as beech colour being especially distinctive. For a new make we have seldom seen a machine in which detail has been so carefully studied before production, and the name of Lea Francis in the push cycle world is sufficient guarantee of excellence of work-

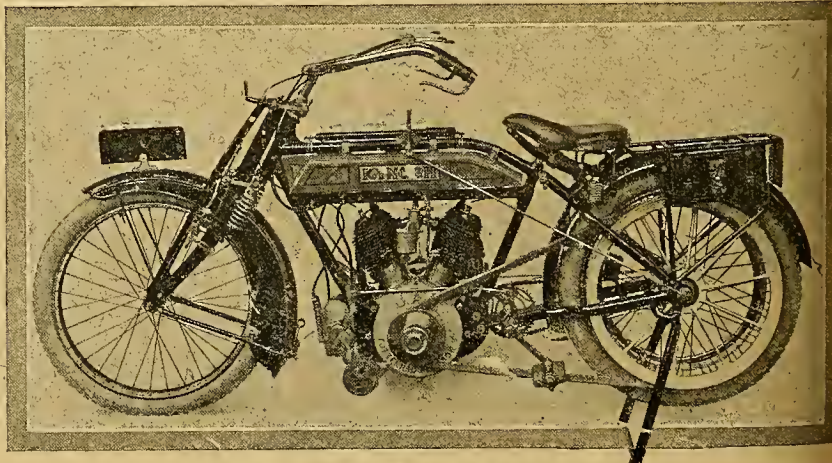


Lea-Francis kick-starter quadrant.

Kynoch machines. Amongst several notable features may be mentioned the fact that a special bracket for supporting the quadrant and lever of the gear control is brazed to the top tube and forms a very neat fitting. The engine is a J.A.P., and has the magneto set forward of the crank case immediately over a large aluminium silencer. The latter is furnished with a foot-operated cut-out. Pedalling gear is provided, and there are also a pair of rubber-covered footrests, and these are adjustable both as to height and fore and aft positions. Druid spring forks are used, and the lower stay of the front mudguard serves as a front wheel stand. A similar model to the above, but without the three-speed gear, is also shown.

6 h.p. MODEL (V. twin): 75 × 75 mm.; mechanical side by side; B. and B. carburetter; belt; Sturmey-Archer.

manship. All the small fittings, such as the nuts, brake levers, mudguard stays etc., are finished with a black non-rustable finish, which from a weather-proof point of view has a great advantage over nickel plating. The only portions which are nickel-plated are those which are the least likely to rust. One of the most striking features is the chain guarding, which is particularly well carried out. It is claimed that these guards are grease-proof and do not rattle, and they have been so arranged that they do not detract from the appearance of the machine. The front chain case serves also for a cover to the magneto chain, which is driven from the crankshaft, the magneto lying behind the crank case. The two-speed gear is of the sliding type, and is



Now 6 h.p. twin-cylinder Kynoch with Sturmey-Archer gear.



**The Olympia Show.—**

mounted eccentrically in a special bottom bracket casting in such a manner that the chains can be adjusted without interfering with the adjustment of the kick starter or gear operation. Mudguarding has received special attention, with the result that the machine is one of the best protected mounts in the Show. Long footboards are fitted, between which lies a large double silencer. The rear wheel is of the quickly detachable type, it being only necessary to withdraw a single bolt and a small distance piece to remove the wheel complete, but without disturbing the rear sprocket, which remains *in situ*. A feature is that both front and rear brakes are of the internal V type acting on dummy belt rims, and are so arranged that they do not interfere with wheel removals. The lines of the frame have been designed to give a harmonious appearance, and every Bowden wire has neat clips cast with the frame lugs to accommodate it. The high-tension wires are carried in metal tubes, which are easily detachable, as they are held to the frame by a neat internal spring clip. The rear portion of the back mudguard is removable, and detail work is extremely good, even the joint pins working on hardened steel bushes. Pannier tool bags are fitted in a specially constructed carrier. A small leather case carrying an inner tube is fitted above the front wheel between the stays of the spring forks, and Brooks's pan-seat is provided. Inside the petrol tank, where it can be easily seen through a large filler cap, is a baffle plate marked alternately black and white, by which the petrol level can be easily judged. Only one type is mar-

is now dropped at the rear, and an automatic lubricator is fitted.

2½ h.p. MODEL (twin): 58 × 66 mm.; two-stroke; Amac carburetter; chain and belt; single-speed gear.

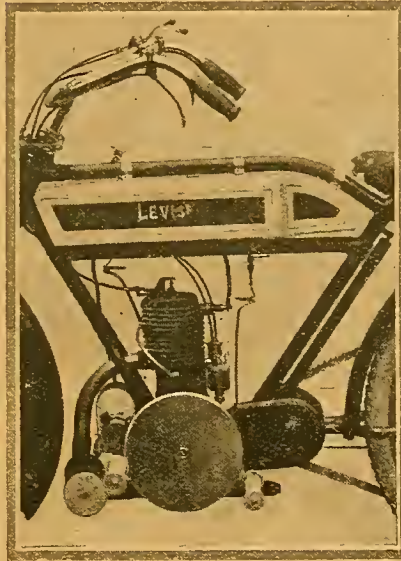
This model is an entirely new one. The cylinders are placed side by side, and the magneto is carried on the rear of

this was thought to be a source of danger should there be any petrol about owing to the tank being overfilled.

**L.M.C., No. 88.**

¾ h.p. MODEL: 85 × 88 mm.; side by side valves; B. and B. or Amac carburetter; belt and chain; L.M.C. two-speed or Anto-varia.

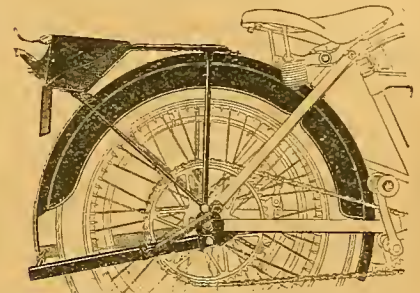
THE LLOYD MANUFACTURING CO., Monument Road, Birmingham.—The



Chain and belt drive on the Levis single-cylinder. (belt on right side of machine).

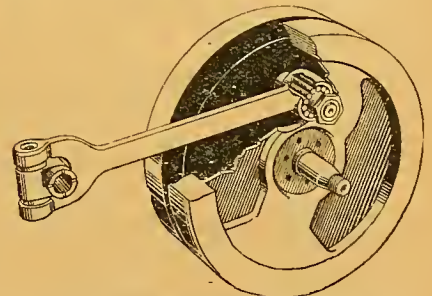
the engine. A drip-feed lubricator is fitted. The same system of lubrication is employed on this model as in all Levis machines. The oil is conducted down the sides of the cylinders to the main bearings, thence through a hollow crankshaft to the big end, afterwards lubricating the cylinders by splash. Oil also flows into the main bearings and to the bearings of the magneto drive.

One and a half gallons of petrol are carried. With a two-stroke two-cylinder engine almost as even running is obtained as with a four-cylinder of the ordinary type. The twin Levis runs with extreme smoothness. The exhaust release situated at the top of the cylinder is now covered in so that no flame can issue therefrom, as



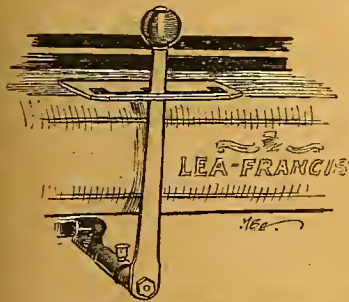
The efficient rear mudguard on the new L.M.C. Note also spring-operated stand and new tool case.

model chosen for description made its first public appearance in the A.C.U. six days' trials, where it gained a gold medal. Most of the features of the L.M.C. are still retained, that is to say, the engine



L.M.C. flywheels and connecting rod showing roller bearing at big end and universal joint at small end.

is unaltered except for adjustable tappets. The silencer lies in front, and the rider's legs are protected from the exhaust gases by a neat cover. Sprung footboards are used, and the principle of the L.M.C. spring fork is retained; this, however, has undergone some im-



Neat ball head change speed lever of the Leà-Francis.

ported, and three specimens of this are on view. We have already dealt with the running of this excellent medium-powered twin, and we have no doubt that before long private owners will be singing its praises.

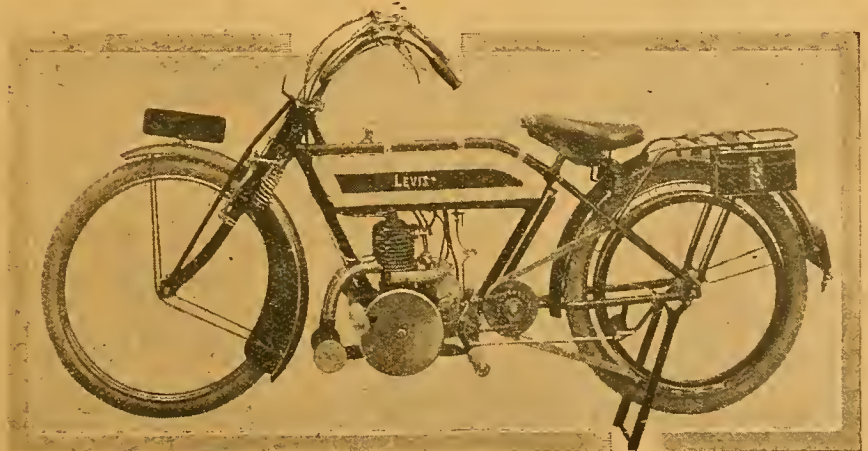
**LEVIS, No. 39.**

2½ h.p. MODEL: 70 × 70 mm.; two-stroke; Amac carburetter; belt; single-speed gear.

MAILERS, LTD., Station Street, Birmingham.—This particular model remains practically unaltered for 1913.

2 h.p. MODEL: 62 × 70 mm.; two-stroke; Amac carburetter; chain and belt; single-speed gear.

This machine is similar in most respects to the above, except that it is provided with a combined belt and chain transmission, the rearward portion of the chain being protected by a case. The top tube



Twin-cylinder (side by side) Levis two stroke, with belt and chain transmission on left of machine.

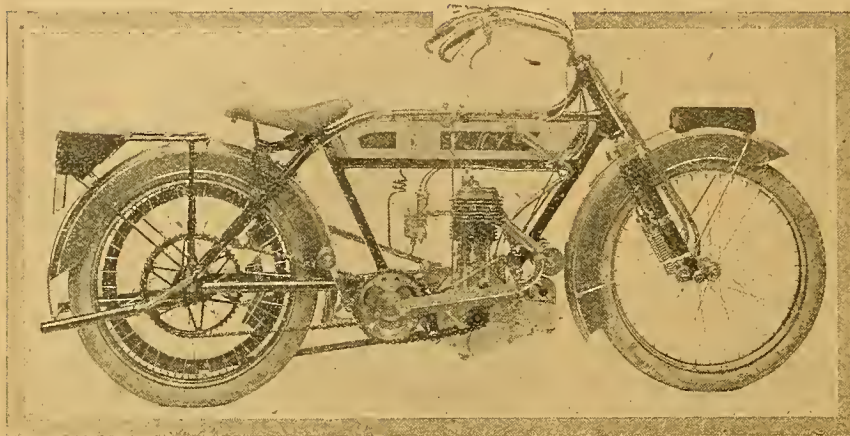


**The Olympia Show.—**

provement. In addition to previous descriptions, one other new feature of the engine consists of a decompressor which is operated by a small lever on the tank. This provides particularly easy starting and slow running. The L.M.C. two-speed

4 h.p. MODEL: 89×92 mm.; side by side valves; B. and B. or Amac carburetter; belt; Sturmey-Archer three-speed or Auto-varia.

This model resembles the 3½ h.p. in nearly all particulars, but a Sturmey-Archer gear is fitted and the well-known



L.M.C. two-speed model, fitted with kick-starter, footboards, and specially efficient mudguards.

gear was described in a recent issue, and it is only necessary to remind our readers that the high gear is by belt direct and the low by chain. The front fork is now fitted with a special spring which takes both thrust and rebound strains, and is pivoted on plain bearings. The mudguarding has received special attention.

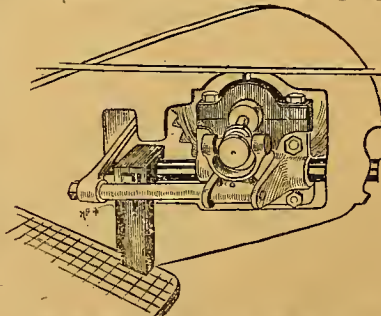
The rear part of the rear guard, together with the carrier, is readily detachable to facilitate tyre repairs. A neat and simple kick-starter is fitted on

L.M.C. footboard starter, by means of which the engine is revolved by depressing the rear end of the footboard. A similar model is shown fitted with the Roc two-speed gear.

**LINCOLN-ELK, No. 121.**

2½ h.p. LIGHTWEIGHT, 3 h.p., 3½ h.p., and 4½ h.p. MODELS: 70×72, 79×82, 85×88, and 89×96 mm.; side by side m.o.v.; B. and B. carburetter; two-speed counter-shaft; belt and chain.

J. KIRBY, Broadgate, Lincoln.—The four models specified above are all single-cylinder machines, the lightweight being the only model to which the two-speed gear, mentioned in our issue of the 21st inst. (page 1329), is not fitted. This counter-shaft is a remarkably compact design; it is driven from the engine by a chain, protected by a neat sheet aluminium cover, and on the high gear

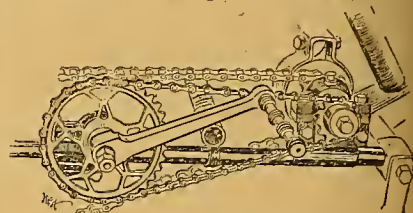


Operating mechanism of the Lincoln Elk counter shaft gear.

drives through a belt on the left side of the chain, on the low gear through a chain on the other side of the wheel. High and low gears are each fitted with a separate clutch, which is simplicity itself, consisting merely of a split bronze ring of good bearing surface, contracted by the operation of a side cam so as to grip tightly and transmit the power. As the diameters of these rings are con-

siderably less than four inches, the clutches are very compact, and the side cams are worked by a single lever carried up the side of the tank.

A feature in the 4½ h.p. model is the stay brought down from a point on the seat-pillar below the tank to the bridge joining the lower back wheel stays. A coachbuilt sidecar is shown in conjunction with the 3½ h.p. Lincoln-Elk, while



Details of the Lincoln Elk kick-starter.

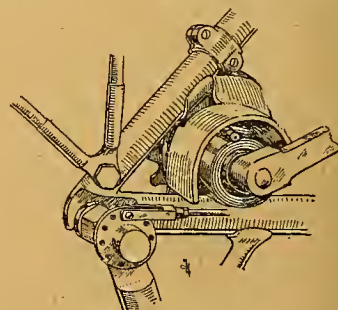
a 4½ h.p. machine is fitted with a new sidecar made by Rey, of Hampstead.

In this model the sidecar wheel is practically given a separate spring suspension, working as it does on the end of a lever pivoted to the sidecar axle and controlled by strong helical springs. The design is quite new, but we have not tried it.

**MATCHLESS, No. 74.**

3½ h.p. MODEL: 70 × 64½ mm.; m.o. valves; Amac carburetter; chain and belt; Armstrong three-speed hub, Mark VI.

H. COLLIER AND SONS, Plumstead.—All the Matchless machines for the ensuing year are fitted with twin engines. This new model is provided with the now popular counter-shaft drive, in which belt and chain are combined.



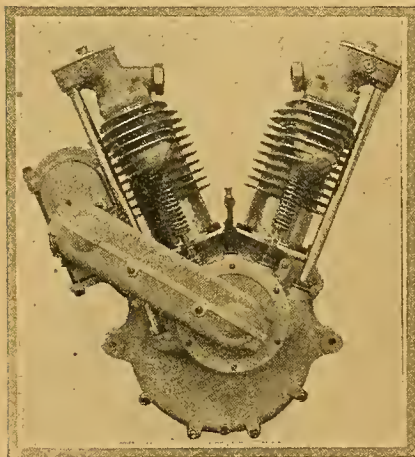
New Hudson clock spring.

6 h.p. MODEL: 76 × 85 mm.; mechanical side by side valves; Amac carburetter; belt; V.S. two-speed hub.

Several of these machines are in evidence, fitted with single and double belt drive. A new feature is the substitution of a foot starter for pedals. This is attached to the bottom stays, and drives by a chain through the free-wheel provided for the pedalling chain.

8 h.p. MODEL: 85 × 85 mm.; mechanical side by side valves; Amac carburetter; belt or chain; V.S. two-speed or Matchless C gear.

The chain-driven model is essentially a machine for passenger work. The Matchless gear on the counter-shaft is operated by dog clutches; the friction clutch is of the metal-to-metal cone type. Several sidecars with Matchless chassis were attached to machines on this stand.

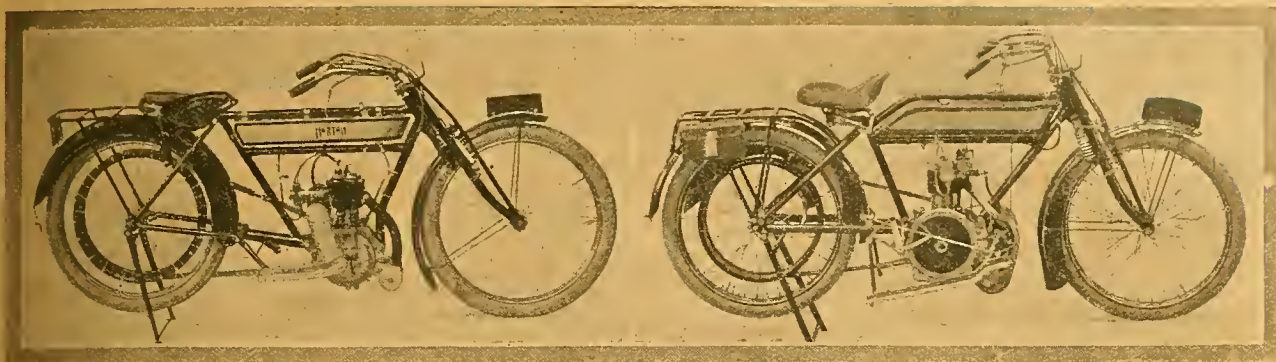


6 h.p. Motosacoche Engine.

a counter-shaft, a pedal being fitted on each side so as to form an additional footrest. The carrier is of unusual shape, and has a sloping rear portion which carries a toolbag of considerable dimensions. This is so arranged that the top of the bag lies flush with the carrier and provides ample luggage accommodation. Both foot and hand brakes act on the rear belt rim, being placed one below and one above the rear chain stay.



## The Olympia Show.—



New 350 cc. lightweight Norton, another late arrival in the Show.

1913 Veloce 2 1/2 h.p. two-speed machine.

**MELEN EXPRESS, No. 57.**

6 h.p. MODEL (twin): 76 × 85 mm.; side by side m.o.i.v.; B. and B. carburetter; Roc two-speed; belt.

F. AND H. MELEN, LTD., Cheapside, Birmingham.—This firm show a very sturdily made sidecar combination in which the motor cycle is upon standard lines with a large petrol tank and a pronouncedly dropped frame. The rider's comfort is provided for by the use of the Melen patent spring handle-bars, which insulate the wrists and arms from road shocks.

A Roc two-speed hub gear is controlled by pedals fitted on the footrests, which are of the plain tubular variety. The engine is standard J.A.P., with a single silencer to both cylinders. The sidecar is made on neat lines with a cane body, in which attention has been paid to luggage carrying. A fourth attachment tube is taken from the top of the head to the sidecar chassis to give extra rigidity.

The attachments are of the positive nut and bolt type. Generally speaking, the combination presents a very agreeable and practical appearance.

**MILLFORD, No. 63.**

MILLS-FULFORD, Coventry.—An excellent display of sidecars of all kinds. The rigid type is most numerous, but there are also examples of spring wheel, castor wheel, and the radial castor. The chassis are practically of two types, the dropped

frame being very popular; this allows a low position for the body, and is very suitable for attachment to modern types of motor bicycle. The frame tubing of this chassis, as well as all other Millfords except the lowest priced model, is duplicated where the rear wheel attachment is fixed. This allows the attachment lug (which is a steel forging) to move backwards and forwards, so providing perfect alignment of the wheels. One rigid wheel model is so constructed that the wheel spindle is supported on both sides. At the same time it can be removed very simply by withdrawing the wheel pin. No less than nine different chassis and twenty-four distinct bodies are supplied by this firm. Two very attractive bodies are those finished in varnished wood and designed on the stream-line principle, the wood used being three-ply. A large parcel post sidecar carrier occupies the centre of the stand. Several of the sidecars are shown attached to motor cycles.

**MONOPOLE, No. 56.**

3 1/2 h.p. MODEL: 85 × 88 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Sturmey-Archer three-speed.

THE MONOPOLE CYCLE AND CARRIAGE CO., LTD., Foleshill, Coventry.—The Monopole machine was described in *The Motor Cycle* of the 21st, page 1335, and it therefore suffices for the moment to say that it is designed upon standard lines and has no particularly outstanding features beyond its obvious good workmanship and sturdiness of construction. Saxon spring forks are used.

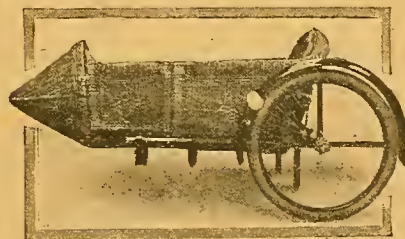
The frame is dropped, and the petrol tank is of exceedingly neat appearance, an automatic drip-feed lubricator being a standard fitting. A pedalling gear is fitted, and special means have been taken to prevent the pedal crankshaft rotating of its own

accord. Sturmey-Archer hub gears are provided with the standard means of operation. A 2 1/2 h.p. machine is shown which is upon exactly similar lines with the exception of the engine dimensions, which are in this case 70 × 76 mm.

**MONTGOMERY, No. 127.**

7 h.p. HENDERSON: 64 × 76 mm.; overhead m.o.i.v.; Schebler carburetter; bevel and chain.

MONTGOMERY AND CO., LTD., Coventry.—In addition to the four-cylinder Henderson, one of the most distinctive exhibits is in the modèle de luxe sidecar,



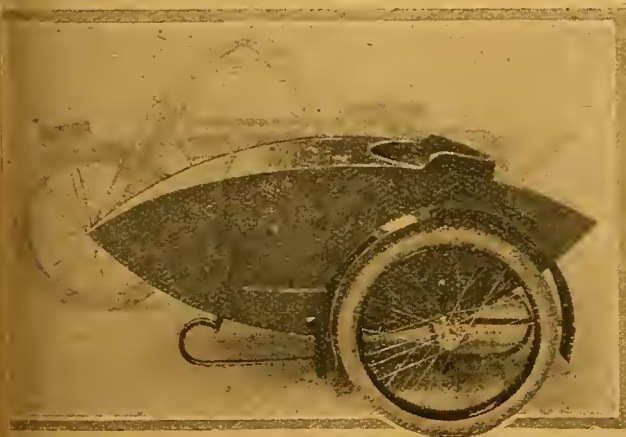
A "Shell" wicker sidecar on the Montgomery stand.

specially designed for these machines. This has a coach-built torpedo fronted body with side doors, wind screen, and is luxuriously upholstered. The front of the chassis is trussed for extra strength, whilst at the rear it is carried well back to accommodate a neat luggage case and extra petrol can. To allow for variety in height and angle of bicycle frames a new fitting has been designed. This device was recently illustrated. To those interested in racing work, the sporting model, with a wicker body shaped like an artillery shell, will appeal.

**MOTO-REVE, No. 117.**

2 h.p. and 4 h.p. MODELS: 62 × 85 and 63 × 80 mm.; m.o. valves; B. and B. carburetter; chain and belt; two-speed counter-shaft and hub.

MOTO-REVE, LTD., Acton Vale, Middlesex.—The exhibits on this stand are of two types, single and twin-cylinders. The latter have overhead valves, adjustable tappets, and chain drive through a two-speed counter-shaft with expanding ring clutch. The front chains are totally and the back semi-enclosed. Both engines are started by handle, which is applied to the counter-shaft.



A Millford sidecar known as the "Streamline." A sidecar on the true streamline principle was suggested in "The Motor Cycle" several months ago.



### The Olympia Show.—

The magneto is carried in front and the carburetter is automatic or hand-controlled as desired. The exhaust is taken from each cylinder by a separate long tube with splayed end carried to the back of the rear wheel.

The convenient long footboards are easily detachable, and on the front wheel the mudguarding is carried complete right through the front forks.

By the loosening of two nuts the back carrier and half the rear mudguard can be swung clear to leave the tyre free for repairs. Oil is fed to the engine by pressure obtained from a pump, and a neat gauge registers the pressure, which can be maintained for considerable periods, the flow of oil being adjustable through a sight-feed needle valve. In all machines an extra long toolbag carried on the tank top and bridging the top tube allows of tools of reasonable length being carried.

The 2 h.p. single-cylinder machine, with two-speed hub gear has been designed for those who want a convenient little mount at a moderate price. The two-speed hub is of the firm's own manufacture, and adds but 5 lbs. extra weight to the machine. In other respects this machine embodies the practice that the Moto-Réve firm have already made well known.

### MOTOSACOCHE, No. 102.

3½ h.p. MODEL (two-cylinder); 64 × 77 mm.; side by side valves; Amac carburetter; chain; two-speed counter-shaft gear.

MOTOSACOCHE, LTD., Holborn Viaduct, E.C.—The most noticeable features of this engine are the horizontal radiating ribs and the position of the valves which are disposed in front of the front cylinder and behind the rear cylinder. The petrol injection taps are fitted to lead the petrol into the cylinder about half-way down. This makes the freeing of the piston a simpler job, and also causes the taps to act as half-compression devices. The tank has a large capacity, and lubrication is carried out simply by hand pump.

The frame has a straight top tube, but is so arranged that it gives a low saddle position. Footboards are fitted, and the counter-shaft chain drive is excellently carried out. Side flaps are fitted to both

front and rear guards. A handle starter is fitted to the counter-shaft. A similar machine to this is exhibited attached to a sidecar, and we are told that it is fully capable of this work.

The 2½ h.p. model resembles the above except for the fact that its twin-cylinder engine has a bore and stroke of 54 × 75 mm., the one alteration in this model consisting of bigger valves.

Besides this, two models of the well-known Motosacoche lightweight are shown. The 2½ h.p. has a single-cylinder engine of 64 × 80 mm. bore and stroke and a variable pulley gear, and the 2 h.p. which is fitted on a lady's dropped frame, has a bore and stroke of 62 × 75 mm. Both these models remain unaltered except for the position of the paraffin injection tap.

A very interesting engine is the 6 h.p. twin, 72 × 91 mm. This is offered to those desirous of building sidecars or cyclecars. The engine was described in our issue of the 21st inst. The castings are extremely well finished throughout, and we are told that this finish is absolutely standard. The timing gear is unusual, one large cam serving to operate both exhaust valves, while a separate one is fitted for each inlet valve.

Another novelty shown on this stand is the De Lissa patent balanced valve, which is shown in section on a 2½ h.p. engine. It will be remembered that this valve has two seatings, one in the upper part of the combustion head, and one in the usual place. This valve, besides increasing the power of the engine, keeps it extraordinarily cool, even under prolonged work. At first sight it would seem that it would be difficult to obtain good compression with two seatings on one valve, but we are assured that this is not the case, and certainly the machine which we were enabled to try a short time ago had most excellent compression.

### NEW COMET, No. 250.

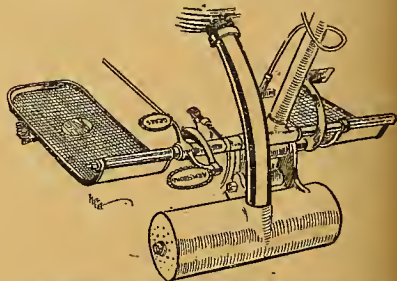
A. H. HADEN, Princip Street, Birmingham.—Among the various sidecar frames on this stand a drop frame called The Dual frame, suitable either for passenger or commercial purposes, demands attention, affording, as it does, a very low position, combined with great strength, while the quick detachable fittings are neat. The drop frames for touring work have also quick detachable fittings.

The most important exhibit, however, is a new registered motor cycle frame, in which the centre rail is replaced by two parallel square section tubes, on which the tank rests, and to which it is held by four bolts. Thus, the tank can be quickly removed, and the space between the two supporting tubes affords ample head room for getting at the engine, with-drawing cylinders, and so forth.

### NEW HUDSON, No. 62.

2½ h.p. MODEL: 70 × 90 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Armstrong gear.

THE NEW HUDSON CYCLE CO., LTD., Summer Hill Street Works, Birmingham.—Special features of the New Hudson engines are the off-setting of the cylinder and the position of the magneto, which is supported on a platform bolted to the crank chamber, which brings it immediately behind the cylinder. It is

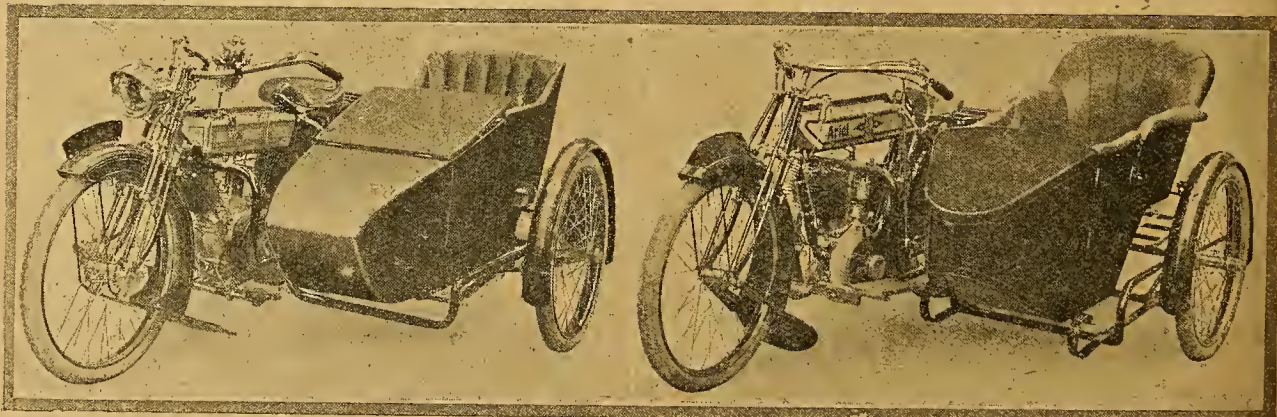


New Hudson silencer with central pipe fitting, also showing foot plates upturned at the front.

exceptionally well protected from mud and wet. The magneto drive is by chain, which is, of course, enclosed in a neat aluminium case.

The clutch control is by means of a double-ended pedal working on the dead centre principle, and placed immediately above the right footboard, whilst the gear control is by an improved quadrant on the side of the petrol tank. The lever is now fitted with a polished vulcanite handle.

The footboards are cast aluminium, and are nicely curved. A kick starter is fitted, and takes the form of a crank carried by a bracket on the right chain stay, which is connected to the hub gear with a chain and sprocket. A clock spring is used to return the crank, and the free-wheel clutch is mounted on the hub.



P. & M. sidecar combination, sold complete.

6 h.p. twin two-speed Ariel sidecar combination.

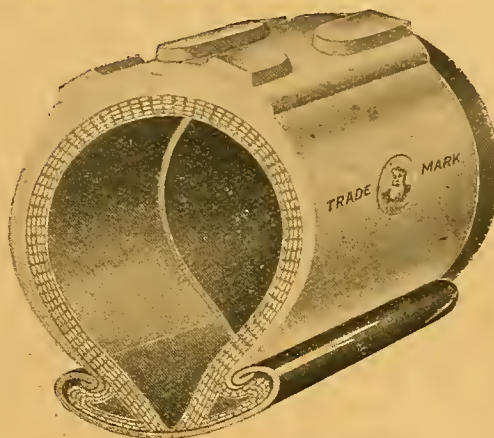


# You are bound to be interested in these:—

## THE NEW DUNLOP "PILLION" TYRE

(as illustrated). 650 × 65 mm.

Specially manufactured for driving wheels of passenger-carrying motor cycles and for cyclecars. A new pattern Dunlop butt-ended tube is now made in six sizes, one suitable for this tyre.

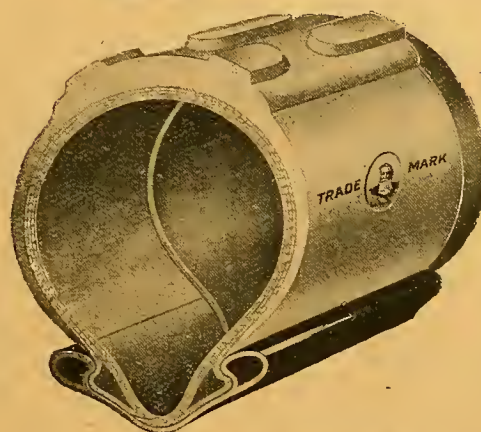


## THE NEW EXTRA HEAVY DUNLOP TYRE.

26 × 2 $\frac{3}{8}$ in. and 26 × 2 $\frac{1}{2}$ in.

(as illustrated). For passenger work.

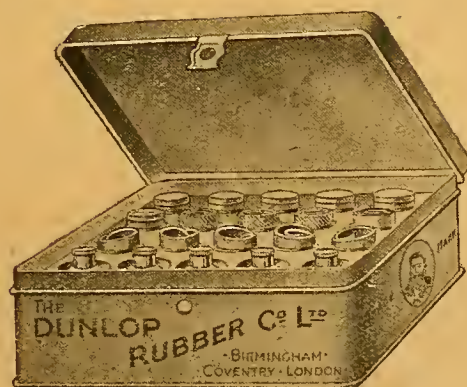
Heavy rubber-studded Dunlop tyres, wired or beaded pattern. For solo work. New rubber-studded Dunlop tyre for speed work. Dunlop sidecar tyre 26 × 2 $\frac{1}{2}$ in. beaded only. Warwick rubber-studded tyres.



## THE NEW DUNLOP MAGAZINE OUTFIT

(as illustrated). Patent 23738/1911.

This has only to be seen to be appreciated. The receptacles contain the exact amount of chalk or solution requisite for one repair, and can then be thrown away. Always tidy. Refills obtainable.



DUNLOP BELT,  $\frac{5}{8}$ in. to 1 $\frac{1}{8}$ in. All prices reduced. New Dunlop belt piercers. New Dunlop security bolt. Dunlop "Surepatches." Dunlop patch fixer. Dunlop fitter's stop, etc.

# STAND 116

## OLYMPIA CYCLE AND MOTOR CYCLE SHOW

November 25 to 30.

The DUNLOP RUBBER Co., Ltd., Aston Cross, BIRMINGHAM; Alma St., COVENTRY.  
Branches—London, Nottingham, Manchester, Newcastle, Bristol, Leeds, Liverpool, Glasgow, Dublin, Belfast.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*



# THE Douglas

VIBRATIONLESS LIGHTWEIGHT

The most successful machine  
of Season 1912

## Five Models for 1913.

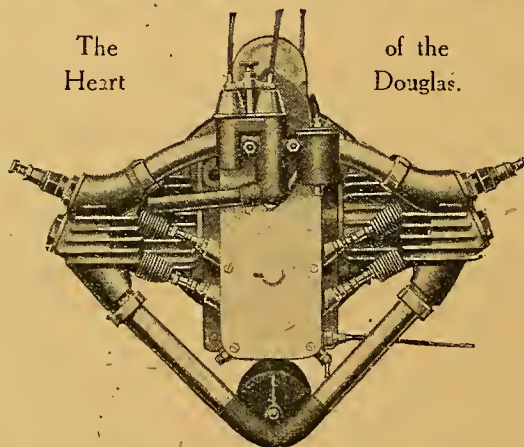
### Model N.

Single-geared machine with countershaft and pedalling gear, but not two speeds.

### Model O.

Light touring machine, with two speeds, free engine clutch, raised handlebars, footboards, and extra large petrol tank.

The Heart of the Douglas.



The 2½ h.p. Douglas Engine for 1913 still further improved.

### Model P.

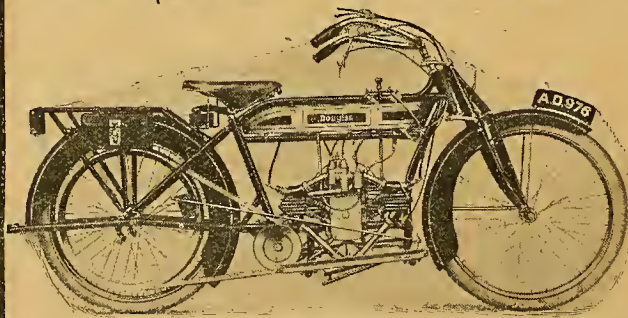
Light touring machine with two speeds, dropped bars, double footrests, but no clutch.

### Model R.

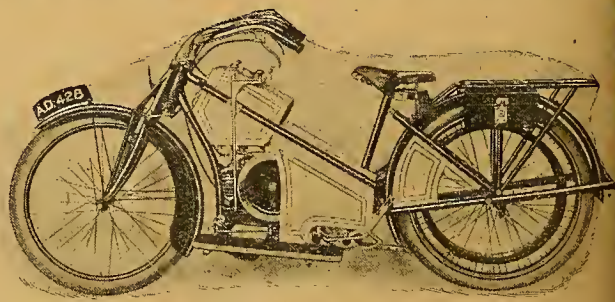
Full roadster machine, similar to touring model, but provided with kick starter and specially wide mudguards.

Ladies' Model, similar to Model R, but with dropped frame. Fitted with wide front mudguard and side extensions to rear guard.

INSPECT THEM AT STAND 104, OLYMPIA.



MODEL O.



LADIES' MODEL.

**DOUGLAS BROS., Kingswood, BRISTOL.**

Telephone—No. 51.

Telegrams—"Douglas, Kingswood."

LONDON—336, Goswell Road, E.C.



# RECORDS GALORE.

## THE Douglas

### 2 $\frac{3}{4}$ h.p. Motor Cycle

Ridden by Mr. S. L. BAILEY, on Tuesday, Nov. 19th, at Brooklands, placed itself still further ahead of all competitors by easily breaking the following

## RECORDS

### 200 and 250 miles 4, 5, and 6 hours.

A SPLENDID FINISH to a successful season for the motor cycle which has no serious competitor.

NOTE.—The DOUGLAS also holds the 5 miles, 150 miles, and the 3 hours' records.

Range of 1913 models on show this week, Stand No. 104, Olympia.

DOUGLAS BROTHERS,

Telephone No. 51.

KINGSWOOD, BRISTOL.

Telegrams: "DOUGLAS, KINGSWOOD, GLOS."

LONDON OFFICE: 336, GOSWELL ROAD, E.C.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*



# Avon-Lyso Belts.

## 50% DISCOUNT.

## Guaranteed Quality.

Prices per foot.

5in. .. ..	<b>1/5</b>
3in. .. ..	<b>All sold.</b>
2in. .. ..	<b>2/1</b>
1in. .. ..	<b>2/4</b>

**Less 50% discount.**

*Postage 6d. each extra.*



Licensed by Lycett's Rawido Belt Co., Ltd.

Our license is strictly limited; only a definite number of belts can be sold, and never again will you have a chance of buying belts of the best quality at half the usual price. This is not a clearance line—every belt is of best quality and not even shop-soiled. Selling fast. Order quickly.

Send immediately to our Branches or Works, or order through any recognised agent.

Post orders must be accompanied by cash.

Cash returned if not approved.

Mr. —, of Newquay, writes: "I have fitted the Avon-Lyso Belt to my 3½ h.p. Zenith-Gradua, and have already done nearly 200 miles with it, and will let you know later on how it goes. At present it shows no sign whatever of wear, and meets with much admiration from the many motor cyclists in this district who have seen it."

### THE AVON INDIA RUBBER Co., Ltd.

**Works : MELKSHAM, WILTS.**

Telegrams : "RUBBER, MELKSHAM."

Telephone : No. 2 MELKSHAM.

**Branches :**

**LONDON :** 35, Long Acre, W.C.

**BIRMINGHAM :** 204, Corporation St.

**BRISTOL :** Bristol Bridge.

**MANCHESTER :** 229, Deansgate.

**GLASGOW :** 197, Buchanan St.



Trade Mark.



**The Olympia Show.—**

3½ h.p. MODEL: 85 × 88 mm.; side by side m.o.i.v.; B. and B. carburetter; chain and belt; three-speed Armstrong gear.

In this model the general specification follows the already well-known New Hudson lines, with, of course, the exception that a combined form of transmission is used. Between the engine and the bottom bracket is a ball bearing counter-shaft, driven by chain from the engine, and carrying a large belt pulley for the drive to the back wheel. The initial chain drive is entirely enclosed in an aluminium oil bath case. The control of the gear and clutch is the same as that already described. The footboards on this machine are supported in front on pivots and at the rear upon spiral springs. A new type of silencer is used, in which the exhaust pipe is led to the aluminium expansion box at a point near its centre, and the gas makes its exit through holes at each end. A ½ h.p. direct belt-driven model is also shown.

**NEW IMPERIAL, No. 67.**

3½ h.p. MODEL: 90 × 77½ mm.; m.o.v. overhead valves; Amac carburetter; belt.

NEW IMPERIAL CYCLES, LTD., Princetree, Birmingham.—This being a T.T. model it has a short wheelbase. Driped lubricators are fitted, and the tank supported from underneath on brackets.

4½ h.p. MODEL: 90 × 93 mm.; side by side; Amac carburetter; belt; Armstrong three-speed.

The footrests are adjustable, and the brake fittings attached to separate lugs. The carrier with the back guard attached is secured by a snap fitting below the saddle, and is easily turned back for repairs.

This model has a petrol gauge worked on a celluloid float within the tank. The tank is a particularly neat casting with almost square radiators.

5 h.p. MODEL: 76 × 85 mm.; side by side; Amac carburetter; belt; Roc two-speed.

These two models are particularly suited for sidecar work and have the side lugs brazed to the frame. The mudguards have very serviceable side flaps,

and the finish is black with a green tank. Stands are fitted to both wheels. In addition to these models 2½ h.p. and 3½ h.p. touring models are supplied with similar details.

The New Imperial sidecar frame has a tube running all round, into which the body is dropped. This gives great strength and a low riding position. At the back are special supports for a bag and petrol tin. The sidecar body is fitted with a hood and screen.

**NORTON, No. 32.**

2½ h.p. MODEL: 70 × 90 mm.; m.o.i.v., side by side; Amac carburetter; belt; Armstrong three-speed.

NORTON MANUFACTURING CO., Sampson Road North, Birmingham.—On this new lightweight model the cylinder is off-set 10 mm., otherwise it follows the general features observed on Nortons.

3½ h.p. MODEL: 79 × 100 mm.; m.o.i.v., side by side; Amac carburetter; belt; Armstrong three-speed.

This machine may be taken as a typical example of Norton motor bicycles. The footboards are longer than last year's, rubber covered, and provided with a heel plate. Druid spring forks are fitted. An Armstrong three-speed gear is fitted, and both front and rear mudguards are provided with side shields.

The carburetters fitted to all Norton machines have specially large gauzes to the inlets. The magneto is the C.A.V., and is provided with a special cover made by the Norton Co.

The other models are a single-gear machine and a T.T. pattern. Pan seats are fitted to all the standards except the T.T., and it is interesting to note that all the joints of the carrier are welded, the tops, where the luggage fits on, being absolutely flush.

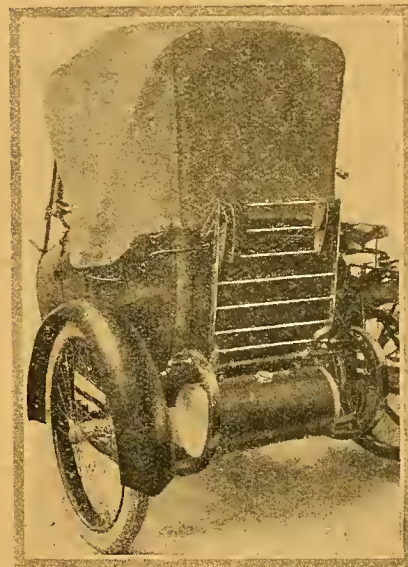
4 h.p. MODEL: 82 × 120 mm.; side by side m.o.i.v.; Amac carburetter; belt; Armstrong three-speed.

This machine, except that it is fitted with a larger engine, is similar in every respect to the 3½ h.p. model, on which, as in the case of other Norton models, the exhaust box has a taper outlet, and the final exit is through a long pipe. The Big Four is shown fitted to a sidecar, and is specially constructed for passenger carrying.

**N.S.U., No. 109.**

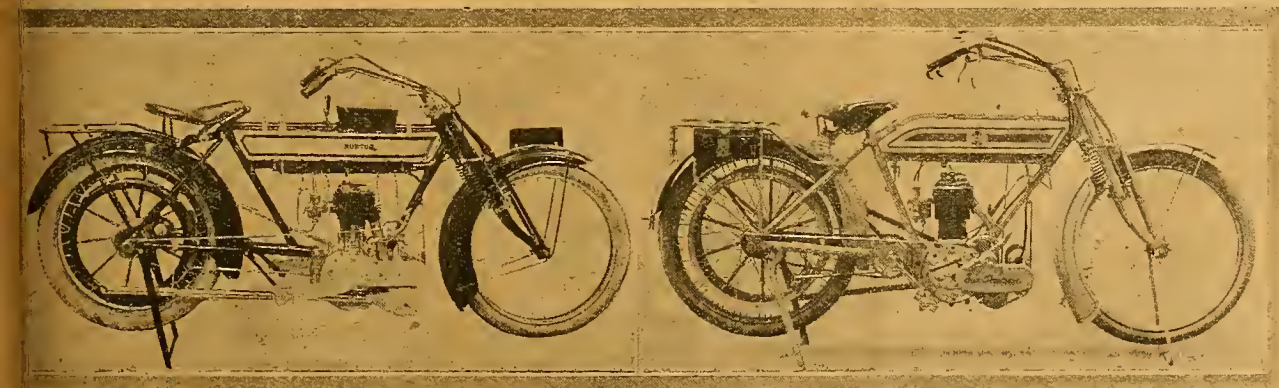
2, 3, and 6½ h.p. MODELS: 58 × 72 mm., 73 × 78 mm., and 75 × 94 mm.; overhead m.o.i.v.; N.S.U. carburetter; belt; two-speed N.S.U. gear.

N.S.U. Motor Co., LTD., Great Portland Street, W.—The chief feature about the 1913 N.S.U. machine is the dual control carburetter, which was described and illustrated in *The Motor Cycle* of the 14th inst., page 1311. In other respects the



A smart touring sidecar on the N.S.U. stand. Observe the springing, auxiliary petrol tank and luggage grid.

only changes that have been made are in the drop frame and in the modification of the inlet valve design to one of the overhead tappet worked type. The frame is sprung at the back by a helical spring behind the seat-pillar and hinged at the bottom bracket extension. A heavier type of the well-known N.S.U. two-speed gear is being used for the two roadster models—the 3½ h.p. and 6½ h.p. twin and single-cylinders respectively—and it is worth remarking that the other pattern of gear is designed so that it is adaptable to any make of machine, either with fixed or adjustable pulleys.



Valve side of the three-speed Norton, fitted with kick-start.

3½ h.p. clutch model. Sun Precision.



**The Olympia Show.—**

Among the sidecars is one with the type of patent body that was shown last year, but, in addition, a wind screen, hub, luggage grid, and subsidiary petrol

separate chains from the engine, these chains being enclosed in a weather-proof case. A single chain on the off side of the machine transmits the power from the counter-shaft. The gear is operated

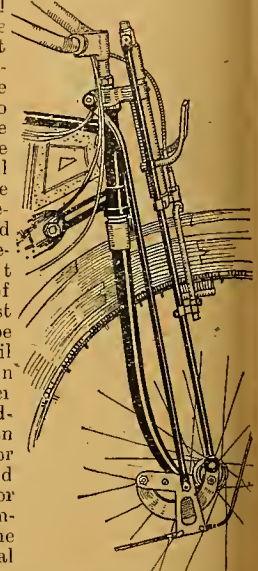
through which the air circulates. A large cooling surface is thus provided, the idea being to keep the temperature of the cylinder head at this point as low as possible. We are assured that the device works very well indeed.

**P. AND M., No. 87.**

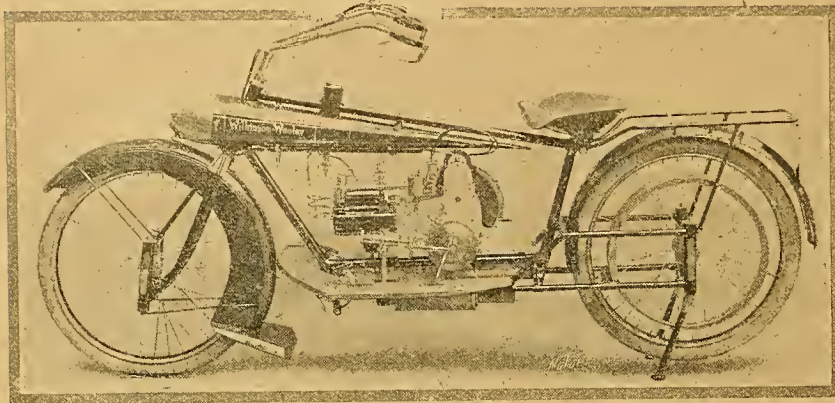
3½ h.p. MODEL (single-cylinder); 84.5 x 83.9 mm.; side by side valves; P. and M. carburetter; chain; P. and M. two-speed.

PHELON AND MOORE, LTD., Percy Street, W.C.—As will be noticed from the above, the engine dimensions of the P. and M. have been somewhat increased so as to bring it just inside the 500 c.c. limit. No radical

alterations have been made, but several improvements of some import are to be seen on the new model. The engine is still fitted with the P. and M. decompressor, and it will be remembered that this was one of the very first machines to be so fitted. Detail improvements in the kick-starter consist of a folding pedal, an adjustment for the chain, and an adjustment for the trip mechanism actuating the ratchet. Special stops are also now fitted for this starting gear. The two front chains and expanding clutches are protected by a chain cover which comes close up to the crank case, and the eccentric bottom bracket adjustment for the chains has been considerably simplified; it is now only necessary to remove a set-screw from a notched quadrant, rotate the eccentric, and replace the set-screw in another hole. The silencer has been improved,



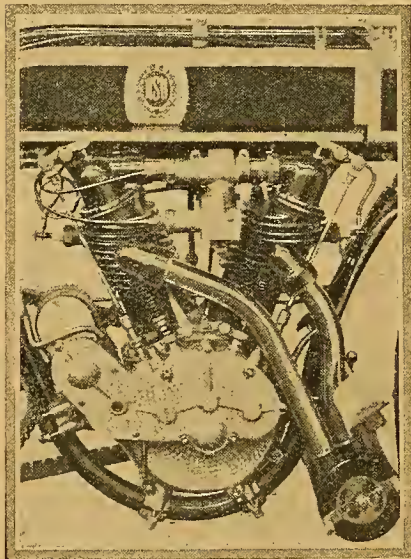
The latest P. & M. forks have triple stays. The lamp bracket is detachable.



The Wilkinson-Wooler, a two-stroke machine of unconventional design.

tank have been added. The handsome sidecar adapted for commercial purposes and fitted with a trade box body also calls for comment.

The models on this stand (the 2 and 3 h.p. single-cylinders and the 6½ h.p. twin) are entirely new. The first two are essentially solo machines. The 6½ h.p. is a useful machine for sidecar work.



Valve side of the 6½ h.p. N.S.U. This illustration shows the loop frame, exhaust leads and new carburetter.

**O.K., No. 55.**

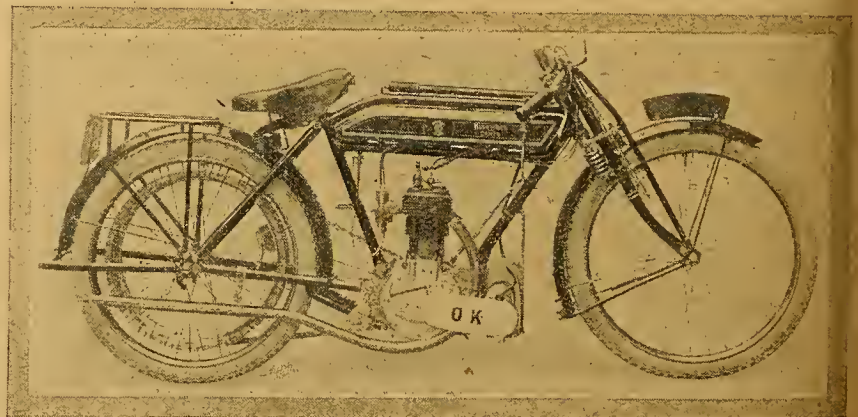
6 h.p. MODEL: 76 x 85 mm.; side by side m.o.i.v.; Amac carburetter; chain; O.K. two-speed gear.

HUMPHRIES AND DAWES, Lancaster Street, Birmingham.—The 6 h.p. twin is a handsome machine specially designed for sidecar work. The two-speed gear consists of two clutches driven by

by a vertical rod and a handle, which is moved in a horizontal plane. In conjunction with the gear a hand starting arrangement is used, and consists of a chain sprocket carried on the saddle tube immediately below the tank, and connected with the counter-shaft through a long chain. A single silencer is used for both cylinders, and is furnished with an exhaust cut-out actuated by a rocking pedal placed in front of the left foot-board. These boards are of aluminium studded with rubber. A special brake rim is spoked to the back wheel, and on this the foot brake is applied. The petrol tank is very neatly designed, and is free from any sharp corners. Both this and the oil tank are fitted with large fillers.

3½ h.p. MODEL: 85 x 88 mm.; side by side m.o.i.v.; Amac carburetter; belt; three-speed Armstrong gear.

This model, together with the 2½ h.p. Precision-engined machine, is on standard lines, and has no features particularly to call for attention except a radiating device in the exhaust valve cap

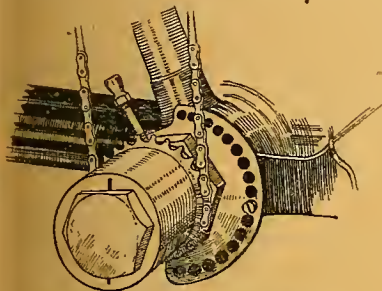


T.T. 3½ h.p. O.K. Precision which, it will be noticed, has extra stays at the rear to ensure engine rigidity.



**The Olympia Show.**

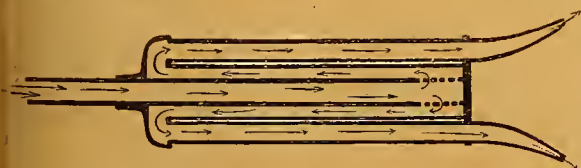
and consists of a large diameter tube running longitudinally under the engine; inside this is a smaller tube through which the gas enters. Thence, after returning to the front, it is allowed to escape through two small diameter tubes, one on each side of the rear wheel. The frame has been strengthened throughout, twelve-gauge tubing being used. The front forks have been improved in detail, and it is now practically impossible for them to become clogged by mud. Additional girders are fitted to the front forks, and the lamp bracket is detachable. The forks are somewhat wider so as to allow for the passage of wider mudguards. The front guard has side exten-



New method of eccentric adjustment of the P. & M. gear.

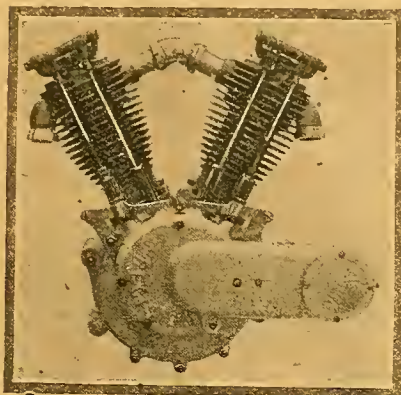
sions for its full length and a large mud flap at the base. The rear guard has short side flaps, which prevent mud dripping on the chain. The upper part of the rear chain is also protected by a rear guard. A front wheel stand is fitted below the footrests. The petrol tank has rounded edges, and no taps are employed in its construction, needle valves only being used. A useful primer is fitted, which also serves as a drain tap should it become necessary to empty the tank. A portion of the rear mudguard is considerably lowered so as to provide ampleumping room for the pan saddle. A large toolbag is fitted between the rear mudguard and the saddle-pillar, and carries a paraffin can on one side and an oil can on the other in readily accessible positions. Lubrication is now on the automatic and Lloyd semi-automatic drip principle, and petrol and oil gauges are attached to the tank.

A colonial model is also shown, which is several interesting features, the most striking being probably the tank, which is as well on the near side extending throughout its complete length. This tank reaches to the bottom of the lower oil and gives a tank capacity of over 10 gallons. The colonial model is finished with all-black fittings throughout and has especially large ground clearance, this being obtained partly by the footrests being fitted somewhat higher up than the standard footboards. The finish of the machine is excellent.



Section of the new P. and M. silencer, which is very efficient.

A well-known fitting on P. and M. machines is the small metal tube carrier, which is supported by the side of the rear mudguard. A novelty on both P. and M. models is the fitting of a Hoffmann ball thrust bearing to take the strains of the operating gear.

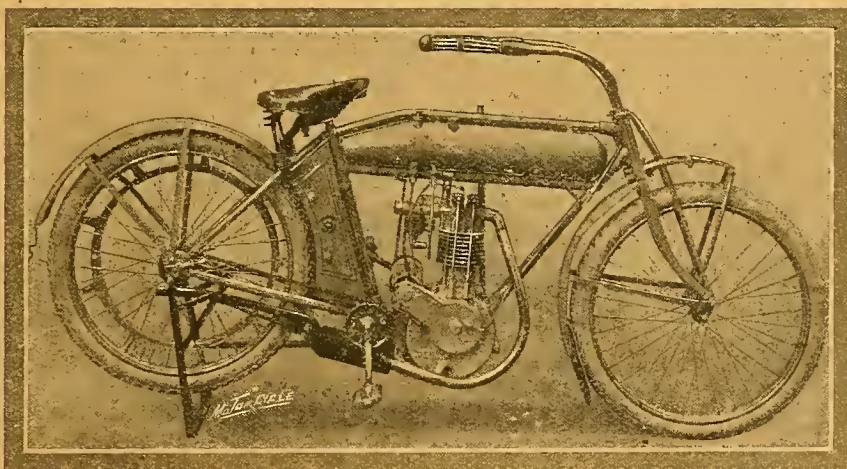


New 6 h.p. twin Precision engine with overhead valves.

**POPE, No. 124.**

3 h.p. and  $3\frac{1}{2}$  h.p. MODELS: H,  $76 \times 94$  mm.; K,  $84\frac{1}{2} \times 89$  mm.; H, automatic inlet valves; K, overhead mechanically operated valves; Schebler automatic carburetter; H, V belt; K, flat belt.

THE POPE MOTOR CYCLE AGENCY, 55, Banner Street, E.C.—There are three Pope machines on view, known as the K



Valve side of the  $3\frac{1}{2}$  h.p. Pope model K.

and H models. The H model is a 3 h.p. machine scaling 160 lbs., with an automatic inlet valve and Schebler automatic carburetter. Ruthardt magnetos are fitted. A free engine is obtained through the medium of a plate clutch on the engine-shaft. Another feature of both these machines lies in the triple head that recalls the Referee pedal bicycle of some years ago, the trussed forks being supported on the arm of a bell crank lever fulcrummed from the axle and controlled by a flat leaf nickel steel spring projecting forward from the fork crown.

In the K type a Ruthardt magneto and automatic carburetter are also employed, but the engine is designed with overhead valves closed by helical springs placed between the tappet and tappet spindle, the latter being adjustable.

The greatest departure from British practice is the flat  $1\frac{1}{2}$  in. belt drive. A plate clutch is mounted on the engine pulley. The lever which operates the clutch is provided with a bell crank arm having a spring-mounted jockey pulley at its end.

When the lever is in the mid position it brings the clutch only into action, further forward movement causing the jockey pulley to bear on the belt and tighten it. The chain pedal drive is adjusted by an eccentric on the pedal crank bracket. The cylinder is off-set, and the gudgeon pin is secured to the connecting rod by a taper lock nutted bolt, and rocks in bearings on the bosses of the piston.

**PREMIER, No. 111.**

$2\frac{1}{2}$  and  $3\frac{1}{2}$  h.p. MODELS:  $73 \times 66$  mm. and  $85 \times 88$  mm.; m.o. side by side valves; Brown and Barlow carburetter; belt and combined belt and chain; Premier two-speed counter-shaft and Armstrong three-speed hub.

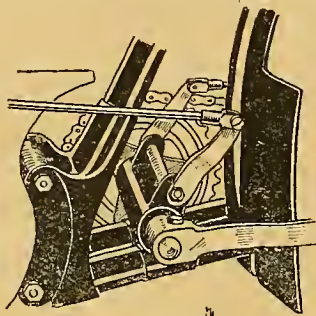
THE PREMIER CYCLE CO., LTD., Coventry.—The  $2\frac{1}{2}$  and  $3\frac{1}{2}$  h.p. machines on this stand demonstrate various methods of transmission. On the  $3\frac{1}{2}$  h.p. T.T. machine the firm have an example of fixed drive, while a belt drive is used

either in conjunction with an Armstrong three-speed hub, free engine, or direct. A fine example of the  $3\frac{1}{2}$  h.p. is fitted with the Premier two-speed counter-shaft gear, which involves chain transmission from engine to gear box, belt from gear box to back wheel, and in this the 8 in. belt pulley which drives to the back wheel is of a new pattern, adjustable, and designed so that its own driving gives it a tendency to self-locking, while the turning of a large diameter nut unlocks it. A striking feature about this machine is the width of the back mudguard, which is about 7 in. wide. It can be swung clear for tyre repairs. The arrangement of the engine in the frame is exceptionally neat. The water-proof Bosch magneto placed at the back



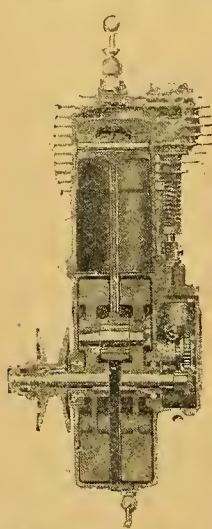
**The Olympia Show.—**

of the cylinder is gear-driven, and a Brown and Barlow carburetter supplies the mixture. The auxiliary exhaust



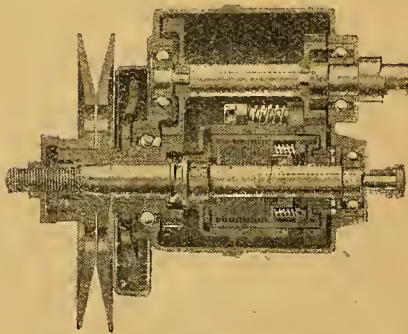
Premier pedalling gear bracket, brake rod carrier, and connections.

ports that have for so long formed a feature of the Premier design are, of course, retained, the exhaust from them being led by a pipe to the silencer.



Section of the 3 h.p. single-cylinder Premier engine.

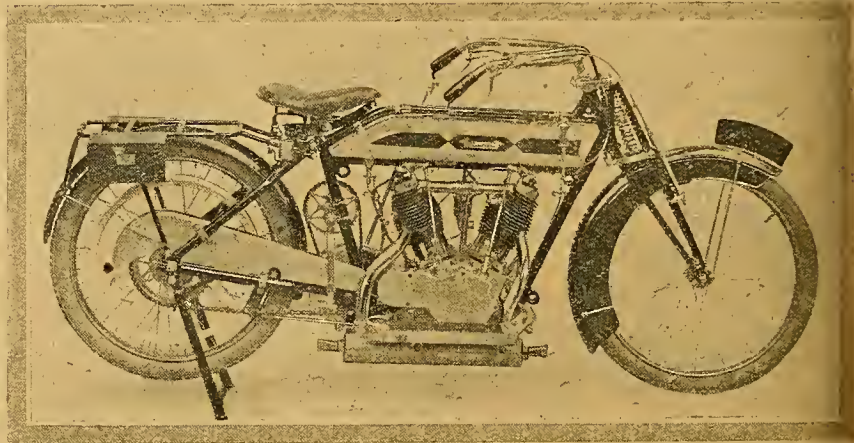
always in mesh. The oil pump is incorporated in the tank, and in this tank the spring filler caps of last year are retained. New features, however, are seen in the front wheel stand, which also acts as the lower mudguard stay, in the neat fitting of the toolbox, and in the spring-up stand at the back.



Section of Premier two-speed counter-shaft gear with enclosed plate clutch and adjustable pulley.

In the counter-shaft model, the chain is exceptionally neatly enclosed, and in the single-cylinder belt-driven type a neat aluminium protecting device is carried over the belt pulley.

The firm also have on their stand an example of the 7-9 h.p. engine that they are fitting for sidecar work. This is an 85 x 88 mm. twin, and the exceptional size of the crank discs should give exceedingly steady slow speed running. A notable point, too, is the quick detachability of the inlet pipe from the cylinder.



New twin Quadrant sidecar machine. It has two speeds, chain drive, and handle-starting.

**QUADRANT, No. 46.**

7 h.p. MODEL (twin-cylinder, V type): 87 x 95 mm.; overhead inlet valves, m.p.; B. and B. carburetter; chain; two-speed gear.

QUADRANT Co., Lawley Street, Birmingham.—This fine sidecar machine is the attraction on the Quadrant stand. The engine is well up to its work and is an entirely new design with the magneto built, and the chains have neatly decarried at the rear. The frame is sturdily signed guards. The gear is mounted in the counter-shaft, and is of the selective clutch type, whilst handle starting is provided. Underneath the left footboard a long silencer of big capacity is located. A new form of spring fork makes its first appearance.

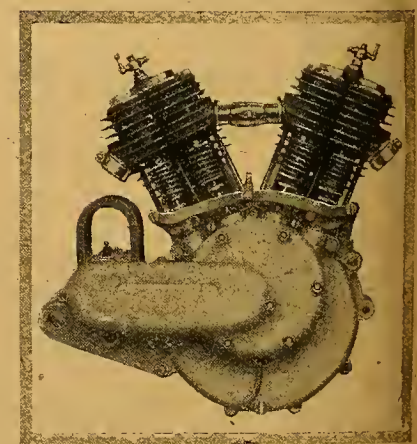
Single-cylinder models, on much the same lines as the twin, but with belt drive, are also exhibited. One is pleased to note that the Quadrant retains the excellent characteristic of a smooth crank case, rendering the cleaning operation much more simple, and, generally, the new Quadrants appear very workmanlike designs. They embody up-to-date practice throughout.

**REX, No. 92.**

4 h.p. MODEL (single-cylinder): 84½ x 95 mm.; side by side valves; Brown and Barlow carburetter; belt; Rex two-speed gear.

THE REX MOTOR MANUFACTURING CO., LTD., Coventry.—Several interesting features are incorporated in the new design. A new and neatly shaped tank is fitted which has a particularly clean appearance since there are very few fittings. It is supported from below by

lugs brazed to the frame. The petro filler has a glass cap which serves, also, as a level indicator, and with the oil filler cap is incorporated an air pressure pump. With a few strokes of this pump sufficient air pressure can be obtained in the tank to feed oil through an adjustable sight-feed drip for a considerable period. The frame is not much altered, but a somewhat stronger steering head is now standard, an interesting feature being the handle-bar lug, which is keyed and bolted to a solid steering pillar, and is clipped to the bar itself so that the



6 h.p. Rex twin-cylinder side by side valve engine.

passing through a ring fixed to the tank. The well-known cantilever saddle suspension is, of course, still used. The rear portion of the frame is detachable and carries the Rex two-speed gear, which is made under Roy licence. Footboards are fitted, and the mudguarding has been



**The Olympia Show.—**

well carried out. The belt guard deserves special attention, as it is carried round the driving pulley and extends backwards below the belt almost to the rear hub; it has, also, a side member which protects the belt from any mud

6 h.p. MODEL: 76 × 85 mm.; side by side valves; B. and B. carburetter; belt; Rex two-speed hub gear.

This machine is fitted with a Rex cantilever saddle-pillar. A guard is placed below the belt to protect it from wet and mud. Sidecar lugs are permanent attach-

tank. The clutch is controlled by a pedal on the left-hand side, while a similar pedal on the right brings into action an expanding brake in the hub. A band brake is fitted to the front wheel. Saxon forks and Hutchinson tyres are standard. Two of these machines have sidecars attached, one of which is fitted with an excellent Cape cart hood. A third is combined with a tradesman's carrier. The lubrication is by Best and Lloyd pump and drip feed. The mudguarding is efficiently carried out.

**ROVER, No. 86.**

3½ h.p. MODEL: 85 × 88 mm.; side by side; B. and B. carburetter; belt; Armstrong VI

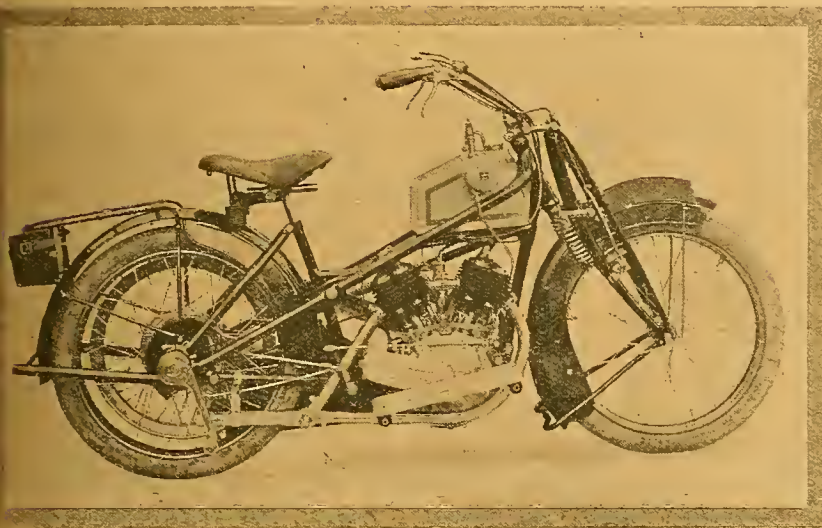
THE ROVER CO., LTD., Coventry.—The chief alteration to the Rover model lies in the tank, which has rounded edges, and is also sloped away towards the rear. The oil tank is a steel pressing let into the main tank so as to form an absolutely unbreakable joint. A plain tapless pump and large glass-topped filler caps are fitted with a gauze strainer inside each.

The frame now has a dropped top tube, but in other respects remains unaltered. The front mudguard has side flaps extending to the fork head, and the rear guard has side extensions for both belt rim and brake rim. The foot brake is placed above the chain stay instead of below, and the leverage somewhat increased from the pedal. The carrier is particularly large, and the pannier toolbags are protected on two sides by steel plates. A new silencer is fitted which is circular in shape and lies underneath the bottom bracket. For this reason it is necessarily somewhat short, but the diameter is very considerable. From this expansion chamber a pipe leads back to a point near the rear hub, and in actual practice the exhaust is extremely quiet.

Except for these fittings the Rover machine is little altered.

A similar model can be obtained either with a free engine, which is of the Triumph type, and made under licence by the Rover Co., or with a fixed gear.

A Tourist Trophy type is also manufactured which is on the same lines throughout, but has a shorter wheelbase,



Open frame 6 h.p. belt-driven Rex.

which might drip off the rear guard. This model may also be obtained with a fixed gear or the Rex hub cone clutch.

6 h.p. MODEL (twin): 77½ × 95 mm.; side by side valves; B. and B. carburetter; belt; Rex two-speed gear.

With the exception of the twin-cylinder engine this model is similar to the 4 h.p. Both types have sidecar lugs made with the frame. The latter model may be obtained with a specially low frame suitable for a lady. In this case the oil tank is separate and lies across the frame just in front of the saddle-pillar. The description and illustrations of this frame will be well remembered by readers of this journal. A sidecar is shown which was described in a recent issue. It has four points of attachment and a specially strengthened frame, also auxiliary coil spring suspension.

The 6 h.p. chain-driven is similar to the belt-driven models, with the exception of the transmission, which is well protected from mud. A 4 h.p. lady's model, with open frame, was expected on the stand, but had not arrived at the time of our visit.

**REX-JAP, No. 68.**

3½ h.p. MODEL: 85 × 85 mm.; overhead valves; B. and B. carburetter; belt; Sturmev-Archer three-speed hub gear.

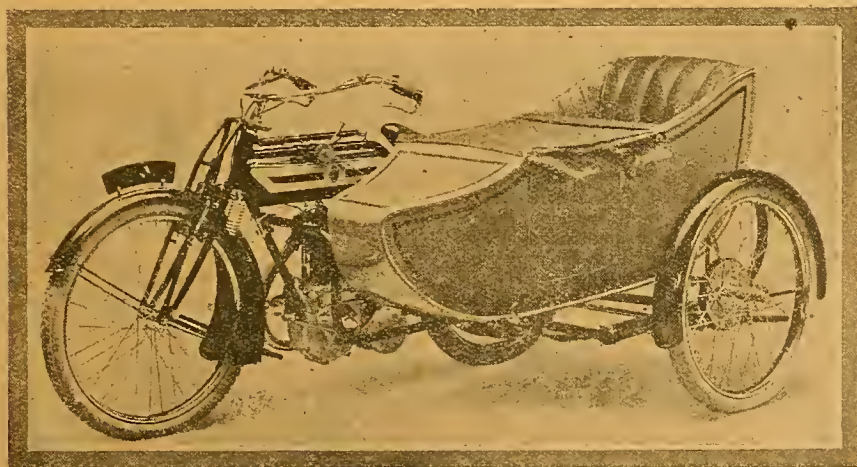
THE PREMIER MOTOR CO., Aston Road, Birmingham.—The mudguarding of this increasingly popular machine is very well carried out. Front and rear stands are fitted. The inflator, which is of a commendable length, is attached to the stays of the spring forks which are of Druid pattern. Instead of a petrol gauge the filler cap has a glass top

ments, covered with caps. Kempshall tyres are a standard fitting. Several sidecars are shown with coach-built and cane bodies, two of which are attached to Triumph bicycles. One sidecar chassis has a dropped frame to admit of a low position.

**ROLFE, No. 71.**

6 h.p. MODEL: 76 × 85 mm.; side by side valves; Amac carburetter; Rolfe three-speed in counter-shaft; chain.

THE ROLFE MFG. CO., LTD., Smethwick, Birmingham.—These powerful looking machines are fitted with twin Precision engines. The counter-shaft three-speed gear, with which is incorporated the kick starter, is operated by a convenient lever on the right side of the



The new Rover sidecar which will be sold complete in 1913. The sidecar wheel has a band brake.



**The Olympia Show.—**

fixed gear, and the usual T.T. fittings. A special sidecar chassis is made by the company, one of the chief features of which is a band brake on the sidecar wheel. This is connected to a pedal on the bicycle and is compensated with the rear motor cycle brake. The chassis is low and the body has a pleasing appearance.

The magneto is handle-bar controlled, and lies well out of the way of mud and dust. The excellent finish and workmanship of Rover machines are too well known to need our praise.

**RUDGE, No. 93.**

3½ h.p. MODEL: 85 × 88 mm.; mechanical valves, overhead inlet; Senspray carburetter; Rudge-multi gear; belt.

**RUDGE-WHITWORTH, LTD., Coventry.**—Eight splendidly-finished machines are exhibited on this stand. Also an excellent display of parts; these are mounted on boards. The arrangement of these parts is an excellent way of showing visitors the various details of the Rudge-Whitworth machines. For example, the parts of the multi hub and gear, piston, connecting rod, timing gear, roller bearings fitted to connecting rod and starting gear, are all shown in this manner. There are also neat enamelled iron stands on which are fitted engines in part section, the cylinders being cut away to show such parts as the piston, rings, valve ports, etc. The timing gear cases are also cut away to show the timing gear wheels, magneto drive, and arrangement of cams. Visitors who examine these should take particular note of the magneto transmission gear wheel attachment to armature-shaft. There is a very fine adjustment for the magneto timing by means of serrations or fine flutings on shaft and wheel. The latest device should prevent any possible chance of the washers working off the end of the shaft. Projections are cast on the inside of the aluminium cover plate; these do not touch the washers when the shaft is revolving unless there is a tendency for them to work endwise, when the projections immediately prevent any further movement.

One of the stands carries an engine fitted up with the Multi-gear expanding pulley and clutch, also the lever for operating same, and a portion of a handle-bar with Bowden control for the clutch. The outside of the pulley is cut away to show the clutch plates, spring, etc., so that by moving the gear-operating lever and clutch lever the visitor can see for himself exactly how the gear works. Still another stand shows the whole power unit, but with the clutch only. Another little detail improvement which has not been previously mentioned is the spring-fitted lid to the tank fillers. The lid is rectangular, and by means of two springs—one a coil spring anchored to the inside of the tank—the lid can be turned back and will remain in that position until it is partly lifted up with the finger, when the spring automatically shuts it and holds it in the closed position.

Two Rudge-multi models driven by electric motors show the operation of the gear in an excellent manner, which any amount of demonstrating by word of

mouth could not improve upon. Moving the connecting rod of the sample crank case, flywheels, and connecting rod, which have been fitted up to show the easy running of the roller bearings, proved to us that Rudge-Whitworth, Ltd., have left no stone unturned to provide efficiency.

The free-engine model is provided with a spring end cap to the clutch cover, so preventing any oil being blown out on to the rider's feet. Caps are fitted to the centre of the cylinders, allowing 1½ in. hole when removed. This is done to facilitate the casting of the cylinders. At the same time it allows a big opening through which one of the scrapers sold for cleaning off carbon deposit can easily be inserted. The finish of these machines should be particularly noted: the celluloid covered handle-bars give the machine a very handsome appearance and match excellently the fine enamelling of the frames.

5-6 h.p. SIDECAR MODEL: 85 × 132 mm., 750 c.c.; mechanical valves, overhead inlet; Senspray carburetter; Rudge-multi gear; belt.

The latest addition to this long-stroke model is the fitting of the 500 c.c. exhaust valve spring to the inlet valve. The flywheels have been increased in weight, and the cams have been redesigned to give the necessary increased opening for the passage of the greater volume of gas. The connecting rod has the same roller bearings as the 500 c.c. engine.

The sidecar chassis is made up of straight tubes throughout, and is particularly well attached to the bicycle. In addition to the usual front and rear attachments, further security is provided by clipping the inner frame member of the sidecar to the footrest tube. To arrive at a straight tube design the chassis is dropped so that the connecting tubes need not pass underneath the sidecar body. A diagonal tube connects the outside tube with the one nearest to the bicycle which greatly strengthens the chassis. At the rear is a strongly-made luggage grid, and the mudguard is particularly well stayed to the frame. A double bracket is provided for lamp and generator. The sidecar wheel is very strong laterally, being built with wide flanges. The wheel is enamelled black all over and fitted with a 26 in. × 2½ in. tyre.

The body is coachbuilt. upholstered in

green pegamoid, and painted to match the Rudge finish on the tanks, i.e., aluminium with broad green lines. The apron is a particularly practical and neat idea. It folds in such a way that it can be used as either an ordinary apron or a storm apron, but when folded the eyelets of the storm apron fit over the turn buttons provided for the ordinary apron so that it is not necessary to fold up a detachable portion and carry it under the seat. At the front of the apron is a little draught excluder, which prevents wind blowing underneath.

The Rudge machines have come to the fore in a surprising manner, and a visit to the company's stand will confirm our good opinion of the workmanship and material used in their construction.

**SERVICE AND W.D., No. 17.**

3½ h.p. MODEL: 85 × 85 mm.; side by side m.o.i.v.; B. and B. carburetter; Armstrong three-speed gear.

**THE SERVICE CO., LTD., High Holborn, E.C.**—This is a well-built, well-designed touring model, following standard lines throughout.

3½ h.p. W.D. MODEL: Overhead inlet valve; B. and B. carburetter; belt; single gear.

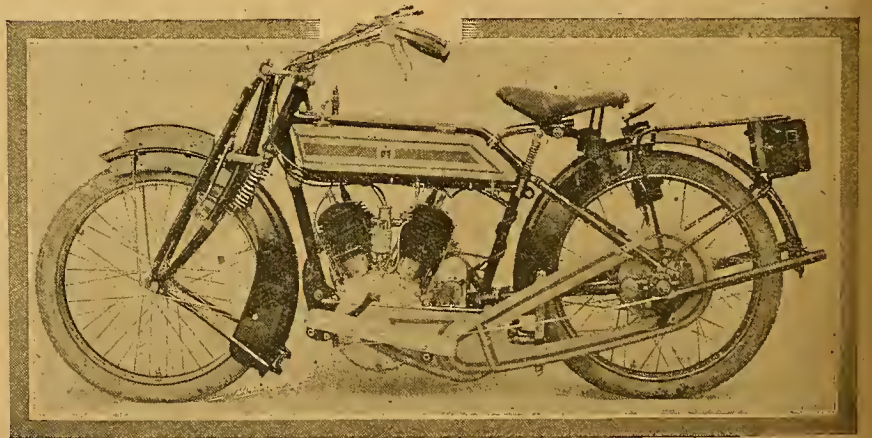
This machine, which is shown by the Service Co., made its first appearance last year, and has not, we understand, been materially altered. Its chief feature is the very excellent system of lubrication employed, in which, we may remind our readers, a large sump is fitted to the bottom of the crank chamber, from which oil is taken by pump and delivered under pressure through the hollow crankshaft to all the bearings.

There are also shown on this stand a 3½ h.p. Triumph, 2½ h.p. Douglas, 6 h.p. Rex, 3½ h.p. Rudge, and 3½ h.p. Dot.

**SCOTT, No. 117a.**

3½ h.p. MODEL: Two-stroke valveless twin; Scott carburetter; chain; two-speed counter-shaft gear.

**GODFREY AND APPLEBEE, Great Portland Street, W.**—By arrangement with the Colmore Depot, who agreed to give up their stand to Godfrey and Applebee, visitors to the Show will be able to see the winning Scott in the Tourist Trophy Senior Race. In general appear-



New chain driven Rex, 6 h.p. twin, with two-speed gear and spring seat.



**The Olympia Show.—**

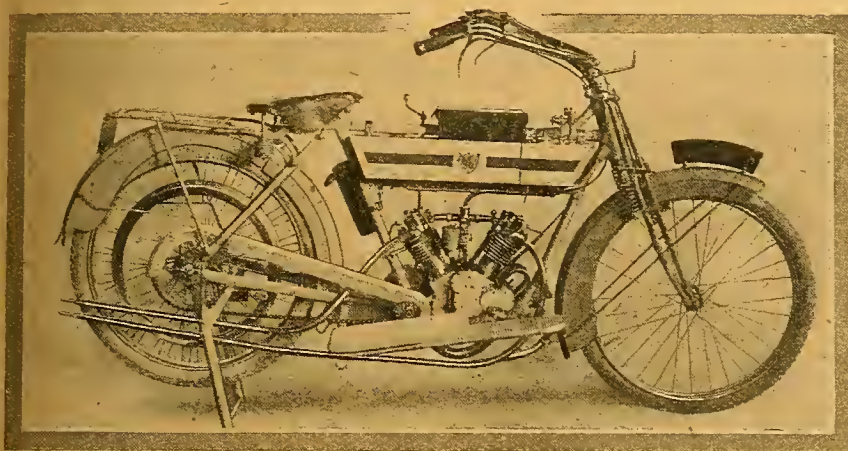
ance the 1913 Scott is exceptionally neat. The modifications in design are chiefly those of detail, the most noticeable being the system of encasing the transmission in sheet aluminium guards, and the finish of the exterior of the petrol tank in Rexine, which gives a very pleasing appearance. The principle of the two-stroke Scott engine, with its crank case compression, is well known, but we may point out that, although it has the appearance of being water-cooled, the jacket is not carried over the heads of the cylinders, which are air-cooled, as this arrangement has been found to give higher engine efficiency than if entirely water-cooled. In the gear the wearing surfaces are larger, and a great improvement has been introduced in the design of the counter-shaft, by which the chain sprocket driving to the back wheel can now be removed without taking down the counter-shaft. This is effected some-

portant feature of the engine is the fact that the head which carries the valves is screwed into the top of the cylinders.

**SINGER, No. 79.**

2½ h.p. MODEL: 69 × 80 mm.; side by side; B. and B. carburetter; belt.

SINGER AND CO., LTD., Coventry.—There is a very attractive display of motor cycles on this stand, one being a lady's machine, another a T.T. model, while a third is fitted with a Villiers free engine hub clutch. The Bosch magneto is carried in front of the engine and controlled from the handle-bar. The lady's model is fitted with the Singer two-speed counter-shaft drive, the drive from the engine to the counter-shaft being by gear and thence to the back wheel by belt. Druid forks, Middlemore saddles, and Dunlop tyres are standard. The control wires of the two-speed machines are carried in metal tubes above the handle-bars.



Moto-Reve new twin model with chain drive and two-speed gear.

what on the divided shaft principle, merely by withdrawing a bolt and washer at the left-hand end of the shaft. Of course, chain transmission is used, and the clutch works on the expanding ring principle, but these details embody no new features. Another feature, not new, but worth mentioning, is the simplicity of the method by which the front of the footboards is supported on small flat springs, while the support of the footboards at their back end renders them instantly detachable. The waterproof Bosch magneto is chain driven off the counter-shaft as before. Silent as the Scott machines certainly are, the 1913 model has been made quieter still by a small expansion chamber fitted at the end of the exhaust pipe. It should be mentioned that the actual machine upon which F. A. Applebee, jun., won the Senior T.T. Race, as well as its rider, are to be seen on the stand.

**S.I.A.M.T., No. 23.**

2½ h.p. MODEL: 68 × 72 mm.; overhead valves; S.I.A.M.T. carburetter; single gear; belt.

L. N. PALMER AND CO., 9a, Trevelyan Road, Tooting, S.W.—The two machines shown on this stand are identical with the new models described on page 1333 of our issue of the 21st inst. An im-

3½ h.p. MODEL: 85 × 88 mm.; side by side; B. and B. carburetter; belt.

This machine is shown single-g geared, and also fitted with the Armstrong three-speed hub. The saddle is a Brooks pan seat. It will be remembered that upon this make Stanley recently annexed the hour record.

4½ h.p. MODEL: 88 × 95 mm.; side by side; B. and B. carburetter; gear and belt; Singer two-speed.

This machine is most suitable for sidecar work. The gear is operated by a lever which is attached to the tube below the tank. The footboards are of cast aluminium. Pedals are provided for starting purposes geared direct to the engine by a chain. The carrier with the back mudguard will turn back on the removal of a bolt. The Singer machines are provided with neat valve covers, having an extension to protect the riders' clothes from the heat of the engine. These are made of aluminium.

The Singer sidecar has a special low frame with an extension at the back for luggage carrying. The springing is decidedly novel, being by means of spiral springs working in metal cylinders. A Turner sidecar is attached to one of the machines.

**SPARKBROOK, No. 99.**

6 h.p. MODEL (V twin): 76 × 85 mm.; m.o.v. side by side; B. and B. carburetter; Sparkbrook two-speed counter-shaft gear; chain and belt.

SPARKBROOK MFG. CO., LTD., Coventry.—This old-established pedal cycle firm with an excellent reputation enters the motor cycle lists for the first time at this Show. The only model exhibited is a 6 h.p. sidecar, with the firm's own two-speed gear on counter-shaft. This is of the dog clutch type, and operated from a lever on the top tube. The gear ratios are 4½ to 1 high and 7½ to 1 low. The drive is by 5in. pitch roller chain from engine to counter-shaft, thence by 1in. belt on 8in. pulley to rear wheel belt rim. A free engine clutch is contained in the counter-shaft pulley. The front forks are of Sparkbrook design manufactured under the Druid patents. The tank is carried on brackets brazed to the lower frame tube, and lubrication is by sight feed and pump. The frame is built up with lugs suitable for quickly attaching the sidecar. The sidecar has a coach-built body luxuriously upholstered with spring cushions on back and seat; the body is suspended on wide C springs, and a tubular luggage carrier is attached at the rear of the chassis. The wheels are 26in. × 2½in. with extra heavy Dunlop tyre on the rear wheel.

**STAR, No. 83.**

4½ h.p. MODEL (single): 87½ × 100 mm.; side by side valves; multi-jet carburetter; chain; Star three-speed gear.

THE STAR CYCLE CO., LTD., Wolverhampton.—This machine is quite a new comer, possessing several rather unusual features. The frame has a dropped top tube and a curved front down tube. Saxon front forks are supplied, and both wheels are carefully mudguarded. The tank is tapered fore and aft, and has rounded sides. Lubrication is semi-automatic. Both petrol and oil taps are of the needle valve variety. The handlebars are distinctly unusual, having a very sharp drop to provide a natural position for the hands, and flats to accommodate the Bowden control for carburetter and magneto. From the levers the wires are led inside the handle-bars, which gives the machine a neat appearance. The engine has many original features. The valves lie in large chests, which have an air passage all round. The cylinder head is detachable, and held on by four long bolts. The valve gear is enclosed by an aluminium cover, which grips the tappet guides and renders the valve gear oil-tight and dustproof. The carburetter is made by the company to suit their own machines. It is on the multi-jet principle, and has a variable choke tube. It is of the automatic variety, and draws its supply of air from an aluminium casting which encircles the cylinders, and, consequently, warms the mixture. The magneto lies behind the cylinder, and is driven by chain. A curious feature is that the oil is led into the magneto chain case. The system of lubrication is so arranged that the oil, having run from the chain case into the timing gear, is led



**The Olympia Show.**

into oil flingers, which, by centrifugal force, carry the oil into the crank pin, a lead being taken through the connecting rod to the gudgeon pin and cylinder walls. A simple form of decompressor is combined with the exhaust lift. A leather-to-metal cone clutch is mounted on the engine-shaft, and transmits the power by means of a chain to the gear box. This box is of the sliding gear type, similar to car practice, a direct drive being obtained on top. The driven sprocket is fitted with a spring-controlled shock absorber, which removes the harshness from the drive. The gear box is bolted to the bottom bracket, ample allowance being made for chain adjustment, and the final transmission is by chain to the rear wheel. Careful provision has been made for protecting both chains from mud and wet. The operation of the change-speed is by a lever working in a quadrant bolted to the top frame tube. A neat enclosed kick starter is attached to the gear box, and rubber-covered footboards, which are sprung at the rear, are fitted. The rear brake is unusual in that it acts on what may be termed an inverted belt rim; that is to say, the bottom of the V is on the outside periphery. Pannier toolbags are fitted, and the rear forks and chain adjustment are particularly solid. A very large expansion box is placed in front of the engine with the exhaust gases escaping through a long pipe with a specially flattened end. The whole machine is of unusual construction, and is calculated to attract a good deal of attention. Two attractive models of the Turner sidecar are shown on this stand; both models are built specially to suit the Star machine.

**SUN, No. 90.**

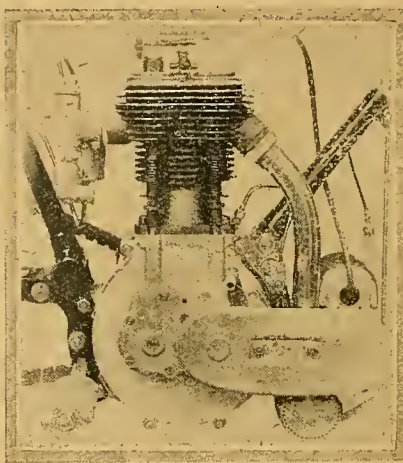
3½ h.p. MODEL (single-cylinder); 85×88 mm.; side by side valves; B. and B. carburetter; Sturmey-Archer three-speed; belt.

THE SUN CYCLE AND FITTINGS CO., LTD., Aston Brook Street, Birmingham. —Although this model is not entirely new this is its first appearance at Olympia. One notices at a glance that the finish throughout is excellent. There are no very special features, the frame being of the standard dropped tube type and fitted with Druid forks. All frame fittings are cossetted. The tank has neatly rounded edges, and is fitted with large filler caps, lubrication being effected by enclosed hand pump.

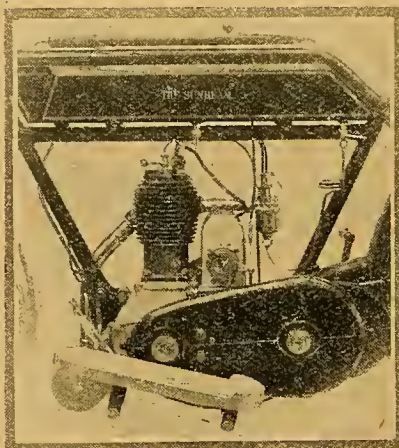
Both front and rear guards have short side flaps, and a stand is fitted to each wheel. A neat petrol sump combined with a strainer is placed between the tank and the petrol pipe, while pedalling gear is fitted as standard. The carrier is of the usual type, having pannier toolbags and giving ample accommodation for luggage. A pan saddle is fitted. A very neat clip for Bowden cables is placed under the tank; it consists of a metal trough, which slides in grooves fixed to the base of the tank.

The above description is correct for all Sun models, which are made with the following sized engines: 4 h.p., 85×85 mm., and 4½ h.p. 90×96 mm. (either of these models may be had with Villiers free engine or fixed gear); 2½ h.p., 70×90 mm.; and 2½ h.p., 70×76 mm. Each model is fitted with an efficient magneto guard and silencer.

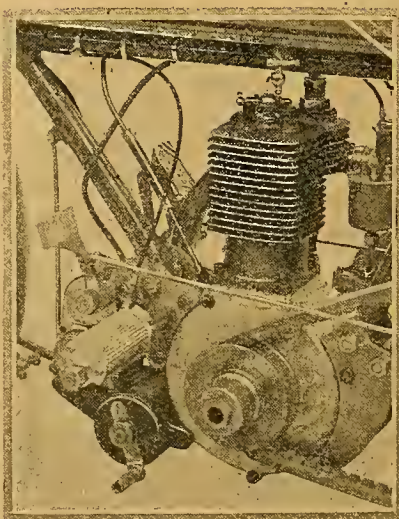
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**POWER UNITS OF SHOW MODELS.**

Power unit of the new 3½ h.p. Swift, from the valve side.



Chain side of the 2½ h.p. Sunbeam power unit.



The foot brake is mounted separately from the footrest on the Monopole.

**SUNBEAM, No. 64.**

2½ h.p. MODEL: 75×79 mm.; side by side valves; Amac carburetter; chain; Sunbeam counter-shaft two-speed gear.

JOHN MARSTON, LTD., Sunbeamland, Wolverhampton. —There are several examples of this beautifully finished machine, which we described in our issue of November 14th, page 1315. Naturally a special point is made of protecting the chains. Incidentally, it may be remarked that the same guards also protect the variable gear and clutch.

The tank, which is finished in black and gold, is firmly supported on brackets. The lubrication is by pressure fed pump. The inlet tube is tapered, the larger end being towards the engine. This is said to improve the carburation.

Front and rear stands are fitted. The back mudguard can be turned back bodily to allow of tyre repairs. The handle-bar is enamelled black. Mention has already been made of the back axle, which is divided to allow tyres to be changed without the removal of the wheel. Comfortable footboards are standard equipment.

**SWAN, No. 53.**

3½ h.p. MODEL: 85×85 mm.; side by side m.o.v.; Senspray carburetter; two-speed gear; chain.

CYGNUS MOTORS, LTD., Frodsham. —The Swan motor cycle possesses a number of highly interesting and valuable features. Its makers claim that it was one of the first machines in which a deliberate effort was made to enclose as much as possible the transmission and to provide a satisfactory form of spring frame.

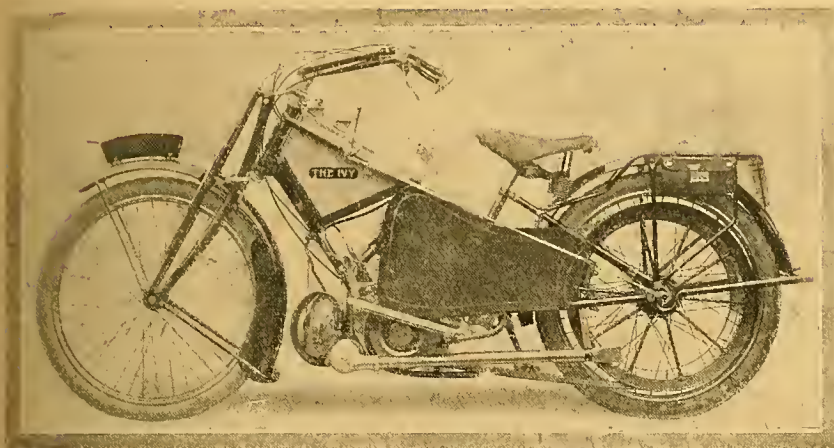
Although it has an unconventional appearance, no one can possibly deny its thorough practicability.

The frame, instead of being tubular, has no top bar, but consists of a chassis of stout aluminium plate strongly riveted and bolted together. At each side of the two side members are comfortable rubber-covered footrests. The engine is placed well forward, with the top of its crank case level with the top edges of the frame members, and this allows an aluminium plate to be clipped on so as to leave only the cylinder projecting. The crankshaft carries a leather-faced cone clutch, on an extension of which is fitted a hand starting device operated by a long lever. The gear box is of the positive or dog clutch type and is placed at the rear of the engine and driven by a chain, the final drive being also by chain.

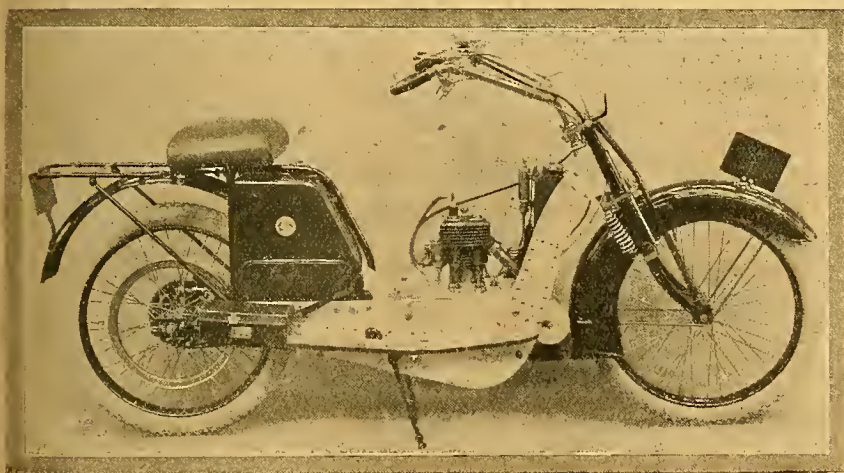
The gear control and also the clutch control are on the right-hand grip handle, both being worked through Bowden wires. The Mea magneto is placed immediately over the gear box and driven by two chains and a small counter-shaft. A powerful heel brake working on a special brake rim is fitted. The tank is immediately underneath the seat, which is of a new and very comfortable type. Suspension of the frame consists of two long leaf springs working in conjunction with pivoted chain stays, which are mounted on ball bearing trunnions. A J.A.P. drip feed lubricator is fitted to the small oil tank, which is under the steering head of the frame.



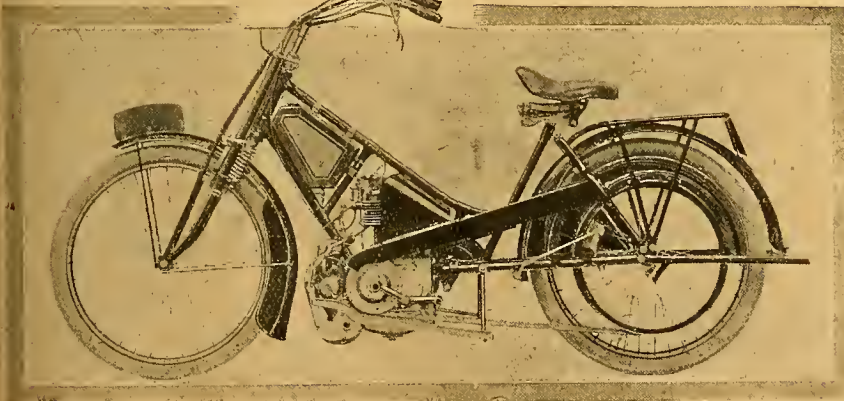
# Open Frame Show Models.



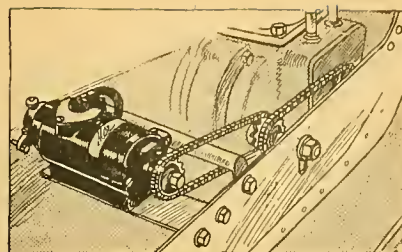
3½ h.p. three-speed open-frame model Ivy-Precision.



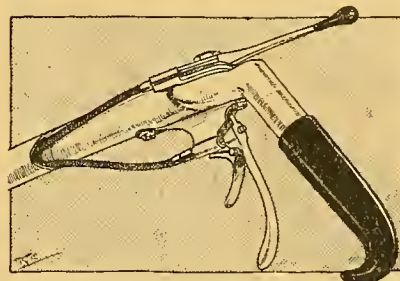
An example of the Swan, which has an open frame, sprung front and rear.



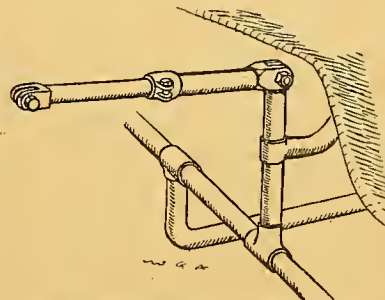
Ladies' model single cylinder Veloce.



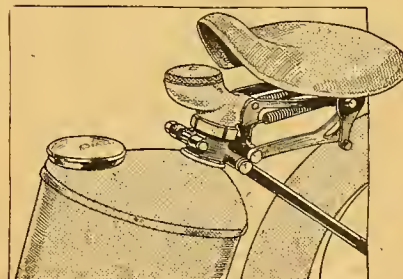
Swan double magneto drive with adjustment for chain stretch.



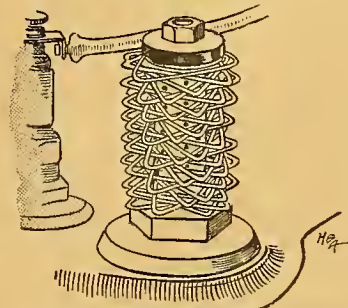
Natural position of handle-bar grips on the new Star.



Special design of tubes on the Indian sidecar.



The oil filler on the 1913 Scott is at the top of the seat tube.



Novel cooling device fitted in the exhaust valve cap of the O.K.

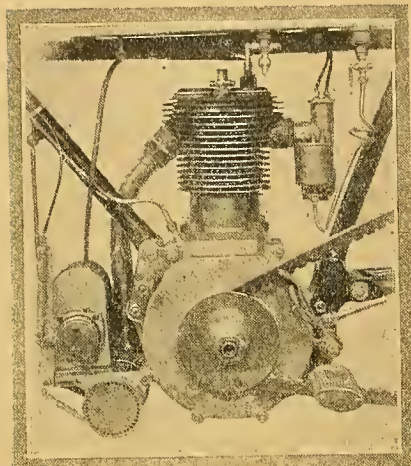


## The Olympia Show.—

**SWIFT, No. 100.**

3½ h.p. MODEL (single) : 86 × 85 mm. ; side by side valves ; B. and B. carburetter ; belt ; Armstrong three-speed gear.

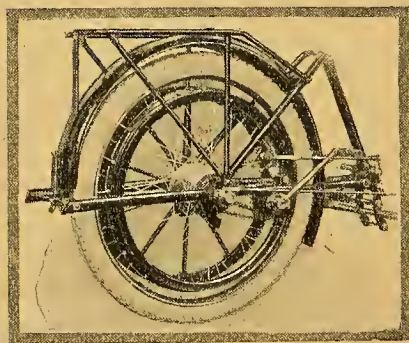
THE SWIFT CYCLE CO., LTD., Coventry.  
—The new Swift models are characterised by their simplicity and clean design. The



Pulley side of Swift engine. This picture shows the brake pedal on the T.T. model, also handle-bar controlled magneto advance.

engine has large valves and adjustable tappets, and the cylinder holding-down bolts are extremely accessible. A neat and very simple half-compression device is fitted to the timing gear and operated by a small pedal. The machine has a dropped frame which gives a very low riding position.

Two pairs of footrests are fitted, the front pair being radially adjustable. The tank is supported on lugs attached to the bottom rail. It has large filler



Rear wheel of 3½ h.p. Swift, showing kick starter mechanism, carrier, and stand clip.

cups and a combined petrol sump and strainer. Semi-automatic lubrication is used. An enclosed Bosch magneto is fitted in front of the engine and driven by chain. Ample clearance is allowed in the chain case to prevent rubbing.

The hand brake is a particularly neat and simple piece of work, and the arch to which the shoes are attached slides in guides brazed to the fork. One model shown is fitted with B. and B.

automatic carburetter, and handle-bar controlled magneto is standard throughout.

Mudguarding has been carefully studied, and in addition to side flaps running the full length of the front guard a large splasher is fitted to the front wheel stand. The rear guards have a wide extension covering the belt and rim.

A kick-starter is fixed to the back stay and connected to the hub by means of a short chain.

A fixed gear model is also shown and T.T. models with both fixed gear and Armstrong three-speed gears. The pannier toolbags are protected by steel shields, which are carried round three sides of the bag, and a Reflex rear light is fitted to all models.

**STELLAR, No. 118.**

6-8 h.p. MODEL : 78 × 82 mm. ; valveless ; Amac carburetter ; two-speed sliding gears ; worm and propeller-shaft.

NYE AND Co., Hampstead Road, N.W.  
—One of the finest examples of the influence of car practice on motor cycle design is to be seen on the Stellar machine exhibited by this firm. In this the two-stroke engine, flywheel, clutch, and two-speed sliding gears are incorporated in a single unit construction, in which the crank case is extended and enlarged to cover the flywheel, and the gears are contained in a casing bolted to the crank case. The Bosch magneto of the enclosed type is carried at an angle on the right-hand side of the gear box, and driven by the extended engine-shaft through a Coventry silent chain. Where the engine-shaft extension projects at the back of the gear box, a free-wheel pinion is fitted, and this, in mesh with a quadrant on a pedal-operated lever, gives the necessary kick-starting facilities. The engine utilises compression from the crank case, and a 40-plate clutch transmits power to the gear box. Thermo-syphon cooling is used, and the gear is operated from the lever on the left-hand side. The machine is equipped with a front-wheel rim brake, and one working inside a special U brake rim on the back wheel.

**T.M.C. AND WOOLER, No. 22.**

7 h.p. MODEL (four-cylinder) : 60 × 60 mm. ; side by side m.o.i.v. ; Stewart - Precision carburetter ; three-speed sliding gear ; bevel.

WILKINSON T.M.C. Co., LTD., Southfield Road, Acton, W.—This ambitious sidecar machine, which has a four-cylinder water-cooled engine, the cylinders being cast separately, remains practically unaltered. Since last shown at Olympia a modified form of radiator has been fitted. The design of the hand-



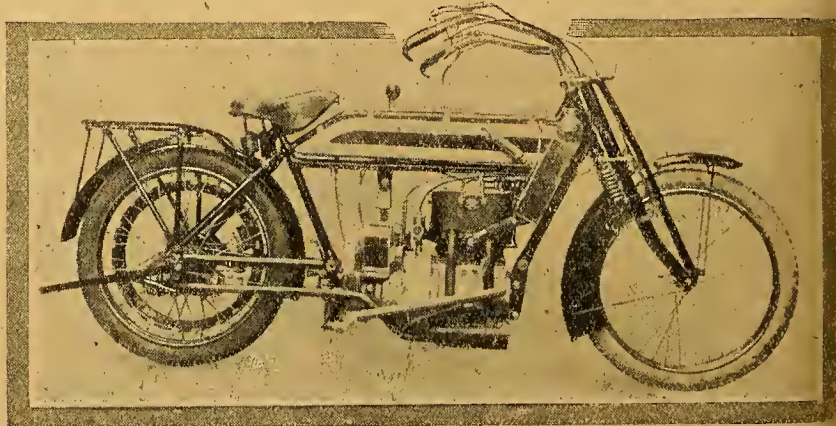
The front rim brake on the Swift. Notice that the brake itself is carried outside the guard to prevent mud splashing.

starting device has also been amended, and side extensions to the front mudguards added. The magneto drive is now flexible, a fibre disc being interposed between the two cheeks of the coupling, pins from each side engaging with holes in the fibre disc. The gear ratios have also been altered, and now are 4.6, 6.7, and 11.8 to 1.

2½ h.p. MODEL : 76 × 76 mm. ; two-stroke ; B. and B. carburetter ; expanding pulley gear ; belt.

The Wilkinson T.M.C. Co. are fortunate in having two machines which are a refreshing departure from standard, and both are attracting much attention at the Show. In addition to the four-cylinder just described is another interesting model, viz., the horizontal engined Wooler, which first made its appearance at Olympia last year.

The engine is of the two-stroke type, and possesses a blank-ended cylinder and a double-ended piston with one ring on the displacing end and three on the firing



The Stellar two-stroke twin, a machine of clever design.



**The Olympia Show.—**

end. Each end of the cylinder is connected by an external pipe with valves at each end, while the exhaust is effected by a port in the lower side of the cylinder walls. The crankshaft is now hollow. The lubrication is by pump, which delivers oil to the cylinder and drips oil on to the connecting rod and on to the big-end. In the sump, a lubricating oil injector is fitted into the filler cap, thus enabling oil to be injected to any moving part in the mechanism which may require it. The pulley is slightly under-geared, thus allowing it to be of ample dimensions. The back wheel is suspended on coil springs while we may also mention an ingenious device for tightening the belt. The pulley is free to swing backwards and forwards, pivoting on the crankshaft centre thus allowing the slack of the belt to be taken up when the lower gear is in engagement. This slides through an adjuster, which controls the limit of movement and allows the belt stretch to be taken up. The streamline tank and efficient system of mudguarding also call for attention. All control wires are enclosed, running through the handlebar and then through tubes to the carburetter. It is also interesting to note that the brake rod works through one of the frame tubes and is an exceedingly neat fitting. Detachable wheel spindles are fitted to both front and rear wheels—a great convenience.

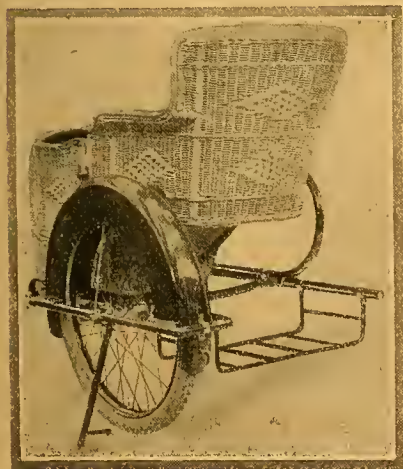
**TORPEDO, No. 82.**

2½ h.p. MODEL: 70 × 76 mm.; S.S.; B. and B. carburetter; Armstrong three-speed hub; belt.

F. HOPPER AND CO., LTD., Barton-on-Humber.—This little machine is also shown fitted with the B.S.A. free engine. The Best and Lloyd system of lubrication is adopted. The toolbags are carried pannier fashion in metal brackets.

3½ h.p. MODEL: 85 × 85 mm.; S.S.; B. and B. automatic carburetter; Armstrong three-speed hub; belt.

Except in size, this model is similar to that already described. Front and rear stands are fitted. The finish of these machines is exceedingly good.



New Torpedo sidecar with frame around the wheel. The special design of mudguard will be noted.

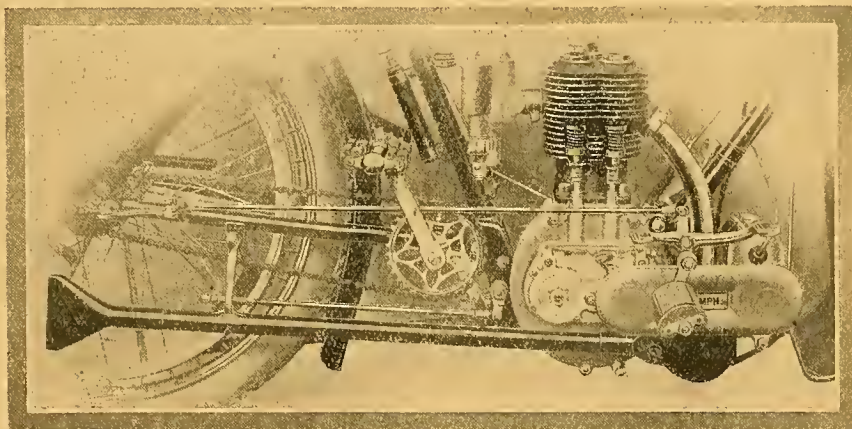
4½ h.p. MODEL: 89 × 96 mm.; S.S. B. and B. carburetter; Armstrong three-speed; belt.

This is essentially a sidecar model, and is shown with a Torpedo sidecar attached. The sidecar chassis has a dropped frame. The axle is supported on both sides, and the sidecar wheel is well protected. All the Torpedo machines are fitted with Precision engines, Druid forks, and Lycett or Empire-de-Luxe pan seats.

**TRIUMPH, No. 49.**

3½ h.p. MODELS (clutch, T.T., and three-speed): 85 × 88 mm.; side by side m.o.i.v.; belt.

TRIUMPH CYCLE CO., LTD., Coventry.  
—The Triumph stand is always a centre



New form of silencer on 1913 Triumphs. The only outlet is at the fishtail end of extension pipe.

of interest. At this year's Show there are six types of machines submitted for examination, all possessing the same type of power unit, viz., a 3½ h.p. engine of 85 × 88 mm., with interchangeable valves, which has now had such a long trial and has emerged triumphantly. All the different models are exquisitely finished. The three-speed machine possesses the most departures from previous Triumph practice. First and foremost, a change-speed gear has been adopted as standard for the first time. The one selected is the Sturmey-Archer, but it is controlled by a patented form of gear lever. This lever is much longer than the usual change-speed device on motor cycles, and is attached to the tank tube immediately behind the cylinder, where the ball head of the lever is conveniently placed for the rider's right hand. A ratchet and pawl device on the other side is neatly covered in to exclude wet and dirt, which would cause the gear to work stiffly. The change of speed is effected with the greatest of ease, and the ratchet prevents the possibility of one gear being accidentally slipped, which is a not infrequent occurrence with the ordinary type of lever. Other new features of the latest Triumphs are a new form of silencing arrangement in which the ordinary silencer is used as an expansion chamber, a long pipe extending behind the rear hub conveying the gases to the rear. A clock dial petrol gauge is now used, the advantage of which is that the rider may observe how much petrol there is in the tank as he rides along. The front mudguard is of en-

tirely new design. It is flattened out at the lower end, and on account of its width and special design, is found to be so efficient that the ordinary waterproof cover over the magneto has been dispensed with. On the clutch model the operating rod is connected almost at the top of the toe and heel pedal, which has the effect of gearing down the movement of the rod. Thus it will be gathered that a very gradual engagement for the clutch is possible. The foot brake rod is of flat section and arranged on the inner side of the engine pulley, whilst the pedal is much longer than formerly, giving a great deal more leverage. Minor improvements have been made to the engine. The adjustable tappets with en-

closed springs are retained, but one of the best points is the new leather washer on the crank case to prevent the escape of oil. The washer in question is held in position in the special recess of the crank case by a left-hand threaded nut. The washer itself being shaped in such a way that it tends to grip the engine-shaft. Plug fouling is said to be almost unknown with the new Triumph, the reason being ascribed to a modification of the design of the valve ports. As regards the carburetter, this now has a gauze cover over the extra air inlet, which is found greatly to economise petrol, besides excluding a certain amount of dust from being drawn into the engine. The magneto contact breaker is now controlled by a neat lever on the left handlebar on all models. A T.T. model with a hub plate clutch is a new departure, as also a simple decompressor. This machine, and the three-speeder, are the additions to the Triumph range.

**TRUMP-JAP, No. 40.**

3½ h.p. MODEL: 85 × 85 mm.; m.o.i.v., side by side; Senspray carburetter; belt; Sturmey-Archer three-speed gear.

TRUMP MOTORS, LTD., John Bright Street, Birmingham.—This machine was dealt with in our last issue, page 1329. It is a machine built on standard lines, fitted with Sturmey-Archer three-speed gear and kick starter, front mudguard with wide extensions, a wide tank with exceptionally large filler caps, and is altogether a sensible tonning mount.



**The Olympia Show.—**

3½ h.p. MODEL (twin-cylinder): 60 × 76 mm.; m.o.i.v., side by side; Amac carburetter; belt; Sturmey-Archer three-speed gear.

This machine strongly resembles the 3½ h.p. which we have just referred to.

6 h.p. MODEL: 76 × 85 mm.; m.o.i.v., side by side; Amac carburetter; belt; Sturmey-Archer three-speed gear.

This machine has Garrard-Maxfield sidecar fittings, and, in company with the other models referred to, has a specially strengthened head. A good feature of this machine is that the tool-bags are carried in metal frames attached to the carrier. The latter is provided with an additional stay, so as to give ample strength. Another feature is a special type of sidecar, the frame of which is underslung and fitted with a cane body.

**VICTORIA, No. 129.**

3½ h.p. MODEL: 85 × 88; side by side; B. and B. carburetter; belt.

VICTORIA MOTOR AND CYCLE CO., LTD., Dennistoun, Glasgow.—Victoria motor cycles are shown in different models. This make of machine is the only representative from Scotland. All have the different types of single-cylinder Precision engines, the 4½ h.p. machine with smart coach-built sidecar being the pick of an excellent array. There is nothing untried or experimental about the Victoria. It is on standard lines, with Druid forks, Bosch magneto, Dunlop tyres and belts, and Brooks saddles. It is built of substantial fittings, and is bound to give satisfaction. A choice of change-speeders or single-gear mounts is offered. The price, too, is an eye opener.

**WIN-PRECISION, No. 20.**

3½ h.p. T.T. MODEL and 3½ h.p. TOURING MODEL: 85 × 88 mm.; side by side m.o.i.v.; Armstrong gear.

WINGCYCLE TRADING CO., Great Saffron Hill, E.C.—The Win-Precision is a machine which follows standard lines and is built of the best material. On the stand is to be seen the 3½ h.p. machine used by W. J. Clarke on two unofficial long distance rides, one with and the other without a sidecar.

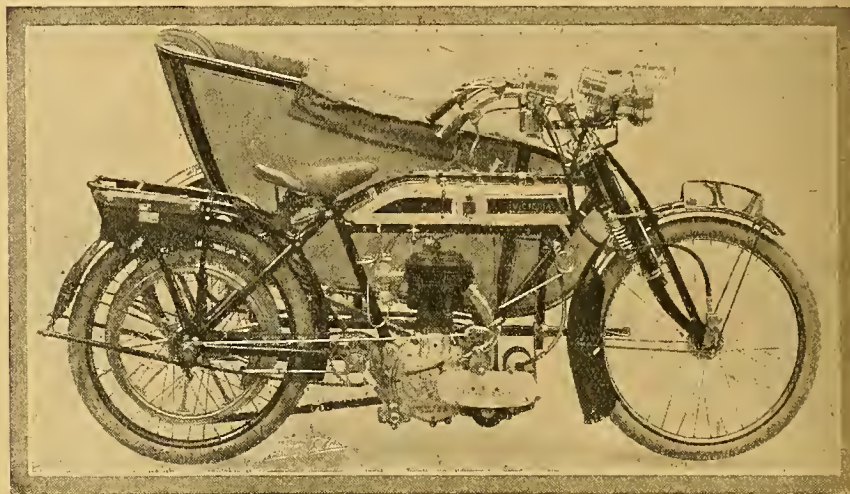
The folding sidecar, recently described on page 1338, November 21st, is shown fitted to a 4½ h.p. 90 × 96 machine with Roc two-speed gear.

All Win-Precision models are fitted with B. and B. carburetters and Druid spring forks. Another 3½ h.p. model is fitted with a Villiers two-speed gear in the rear hub.

**VELOCE AND WILTON, No. 123.**

3½ and 2½ h.p. MODELS: 85 × 88 mm. and 70 × 76 mm.; m.o. valves; B. and B. carburetter; belt; three speed and two-speed.

THE WILTON CYCLE AND MOTOR CO., Wilton Road, S.W.—The Wilton side-



Victoria-Precision sidecar outfit—the only Scottish representative in the Show.

**WILLIAMSON, No. 81.**

8 h.p. MODEL: 85 × 85 mm.; side by side valves; Amac carburetter; chain; Douglas two-speed countershaft gear.

THE WILLIAMSON MOTOR CO., Coventry.—These machines are shown in two forms—air-cooled and water-cooled. The engine is the now well-known Douglas 8 h.p. horizontally opposed twin. The two-speed gear is controlled by a lever attached to the top tube; the rear hand brake by a pedal for the right foot. The greater part of the frame is double. The Douglas adaptation of the Druid fork is fitted. The front mudguards should prove very effective. From the fork towards the front the side flaps lie in the plane of the wheel, but from the forks downwards they are turned out at right angles. The footboards are attached to extensions of the frame itself and not to crosspieces bolted on. The chain drive

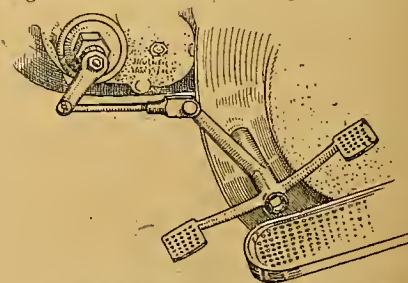
is softened by a spring device in the back hub. The silencer consists of a long tube extending rearwards and flattened at the end. The Bosch magneto is controlled from the handle-bars. Large hinged filler caps are fitted, having glass tops. The saddle is Lycett's Le Grand. The machine is finished in black, the tank and chain guards being grey in colour.

cars are shown, in which the design enables the car to be secured to the frame at all points, and the fittings are such that by a single nut all the fixings at the back can be detached. The axle is dropped. Matchless, Clyno, and Veloce machines are displayed. The Veloce is made in two models—3½ and 2½ h.p. The machine depends upon belt transmission, while three speeds are available through the medium of an Armstrong hub gear. It is in the 2½ h.p. machine, however, that the chief features lie. In the engine of this machine the valves are placed in front, and, unlike its larger brother, the inlet is above the exhaust, and worked by an adjustable tappet. Lubrication is carried out automatically by means of a pump operated by rotary gear off the gear-shaft. The two-speed gear is contained within the crank case casting. An outside flywheel is adopted.

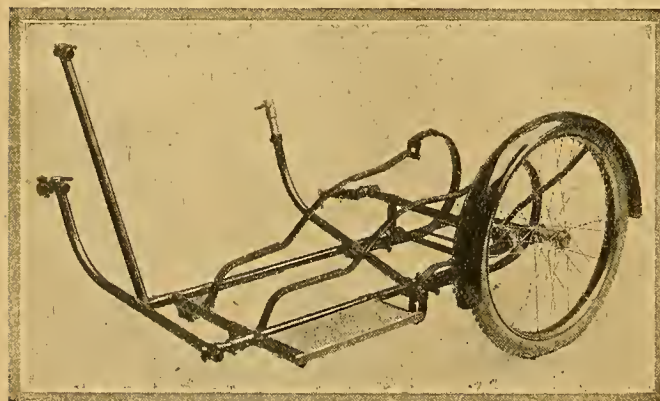
**WULFRUNA, No. 35.**

6 h.p. MODEL: 76 × 85 mm.; m.o.i.v.; Amac carburetter; chain.

WULFRUNA ENG. CO., LTD., Wolverhampton.—This is a serviceable machine designed for sidecar work. It is provided with



Toe and heel pedal controlling clutch of the G.H. gear on the twin Wulfruna sidecar machine.



Trump four-point suspension sidecar chassis.



**The Olympia Show.**

two-speed conpler-shaft gear. The change-speed lever is on the top tube, and the clutch pedal is on the right hand side of the gear box. The lubrication is by pump, and a petrol tank of large capacity is fitted. A special sidecar is shown attached to this machine. The weight of the machine solo is 240 lbs.

3½ h.p. MODEL: 84 × 89 mm.; side by side m.o.i.v.; B. and B. carburetter; chain; two-speed counter-shaft gear.

This model is similar in detail to the 6 h.p. just described, except that it is of smaller h.p., since a similar type gear and transmission are fitted. A machine of the same h.p. is the 3½ T.T., but this is provided with belt transmission and dropped handle-bars.

2½ h.p. MODEL: 77 × 81 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; Armstrong three-speed gear.

This machine is fitted with sloping footboards, carries the magneto behind the cylinder, and is provided with a special bracket for the back brake spindle which is brazed to the back forks. This feature is to be found on all models. This model, in conjunction with the other types, is provided with Armstrong gear and a starting device which can be operated either by the hand or foot; also worthy of mention is the fact that a special filter is provided at the petrol pipe union.

2½ h.p. MODEL: 76 × 65 mm.; overhead inlet valve; Senspray carburetter; Armstrong gear.

This model is provided with an engine of a totally different type from the others. The magneto, which is gear driven, is neatly carried on a platform behind the cylinders, and the design of the two-to-one gear casing is particularly neat. Footboards, kick or hand starting device, and Armstrong three-speed gear are fitted.

2½ h.p. MODEL: 65 × 70 mm.; side by side m.o.i.v.; B. and B. carburetter; belt; single gear.

This model is the smallest shown by the Wulfruna Engineering Co. The magneto is chain-driven and carried behind the engine. All models are provided with Druid spring forks and have side shields to the front mudguard.

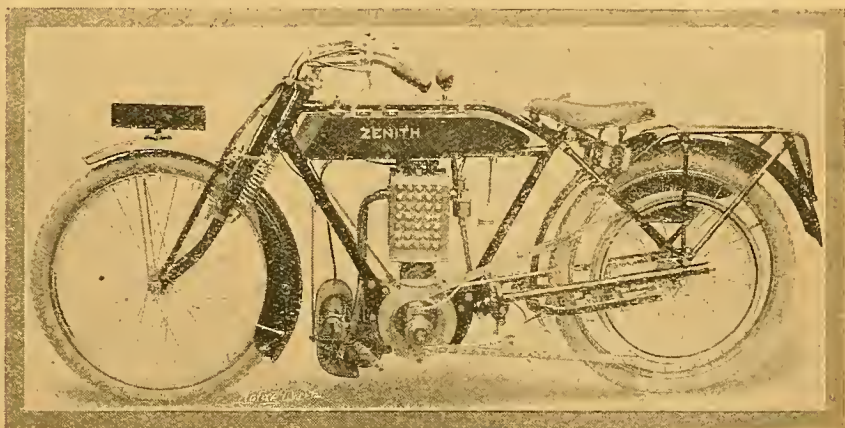
With so many standard machines there is no lack of variety on this stand.

**ZENITH, No. 112.**

4 h.p. MODEL: 85 × 88 mm.; 6 h.p. twin. 76 × 85 mm.; 3½ h.p., 90 × 77.5 mm.; 2½ h.p., 85 × 60 mm.; all side valves, except racing—racing, overhead; B. and B. and Amac carburetter; all Gradua gear.

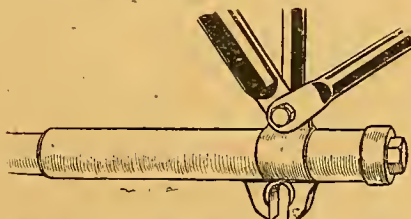
ZENITH MOTORS, LTD., Weybridge.—On the Zenith stand there are the following models: The Zenith Green, with

*The Motor Cycle.* The features of the latest Zenith designs may best be seen in the clutch model. The tank has been re-designed with corners rounded off, and is now carried on table lugs underneath, obviating the necessity for attachments to the top tube. A very useful detail, too, is seen on the combined sump and strainer placed at the bottom of the petrol tank. This is combined with the petrol tap.



A new model. The water-cooled Green-Precision engine on a Zenith Gradua.

water-cooled Green engine; the clutch model, fitted with kick starter, designed to give free engine on any ratio of the Gradua gear with which it is fitted; the standard 6 h.p., fitted with long separate plated exhaust pipes to each of its two



Rear fork end of the Zenith to enable the wheel to be readily detached.

cylinders, and cut-out at the rear in the back axle; the 3½ h.p. overhead valve racing model; racing models with single and twin cylinders, having overhead valves, the powers being respectively 2½ h.p. and 3½ h.p. for the singles, and 8 h.p. for the twins. All the machines are fitted with the special lug in front to take a sidecar, as already described in

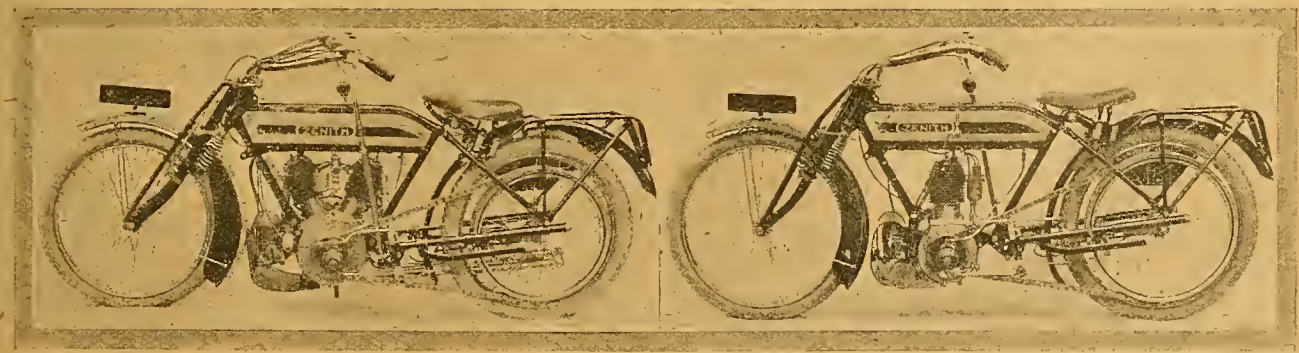
Another very distinctive feature is the wide shield which protects the magneto and is carried outwards, also to protect the gear. This, it is claimed, has proved more effective than wide front guards, as, among other things, the engine is left far more open to air cooling.

Attention should be given to the careful side-guarding of the wheels, the mudguards of which are provided with slide wings. The wing on the right of the back wheel being especially wide.

The Zenith stand is a most distinctive feature, and merely consists of two legs swinging on a pivot-shaft passing through a tube bracing the bottom back wheel stays together. In this position the machine on the stand is balanced so that the slightest pressure at the rear end will lift the front wheel from the ground, and the whole design is simplicity itself. Another point to notice is the easy detachability of the back wheel from the frame.

**SPEEDWELL MFG. Co., No. 124a.**

SPEEDWELL MFG. Co., Abbey Works, Alcester.—This firm makes a speciality of conversions from single to three speeds with Armstrong hub gears. Examples



Examples of the 3½ h.p. and 6 h.p. Zeniths. Both models have J.A.P. engines and the Gradua gear.



## The Olympia Show.—



1913 pattern Scott. The tank has a leather covering. Observe the encased gear.

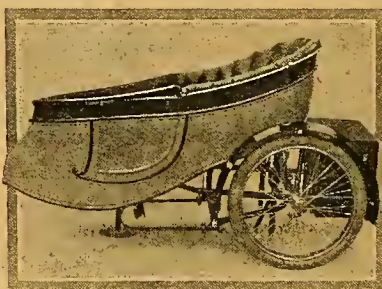
Ladies' three-speed Hobart, a clean design with vertical engine.

of machines so converted are on view, and complete back wheel sets, suitable for Triumph, Rudge, and other machines, are exhibited complete with the hub and control, which can be either by pedal or Bowden cable and hand lever.

**THE SERVICE CO., No. 17.**

SERVICE Co., High Holborn, W.C. (No. 17).—Another interesting attachment is the Carrol sidecar. In this sidecar the rear wheel is carried on a small additional frame hinged upon the rear tube and connected thereto by a coil spring. It also slides on this tube to a limited extent, and consequently has a sort of radial castor action. At the front of the foot-board there is a chamber which is connected by flexible pipe to the exhaust pipe of the motor bicycle, and acts as a foot warmer for passenger. The body is

held to the frame by a spring bolt. If this bolt be disengaged the whole of the mudguard can be swung round to act as



Montgomery "Man of War" type sidecar body with cantilever springs.

a stand. The Brown and Hingston two-speed gear is also exhibited. This has been improved in detail, and will be referred to later.

Service accessories are dealt with on a later page.



Vevo folding foot pump.

comfortably light, well upholstered, and provides ample leg room. Another feature is a quickly detachable sidecar fitting which is a decided departure from standard practice. The Service sidecar is provided with a particularly strong hub, and the main mudguard stay is

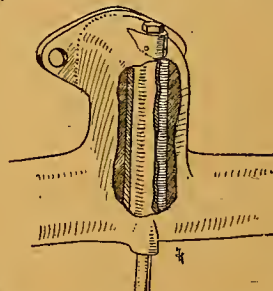
**TAYLOR AND CO., No. 166.**

H. TAYLOR AND Co., 21a, Store Street, Tottenham Court Road, W.C.—The Douglas, Rex, Rudge, and A.J.S. machines (for which last named make the firm are the sole agents) are exhibited on this stand, and some interesting examples of sidecars are also displayed. One of the

features is a coach-built sidecar body, beautifully constructed with sheet steel panels, and with a compartment at the back for the spare tyre. This has been designed especially for the 5-6 h.p. A.J.S. sidecar machine.

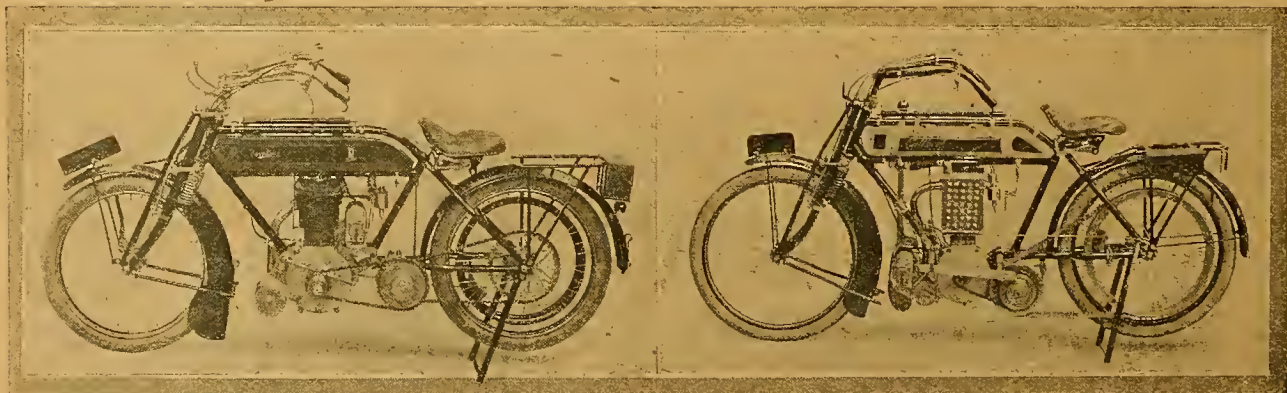
**A VARIED EXHIBIT.**

WAUCHOPES, LTD., 9, Shoe Lane, E.C.—Some of the best known makes of motor bicycles are shown here, such as the Matchless, Chater-Lea, Triumph, Williamson air-cooled, Humber, Douglas, and Premier, for which the firm are agents.



Warming pipe from the exhaust inside the induction pipe on the Williamson.

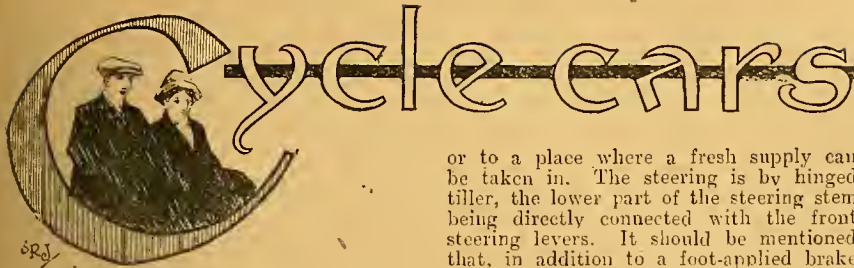
Messrs. Wauchopes make a speciality of dealing with all makes of new and second-hand motor bicycles, and have had a long experience in this branch of the business.



6 h.p. Excelsior, with counter-shaft gear and chain drive.

A Calthorpe fitted with the Green-Precision engine, counter-shaft gear, and combined transmission.

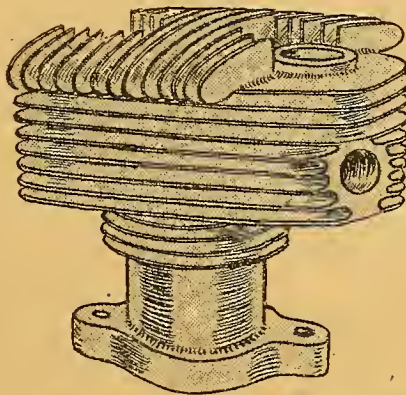


**A.C., No. 60.**

5.6 h.p. MODEL: 95×102 mm.; m.o.v.; cooling air; B. and B. carburetter; chain; epicyclic two-speed gear; single-cylinder engine; wheelbase, 6ft. 2in.; track, 4ft. 6in.; weight, 560 lbs. (chassis); seats, side by side.

**AUTO-CARRIERS (1911), LTD.,** Thames Ditton, Surrey. — The Auto-Carrier machine is now so well known on the road that a detailed description is unnecessary. However, for the benefit of those who have not a practical acquaintance with the machine, it might be briefly described as a runabout, capable of doing as much as and more than many four-wheeled vehicles. The passenger and driver are seated side by side, while the engine is situated behind the seats. The engine is of the single-cylinder vertical type, air-cooled, with two large flywheels on each side of the crank case, air vanes being cast on the flywheels to act as fans. The drive is from a small sprocket on the left-hand side of the crank case to a sprocket on the rear wheel axle. The rear axle is supported on leaf springs, and carries an epicyclic gear. The low speed engagement is brought into operation by the depression of a pedal by the right foot, while the engagement for the direct drive is brought about by pressing forward a vertical lever, this locks together the whole of the epicyclic gear, which thus revolves as one mass. With reference to the petrol supply tank on this vehicle, a rather novel feature is embodied. The filler cap carries a hollow tube screwed at its lower end and drilled with a hole about an inch up. The feed to the carburetter is in the normal way through this hollow, but in case the vehicle stops for want of petrol it is only necessary to unscrew the filler cap, and it is found that there is a reserve of petrol about the depth of the hole from the bottom of the screwed stem which serves to get the passenger either home

or to a place where a fresh supply can be taken in. The steering is by hinged tiller, the lower part of the steering stem being directly connected with the front steering levers. It should be mentioned that, in addition to a foot-applied brake which can be notched up automatically to any given degree of pressure and released instantaneously, there is a pair of front wheel bands to operate on the front hubs. This brake is applied by pulling back the same lever, which when pushed forward gives the direct top speed drive. The bands of the foot and hand brake are lined with Ferodo. The frame is tubular built, and is supported at the front on semi-elliptical springs and at the rear on inverted quarter elliptical springs. On the two-seated vehicle staged a very easily raised and lowered hood is fitted, whilst the storm apron, or dash, is hinged at its



Design of cylinder on the A.C. from which the large radiating surface will be noticed.

lower forward end, and carries at the upper end a hinged wind screen which can be adapted to any angle. This is not only an efficient waterproof guard, but entrance to the front is made particularly easy. There are other models staged — a two-seater which carries a dickey seat behind for a third passenger, and also luggage carrying models suitable for various trades. It is interesting to note that there are some 1700 of these vehicles now on the road, and the output at the works is about twenty-five per week. The wire wheels carry 650 × 65 mm. tyres to the front, and the single rear wheel 700 × 75 mm.

**ALLDAYS, No. 106.**

**MIDGET MODEL:** V twin-cylinder; 85 × 88 mm.; air-cooled; m.o. valves; worm drive; three-speed gear; wheelbase, 9ft.; track, 4ft. 2in.; weight, 6 cwt.; position of seats, side by side

**ALLDAYS AND OXONS, LTD.,** Fallows Road, Sparkbrook, Birmingham. — On this stand two vehicles are exhibited, one the Alldays Midget and the other the Expressodel. The former is a four-wheeler and the latter a three-wheeler. The Midget car has a twin-cylinder air-cooled engine, the drive from

this being through a cone clutch and a three-speed and reverse gear box, thence through a universal joint at the forward end of the propeller-shaft to the worm-driven rear axle. The propeller-shaft is enclosed.

The main frame is tubular, and the springing thereof is by means of inverted elliptic springs centrally pivoted at the front and similar springs at the rear. Both foot and hand brakes act upon the rear wheel hubs, the hand brake being of the contracting band type lined with Ferodo, and the foot brake internal expanding metal-to-metal. 650 × 65 mm. tyres are fitted to the road wheels, which are wire built. The front axle is an "I" section steel stamping. The steering is of the worm and sector type. The vehicle is shown with lamps, wind screen, and hood, and presents a good appearance.

**8 h.p. MODEL:** 108×114 mm.; water-cooled; m.o. valves; carburetter to order; chain; three-speeds; wheelbase, 4ft. 6in.; seats side by side.

The "Expressodel" is shown with a luggage-carrying box forward of the steering wheel and seat accommodation for a passenger beside the driver. The frame is of channel steel. The two front wheels, which are steered by a worm and quadrant, have axle pins swivelling in the open-jawed ends of the tubular front axle. Semi-elliptic springs of good length and camber are fitted to support the front end of the frame, whilst inverted semi-elliptic springs are arranged between the rear of the frame and the rear axle, the spring being pivoted at the centre. The engine is situated beneath the driver's seat, this latter can be tipped forward on a hinge so that it renders the engine quite accessible. The engine is of the single-cylinder water-cooled type set transversely on the frame. The cone clutch transmits the power to a three-speed gear box, from the gear-shaft of the latter through a chain to a large chain wheel to the rear axle. A chain case is provided to afford proper protection from dust and mud. The radiators for cooling are of the vertical gilled tube type, and are placed on each side of the driver's seat.

Attention should also be paid to the lever and rod arrangement provided for keeping the rear axle parallel with the frame. This vehicle is most handy for rapid delivery of parcels, and has a carrying capacity of 5 cwt.

**ARDEN, No. 27.**

**8 h.p. MODEL:** 85 × 85 mm.; mechanical valves; two-cylinder V type, air-cooled; J.A.P. carburetter; gear and propeller-shaft transmission; three-speed gear; wheelbase, 7ft.; track, 3ft. 8in.; seats side by side; weight of chassis, 5½ cwt.; finished vehicle, 6½ cwt

**THE ARDEN MOTOR CO., LTD.,** Berks-well, near Coventry. — This vehicle, shown in chassis form and as a finished car, presents a very good appearance, and is practically a small edition of an ordinary touring motor car. The V type engine is cooled by means of a fan situated in front, the bearings of the fan being carried in spring-controlled hinged brackets so that the rear end of the fan drive



A thickly upholstered back rest is provided on the A.C. Sociable, under which are arranged pouches for tools.



**The Olympia Show.**

shaft which carries a friction wheel is kept in contact with the flywheel. The magneto is mounted on a stand above and central with the two cylinders, and is chain driven. A standard J.A.P. automatic carburettor is fitted. The drive is through a leather-to-metal cone clutch to the three-speed gear box, the top speed being direct. The gear is actuated by means of a hand lever working over a straight-cut quadrant. The propeller-shaft is enclosed, and drives the rear axle through a pair of bevels. The frame is of wood reinforced with steel flitch plates, the frame being mounted at the front on three-quarter elliptic springs and at the back on a special form of quarter-elliptic spring, the rear end and plates of this being carried in a slide lock arrangement. The axle spring flaps are distanced by means of radius rods. 28in.  $\times$  2 $\frac{1}{2}$ in. wire-built wheels are fitted. The steering is of the direct acting lever type. The control of carburettor throttle, extra air, and ignition timing is by means of levers placed on the steering stem and on the spoke of the steering wheel, the motion being transmitted by means of Bowden wires. The foot and hand brake take effect on the rear wheel brake drums, the foot brake being internal expanding metal-to-metal, while the hand brake is of the contracting band type lined with Raybestos. The petrol and oil tanks are carried beneath the torpedo dash. The oil feed to the engine is automatic. The finished vehicle presents a smart appearance, fitted as it is with single hinged wind screen, Cape hood, luggage carrying locker behind, and acetylene head lamps with separate generator.

**AUTOTRIX, No. 47.**

8 h.p. J.A.P. and 5-6 h.p. Fairair Models: 85 $\times$ 85 and 70 $\times$ 80 mm.; m.o.v.; twin-cylinder water-cooled V type engine; Senspray carburettor; two speeds; gears and chain; side by side; wheelbase, 7ft.; track, 4ft. 3in.

EDMUNDS, WADDEN, AND Co., Weybridge.—In this model the twin-cylinder water-cooled engine transmits the drive from the crankshaft, which is furnished with a small self-contained clutch, to the gear box, which gives two speeds, and thence by means of a single chain to the single rear wheel. The gear is operated by a lever working over a straight-cut quadrant. There is a small crescent-shaped vertical tube radiator in front.

The magneto is chain driven, and is carried forward of the engine. The crank case is in an accessible though unobtrusive position. The main frame is of tubes suitably strutted and braced where necessary. The steering is of the plain hobbin and cable type. The road wheels are wire built, the front carrying 6 $\frac{1}{2}$ 0 $\times$ 65 tyres and the rear 700 $\times$ 85. The frame is sprung by semi-elliptic springs at the front and by a pair of quarter inverted elliptic springs at the rear. One of the models shown is fully equipped with wind screen, Cape hood, speedometer, and everything necessary for the road. We would point out that the body work of the seats is of very narrow size from front to back—a small matter which might be easily remedied with advantage to the user.

**BEDELIA, No. 23.**

8-10 h.p. Model: 80 $\times$ 100 mm.; exhaust mechanical inlet automatic valves; twin V air-cooled engine, 90°; G. and A. carburettor; chain and side belts; slipping belt with low emergency pulley; one model expanding and contracting pulley on counter-shaft; wheelbase, 8ft. 6in.; track, 3ft.; weight, 400 lbs. complete; tandem seats.

PALMER AND Co., Tooting, S.W.—The models on this stand are fitted with boat-shaped bodies, and present a very racy appearance with torpedo dash, and curved back and body made up of aluminium and wood. The 90° V-type air-cooled engine is placed transversely in the frame. The ignition is by Nilmelior alterno magneto. The drive from the crankshaft is by means of a roller chain to a chain wheel on the counter-shaft. The counter-shaft ends have twin pulleys, one size being larger than the other. On one model there is an expanding pulley, the decrease in size being brought about by increasing the belt tension.

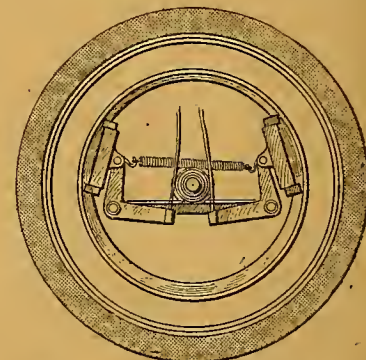
The side lever is so arranged that as the belt sags on pulling the rear axle forward bodily and the hand brake is applied, since the belt rims come into contact with fixed shoes. The other brake is applied by means of a pedal, the first depression lifting the exhaust valves of the engine and further depression applying a metal band brake on the drum secured to the counter-shaft. The front axle is tubular, centrally pivoted with the spindle acting on a coiled spring contained in the barrel. Suspension is thus three-point. The

steering is by means of duplicate wire cables which are wound on a wooden hobbin under the action of the steering wheel, which is wire built. The road wheels are wire built and fitted with 26 $\times$ 2 $\frac{1}{2}$  tyres. The rear suspension of the chassis is by means of inverted quarter elliptic springs. With regard to the seating of the body, this is of the hammock type for the front and rear passenger.

**CHATER-LEA, No. 78.**

8 h.p. Model: 85 $\times$ 85 mm.; m.o.v.; V type; air and water-cooled; Amac carburettor; gear and worm; three speeds; gate change; wheelbase, 7ft. 6in.; track, 3ft. 10in.; two seats side by side.

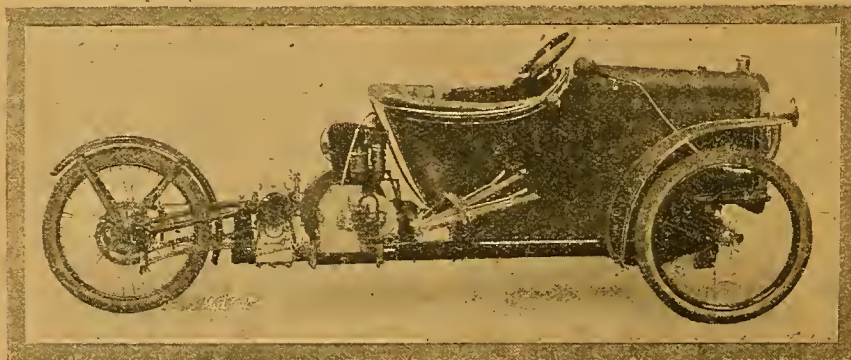
CHATER-LEA, LTD., Golden Lane, E.C. —The fittings supplied to the trade by this well-known firm have an excellent reputation, and in the cyclecar chassis exhibited the high quality of the design, con-



Double acting belt rim brake on the Day-Leeds cyclecar.

struction, and material which is put into the parts which go to make up the chassis is clearly apparent. One of the chassis has an air-cooled 8 h.p. V type engine, 85 $\times$ 85, whilst the other has an 8 h.p. water-cooled engine of similar dimensions. Dealing with the first chassis, this has a leather-to-metal cone clutch to transmit the power for the engine, the clutch being engaged by the action of the compression spiral springs. The power is transmitted to a three-speed gear box, actuating an enclosed propeller-shaft by a gate change lever to the worm-driven rear axle. Top gear ratio is 4 $\frac{1}{2}$  to 1. The brakes are arranged so that the hand brake acts upon the rear wheel brake drums, whilst the foot brake (which is of the contracting type, is applied to the drum behind the gear box. The chassis has a pressed steel frame inswept at the front to give a large steering lock, whilst tubular cross members carry the braking, tackling, and the gear box. The frame is supported by semi-elliptic springs at the rear which take the drive, and no torque rod is fitted to the back axle. Wire wheels are fitted with 650 $\times$ 65 mm. tyres.

With regard to the water-cooled model, the front of the bonnet is closed by a V-shaped radiator having an open centre, and with this it presents a remarkably pleasing appearance. A special point to notice is the large clearance from the ground, which renders it suitable for colonial work.



The Craig three-wheeler. The engine cover has been removed to show position of engine and gear box.



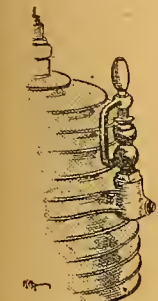
## The Olympia Show.—

## DAY-LEEDS, No. 95.

8.9 h.p. MODEL: 85 × 88 mm.; V type 60° air-cooled m.o.i.v.; carburetter to order; gear: counter-shaft and side belts; sliding gear; three speeds; wheelbase, 6ft. 6in.; track, 3ft. 9in.; weight of chassis, 4½ cwt.; total weight, 5½ cwt.; side by side seats.

JOB DAY AND SONS, LTD., Ellerby Lane, Leeds. This vehicle was briefly described and an illustration of it complete was given in *The Motor Cycle* of the 14th inst., page 1301. The V type air-cooled engine is set in the frame with the crankshaft longitudinal therewith. The fibre-faced cone clutch transmits the engine power to a three-speed gear box giving direct drive on the top gear. The gears in turn pass the power to a bevel-driven counter-shaft with combined straight pinion differential. The ends of the counter-shaft have pulleys to take 1in. V belts, which drive the rear wheels. Chain sprockets instead of the belts can

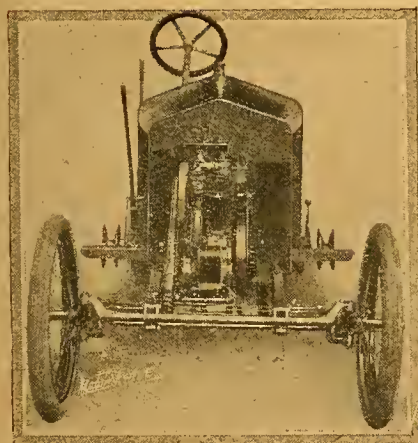
be specified if desired. It should be specially noted that particular attention has been directed to the production of a machine which should prove very free from frictional resistance, since the whole of the bearings—less those of the engine—are of the self-aligning double row type, Skefco pattern. The tubular frame is well sprung on semi-elliptic plate springs of fairly large compass.



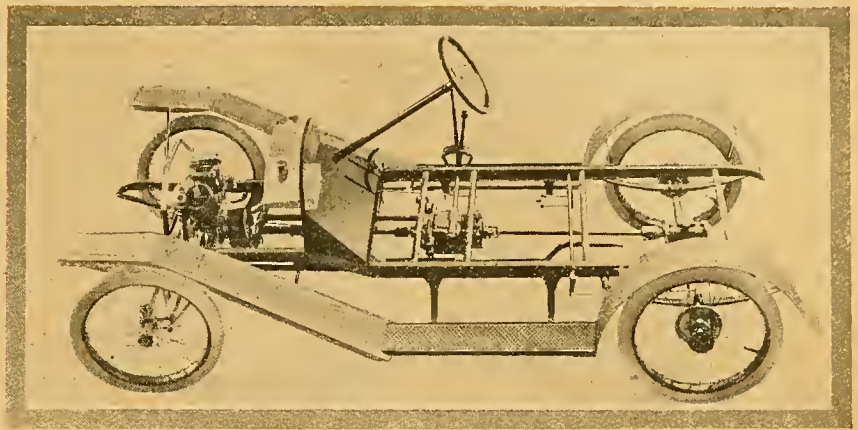
The twin Motosacoche has a half compression tap fitted half way down the cylinder.

Both sets of brakes act upon the rear wheel brake drums. Special attention has been directed to engine lubrication, the lubricators being foot operated. The road wheels are detachable and interchangeable throughout, and arrangements are made for carrying a spare wheel. 650 × 65 mm. tyres are fitted. The petrol tank holds two and a half gallons and a half gallon of lubricant.

A refinement is the fitting of a starting arrangement to enable the driver to start the engine from the seat without using the starting handle. Generally speaking, this model is well produced.



Front view of the 8 h.p. Duo.



Chassis of the Chater-Lea cyclecar with 8 h.p. air-cooled engine.

## DUO, No. 53.

8 h.p. MODEL: 85 × 85 mm.; mechanical valves; V type engine, air-cooled; Lukin carburetter; single chain to counter-shaft and two side belts; expanding pulley; variable gear; wheelbase, 7ft.; track, 3ft. 4in.

DUOCARS, LTD., York Street, Westminster, S.W.—This vehicle is noticeable for being fitted with a framework made entirely of timber, having two fairly lengthy longitudinal members forming an inner frame and two outer main frame members, whilst there are five transverse bars for staying the longitudinal members together, and carrying the engine and various fittings, such as counter-shaft, brackets, and springs. The engine is set in line with the frame, and power is transmitted by a single roller chain from a sprocket on the left-hand side of the crankshaft to a sprocket fixed to the counter-shaft. At the end of the counter-shaft are expanding pulleys, which are contracted or expanded by the action of a quick thread boss, so that as the pulley flange is moved outward the effective driving diameter is increased, thus raising the gear ratio. From the counter-shaft the final drive is by belt. To take up slack or allow for the tightening up of the belt on the alteration of the effective diameter of the counter-shaft pulleys, there is a hand lever arranged at the right-hand side of the driver's seat, which operates suspension links which serve to push back or pull forward the rear wheel. Two brakes are fitted, one acting inside and the other outside the belt rim. The latter comes into action when the rear wheel is slid back to its fullest extent. The steering is of the thimble and wire type, the wires being arranged in duplicate. They are fitted with springs at their ends, so as to absorb road shocks and ease the strain on the wires. The front axle is tubular, carrying open steering jaws at its outer ends, whilst a special arrangement of swivelling half-elliptic springs are fitted to each side at the rear. The road wheels are wire-built, and fitted with 650 × 65 mm. tyres. The petrol tank is arranged in bonnet form, forming the upper part of the hollow dash. The lubrication is by a

hand-operated pump, the oil tank being carried on a board which forms the front of the driver's seat. It should be noted that for cooling the engine a cast aluminium fan, belt-driven, is fitted on the right-hand side of the engine. Although the design is unconventional as regards frame, springing, and other minor points, it presents a workmanlike appearance.

## ERIC, No. 45.

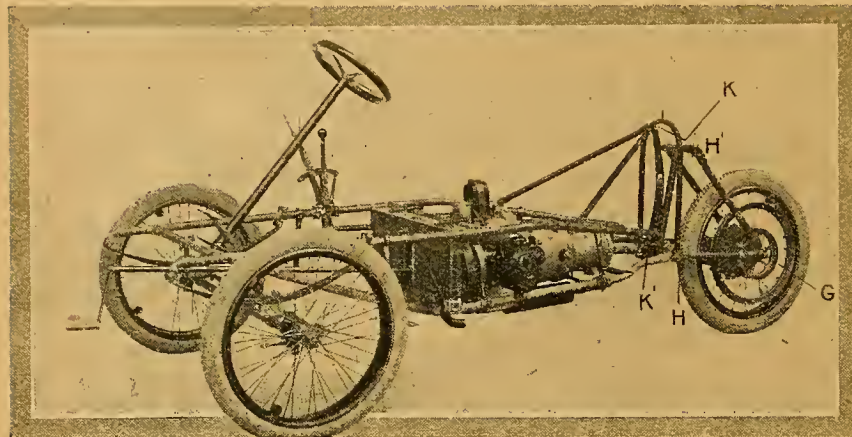
Mechanical valves; Amac carburetter; gear on propeller-shaft; twin opposed water-cooled engine; three-speed gear, gate change; two seater, side by side.

P. AND C. SYNDICATE, LTD., St. Giles' Chambers, Northampton.—This three-wheeled machine has a dummy front bonnet and radiator. It was fully described and illustrated last week on page 1347. The twin horizontal opposed engine and the gear box form one unit. The power is transmitted through clutch and three-speed gear to the bevel-driven single rear wheel. The radiator is of the tubular type, and is carried beneath the seat. Provision is made for attention to the high tension magneto by the removal of a slide at the centre of the passenger's cushion. One of the vehicles shown is complete with lamps, hood, and wind screen. An additional model to the one described last week has a vertical single-cylinder air-cooled engine. In this the crank case is supported on the large tubular centre member, which is practically the main frame of the machine. Mechanical transmission is used, and an Amac carburetter is fitted. A large flywheel on the right hand of the engine drives a large aluminium cast fan. The drive is from the clutchshaft to the gear box by means of a roller chain, the gear box giving three speeds, these being operated by a gate change lever arranged outside the body. On the other side of the gear box the drive is continued by means of a roller chain to the rear wheel. A foot-operated expanding metal-to-metal brake is arranged to act on the drum on the right hand side of the gear box, while a hand applied brake operates upon the rear drum. In this case the rear wheel is sprung by quarter inverted elliptic springs, while the front axle is sprung by means of semi-elliptical springs. The



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steering is by a chain running over a sprocket at the bottom of the steering stem, the chain being connected to cables which transmit the motion to the steering lever.



ERIC SOCIABLE CHASSIS.

G. Bolt to be removed to render back wheel accessible. H.H.I. Hinges on which near side back fork and chain stay turn aside when nut G is removed. K. Fixing point of rear spring to pivot of triangular back wheel support. K. Fixing point of spring to rigid portion of frame.

### GIRLING, No. 110.

5 h.p. MODEL: 95 × 95 mm. = 650 c.c.; mechanical valves; wheelbase, 7ft.; track, 4ft. 8in.; weight, 6 cwt.

GIRLING MOTORS, LTD., Finsbury Circus, E.C.—The Girling utility car is intended to be used by inspectors, surveyors, and commercial travellers. The speed is up to about 30 m.p.h. It is made intensely strong, and will carry an extra passenger, or there is room for a quantity of luggage. It possesses many interesting mechanical features. In the first place, the engine is air-cooled, and practically the whole of the cylinder is enclosed in an aluminium casing, formed in two halves. On one side is an enclosed fan, driven off the flywheel by friction. The friction wheel is kept up against the rim of the flywheel by means of a screw. The fan draws air across the radiating fins on the valve box round the sparking plug and over the top of the

head are exposed to view, and can be cleaned without any further dismantling of the engine.

The valve operating mechanism resembles that employed on the Lanchester car. The valve springs are flat, and are connected up to the cotters by means of wire links. The oil filler cap on the base chamber carries the relief valve, which is merely a flat strip of brass, anchored at one end and covering a large hole. It works admirably, we were told.

Lubrication is effected by two plunger pumps operated by the valve cams. The pumps fill with oil the small sump, out of which they project, lubricating the small pinion of the 2 to 1 gear, the large pinion, and also the cams; at the same time the oil is fed into the big end trough, and then overflows into the main sump and back through gauze filters to the pumps.

The change speed is by friction disc and wheel, the bearing adjacent to the

friction wheel being both a thrust and load bearing, thus taking up the thrust of the friction disc. All bearings are Skefko, self-aligning. Gas is fed to the engine by means of a single lever control carburetter. The control of the friction disc is by pedal, on which the driver's foot lightly rests the whole time. In this Mr. Girling claims the success of his system lies, since the pressure can be varied according to the gear ratio in use. When the highest gear ratio is in use, very light pressure is needed, more pressure being required on the lower of the five speeds provided. A second pedal is used for declutching, a further movement of which brings the friction-driven shaft up against a fixed shoe brake.

The final drive is by propeller-shaft to a bevel gear at the rear. A sliding joint is provided at the forward end of this shaft, while the whole thereof is enclosed in a torque tube provided with a U joint at its forward end. To remove the rear wheel it is only necessary to swing outwards the rear spring, and undo the nuts which secure it to the bolts situated at intervals round the hub shell, when the wheel can be drawn out.

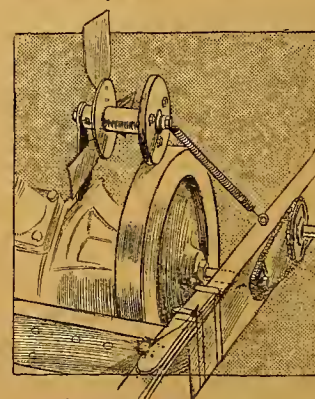
In the bevel gear case an internal expanding brake is fitted.

The frame is of oak, 7in. deep by 1½in. wide, suitably strengthened where necessary. A metal frame bolted thereto supports the friction disc shaft on two ball bearings.

### G.N., No. 31.

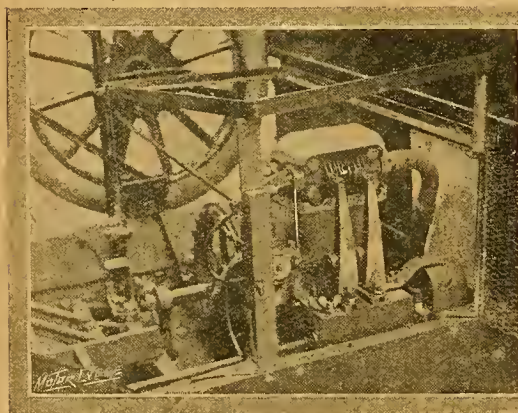
8-10 h.p. MODEL: 80 × 98 mm.; mechanical valves; V-type engine, air-cooled, round barrel; chains to counter-shafts, final side belts; two-speed, straight quadrant; wheelbase, 8ft.; track, 3ft. 6in.; weight, chassis 3½ cwt.; side by side seats.

GODFREY AND NASH, The Burroughes, Hendon, N.W.—This model has the engine placed longitudinally in the frame. A large outside flywheel drives a three-blade

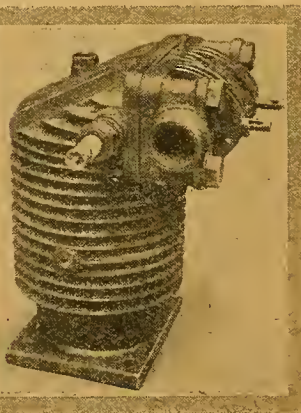


Friction-driven fan on the G.N.

fan by a pulley on the left-hand of the engine between the cylinders. The drive is from a chain wheel at the inner side of the flywheel to a counter-shaft carrying a plate leather-faced clutch engaged by four toggle levers and actuated by a strong compression spring. On each side of the clutch the drive is further transferred by a roller chain to chain wheels on another counter-shaft. These



Girling cyclecar engine, showing the laminated valve springs, etc.



Cylinder, showing easily detachable valve box.

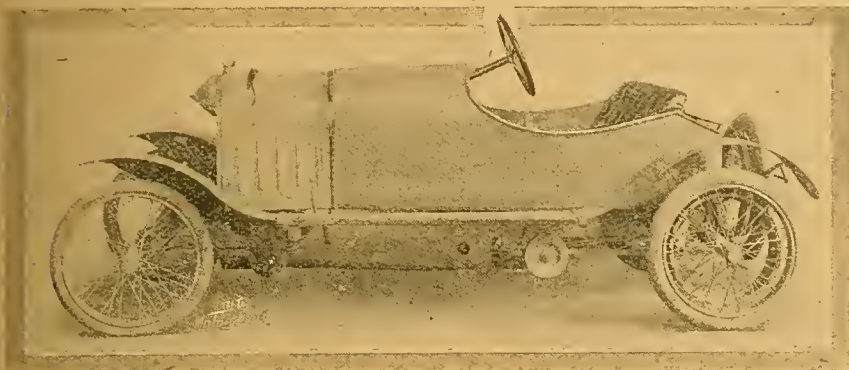


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chain wheels can be locked to the counter-shaft by means of a sliding sleeve, which carries two pegs at its extremities. These pegs can be brought into holes in the chain wheels, so the drive is turned to either end of the counter-shaft from which belts transfer the final drive to the

being by means of a roller chain through a three-speed gear box, whence the power is transmitted by a single chain to the rear axle. A hand applied brake takes effect on two drums on the rear axle, whilst the foot brake acts upon a drum on the left hand side of the gear box. The frame is tubular supported on quarter

twin-cylinder water-cooled engine is specially made for this firm by the Coventry Simplex Engine Co., and is arranged a little behind the centre of the frame beneath the boot and slightly behind the passenger's seat. The engine is set transversely in the frame, and a large friction surface flywheel is arranged



The racy looking G.N. runabout shown by G. N. Higgs.

rear wheels. The engagement on the right-hand side chain wheel gives the low speed and on the left-hand side the top speed. A pedal and hand-applied lever bring into action two brake shoes on the inner surface of the belt pulleys. The frame is of wood, the engine being carried on wooden cross members, and the support for the counter-shaft is also of the same material. The steering is by wheel and twin cables actuated by a metal bobbin. The front suspension is by quarter elliptic springs. The petrol tank is circular and carried in a wooden thimble at the rear end attached to the dash and by a clip formed by two angular pillars at the front. The tyres, on wire wheels, are 650 x 65 mm.

**GORDON, No. 33.**

85 x 95 mm.; cooling air; m.o. valves; Senspray carburetter; chains and gear; three speeds; engine, V type J.A.P. 90°; wheelbase, 7ft 6in.; wheel track, 3ft. 8in.; weight, 5 cwts.; seats, side by side.

G. ARMSTRONG, East Riding Engineering Works, Beverley.—This four-wheeled vehicle has a twin-cylinder V type engine with the crankshaft set transversely in the frame, the drive from the crankshaft

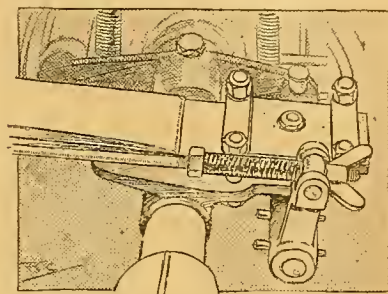
inverted elliptic springs at the rear, and likewise at the front. The wire built wheels have 650 x 65 mm. Palmer tyres all round. The steering is of the plain lever type. The petrol and lubricating oil tank form the upper part of the torpedo dash. The seats are upholstered in pleated form and are practically hammock supported.

**G.W.K., No. 34.**

8 h.p. MODEL: Mechanical valves; Solex carburetter; friction drive, propeller transmission, shaft and bevels on back axle; twin-cylinder vertical water-cooled engine; wheelbase, 7ft. 7in.; track, 3ft. 9in.; weight, chassis, 5½ cwts.; seats side by side.

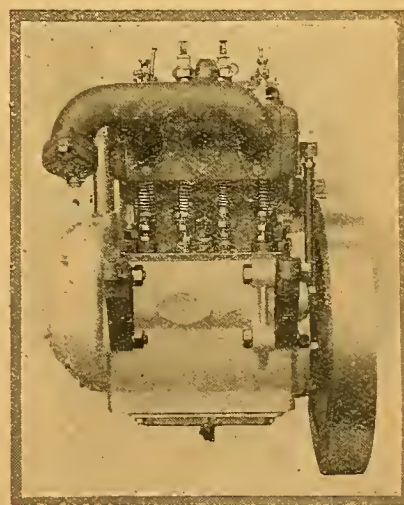
G.W.K., LTD., Datchet, Bucks.—Inspection of the chassis and finished vehicle of this highly successful car discloses the great attention which has been paid towards obtaining a reliable and speedy vehicle. The oft discussed friction drive embodied in the design of this vehicle is here shown in its best and latest form, and the records and severe trials which the G.W.K. has accomplished are sufficient answer to the critics who assert

that this drive is impractical. Looking at the chassis we find that there is at the forward end a plain vertical tubular type radiator arranged with the tubes slantwise to allow large and effective cooling surface. From the lower end of this the long water pipes run to the engine, the water pump shaft, and the magneto shaft being in line, and chain-driven. The



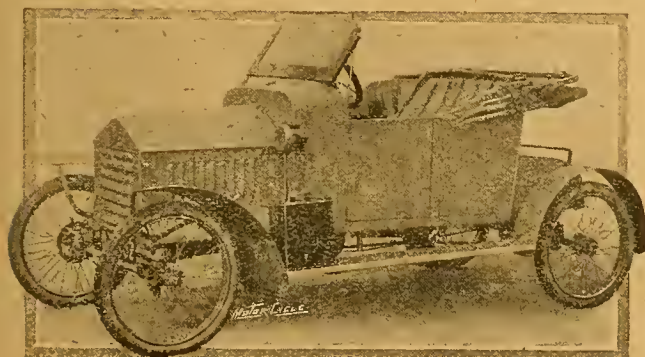
Finger adjustment for the rear brakes is provided on the G.W.K. Note also attachment of springs to rear axle.

to act upon another disc which transmits the motion to a propeller-shaft, which is further connected at the rear end with the rear axle by means of a bevel drive. A lever placed immediately to the right of the driver can be slid along so that the friction-driven wheel can be moved over the surface of the driving wheel. Thus the gear ratios are increased as this



Valve side of the 8 h.p. Coventry Simplex engine fitted to the G.W.K.

friction wheel is moved from the centre to the outer diameter of the disc. On passing on the other side of the centre a reverse motion is given to the vehicle. Depression of a pedal by the left foot causes the friction-driven disc to be moved out of contact with its driver, and by further pressure a shoe brake is brought into action on a drum arranged at the forward end of the friction-driven shaft. The frame is of pressed steel, in swept at the front to give large steering lock, and is mounted at the front end on semi-elliptical springs, and at the rear on half inverted elliptical springs. The steering is of the pinton and quadrant



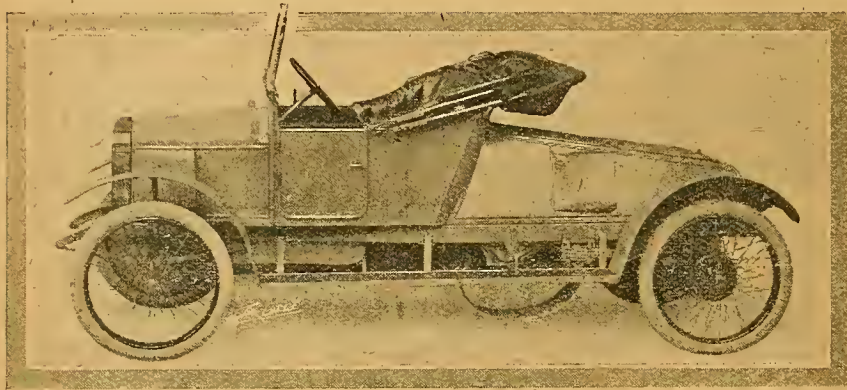
The Gordon, a Yorkshire built runabout.



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type. The front axle is tubular. The wheels are wire built, 26in. x 24in. in size. The side lever serves to apply expanding metal-to-metal brakes on the rear wheel hubs.

Generally speaking, the chassis is a finely finished piece of work, and the general appearance of the vehicle, as a complete machine, is quite attractive.



Standard pattern G.W.K. cyclecar for 1913.

**HUMBERETTE, No. 52.**

HUMBERETTE: 84 x 90 mm.; V type twin; m.o.f.v.; four-jet carburetter; gear and propeller-shaft transmission; three-speed gear; wheelbase, 7ft. 3in.; track, 3ft. 6in.; weight of chassis, 6 cwts.; seats side by side.

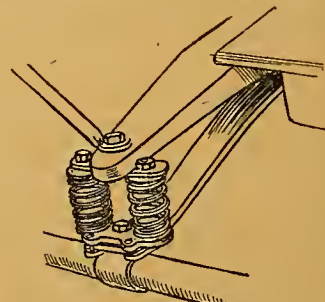
HUMBER, LTD., Coventry.—The Humberette chassis is a fine piece of work. The V type engine crankcase, the gear box casing, together with the clutch enclosing member, are all of aluminium and form a single unit. The drive from the engine is through a cone leather to metal clutch engaged by three compression springs. The gear box case contains three speeds, and the drive to the rear wheels is by propeller-shaft. The tubular frame is carried at the front on a single transverse semi-elliptic spring, the ends of the open-jawed tubular axle being stayed by tie rods to the crank case. The rear of the frame is carried on quarter inverted elliptic springs. Spring-ended radius rods are fitted to the rear axle. The foot and hand brakes are of the contracting type lined with a friction producing material. The foot brake takes effect on a drum behind the gear box, and the hand brake on drums attached to the rear wheels. Easy adjustment of both brakes is arranged for. The steering is of the rack and pinion type. The wheels are wire built, with 650x65 mm. tyres. The throttle control is by pedal and by lever working over a quadrant secured to the steering stem below the wheel. The ignition is controlled by a hand lever on the steering wheel, the connecting rod passing through the hollow stem connecting at the bottom with levers which move the contract breaker magneto. The petrol and lubricating tanks are carried beneath the scoop dash. The neat fitting of the horn, acetylene lamps with separate generator, and the hood should be noted. Various shades of finish are obtainable.

**L.M., No. 115.**

8 h.p. MODEL: 85x85 mm.; air cooled; B. and B. carburetter, hand controlled; two speeds, chain and gear. Engine, J.A.P., 50°; wheelbase, 7ft. 9in.; wheel track, 3ft. 3in.; weight, 6½ cwts.; seats, side by side.

WM. M. CUNNINGHAM, Clitheroe, Lancs.—The L.M. car has a twin-cylinder

belt rims. The foot brake is of the contracting band type, situated at the side of the gear box. The petrol tank is carried beneath the dash. The steering is by direct levers. The steering stem



Front springing of L.M. quad.

is hollow, and carries the casing of the control wires. The seats for passenger and driver are hammock type. In the curved back of the body there is a lid, behind which luggage may be carried. The wire wheels are fitted with 26x2½in. tyres. The three vehicles shown on the stand all bear witness to careful attention to finish.

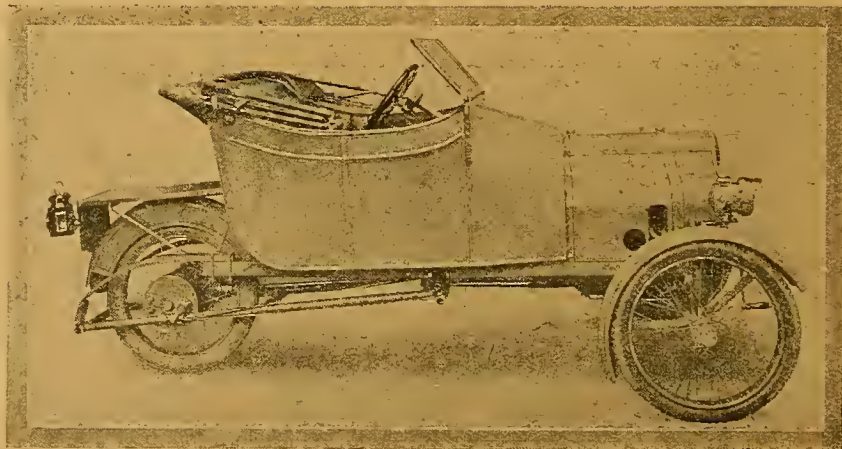
**MEDIA, No. 125.**

MESSRS. MEAD AND DEAKIN stage the Media cyclecar. This machine has an 8 h.p. air-cooled engine and friction drive. It is illustrated on another page.

**MATCHLESS, No. 72.**

H. COLLIER AND SONS, Plumstead, S.E.—The new Matchless cyclecar is fitted with a 90° J.A.P. engine, having overhead valves. It is a three-wheeler, the torque rods and the springing of the rear wheel are clearly shown in the illustration we publish on this page. The seats are side by side.

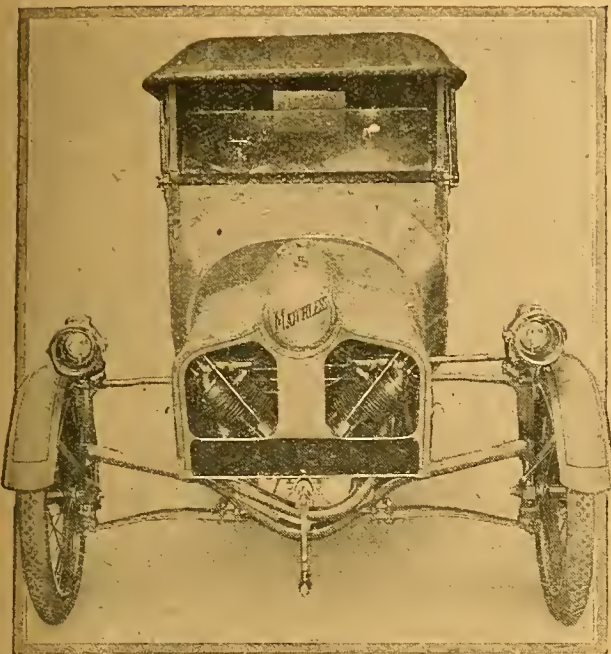
The transmission is oil-retaining and dustproof. The two-speed gear box is made in one unit with the engine, and includes a Ferodo-lined cone clutch. The whole engine and gear box unit is suspended from three points. The power is conveyed by a cardan-shaft to the bevel-driven back axle. The top gear is direct, and the lower gear is very seldom required. The capacity of the petrol tank is 3½ gallons; this quantity is sufficient for 150 miles.



Broadside view of the Matchless cyclecar, showing system of rear springing.



## The Olympia Show.—



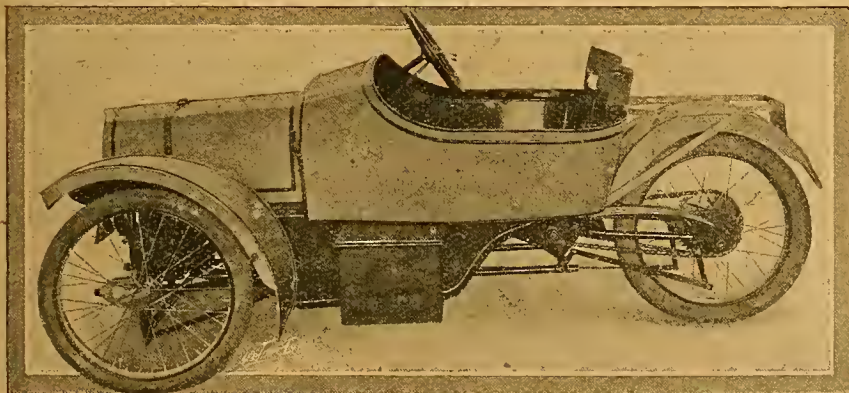
Frontview of the Matchless three-wheeler, fitted with a 90° J.A.P. engine, showing the method of springing.

**MORGAN, No. 18.**

8-10 h.p. MODEL: 85 × 85 mm. = 964 c.c.; air-cooled; V type engine; B. and B. carburetter; propeller-shaft, bevel counter-shaft, and change; two speeds; no reverse; wheelbase, 6ft.; track, 3ft. 10in.; chassis, 3 cwts.; complete, 4 cwts.; side by side seats.

MORGAN MOTOR CO., LTD., Worcester Road, Malvern Link.—This vehicle is one of the three-wheel type, the rear wheel being driven. The engine is the 8 h.p. J.A.P., set longitudinally in the front, the drive being taken from the engine to a propeller-shaft through a leather-to-metal cone clutch, which is engaged by four compression coiled springs. The propeller-shaft extending behind the clutch is encased in what is practically the main supporting member of the frame. The propeller-shaft has a ball bearing at both ends. Arranged on the counter-shaft are

pivots of the front wheel are carried in columns, which are well braced by means of two transverse tubular members, compression springs being arranged to take the load. Direct wheel steering is fitted. There are two brakes, both acting on the rear wheel brake drums. One is pedal operated, while the other is hand operated, both being of the contracting band type. The rear wheel is attached to a pivot on the casing which is at the back of the gear box, the wheel being allowed movement by the action of a half elliptical spring. The change speed-gear is actuated by a pull up and push down lever, which is situated immediately behind the hand brake. The control of the carburetter is by means of a lever and Bowden wire on the steering wheel. The



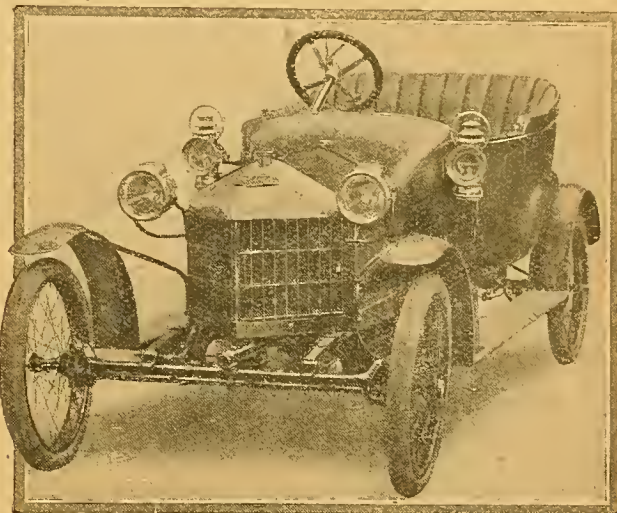
8-10 h.p. Morgan runabout, with light scuttle dash body, minus doors.

two chain wheels, which can be engaged by one or other of a pair of dogs. The final drive is thus by one or other of the two chains fitted, which give motion to the sprockets fixed to the rear wheel hub. The road wheels are wire, mounted on adjustable cone bearings, and are fitted with 650 × 55 mm. tyres. The steering

timing of the high-tension magneto is variable. A large locker for tools and spares is arranged beneath the footboard, and, so far as the bodywork is concerned, the passengers sit side by side in a most comfortable position. A large bracket is arranged behind the body to carry any extra parts required for touring. Substantial front and rear mudguards, in conjunction with a hood and wind screen, make this vehicle suitable for use in all kinds of weather.

**NEW HUDSON, No. 62.**

THE NEW HUDSON CYCLE CO., LTD., Birmingham.—A new design four-wheeler



New 8 h.p. Media cyclecar exhibited by Messrs. Mead and Deakin.

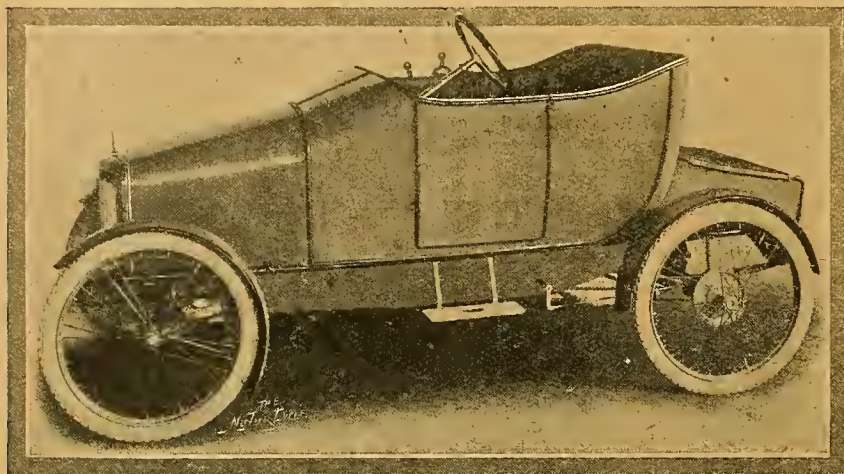
built on motor cycle lines throughout, was a late arrival on this stand. We are, however, able to give an illustration. The power is supplied by a 4½ h.p. single-cylinder engine. This engine has a long stroke, and is fitted with a decompressor which may be controlled from the steering wheel, an additional control lever actuating a Brown and Barlow automatic carburetter. The transmission is by belt from engine to gear box, working on large pulleys, and by chain from gear box to live axle. The gear box is a new Mark X. Armstrong, specially made for cyclecar work, which provides three gear ratios of 5, 7½, and 12 to 1, and incorporates a multiple disc clutch, which is pedal operated. An eccentric chain adjustment is provided. The rear axle is of the live type, and runs on ball bearings throughout. It is fitted with a central differential and a drum for a powerful brake of the internal expanding type, which type of brake is also fitted to each rear wheel. Steering is carried out on the worm and sector principle, and all wheels are shod with 26in. × 2½in. extra heavy Dunlop studded tyres. The steel mudguards have ample side wings, and should be very efficient. The frame is tubular, the engine and gear box being carried on an underframe, and the whole is sprung on semi-elliptical springs fore and aft. The wheelbase is 6ft. 8in. and the track 3ft. 6in. A roomy coachbuilt body is fitted, and



**The Olympia Show.—**

is supplied with a scuttle dash and side door. The fine performances which we hear from private sources that this machine has put up on trial, coupled

ward in place of the two seats. Of course, the control is also arranged further back to suit the position of the driver. Both types of machine are very well finished and carefully thought out.



New Hudson, a light four-wheeler with single cylinder engine.

with its extremely reasonable price, are bound to attract many visitors.

**P.M.C. MOTORETTE, No. 68.**

6-7 h.p. MODEL: 95×102 mm.; single-cylinder; water-cooling, thermosyphon; m.o. valves; J.A.P. carburetter; chain and epicyclic gear; Roc epicyclic two-speed; weight, chassis 448 lbs.; seats, side by side.

**PREMIER MOTOR CO., LTD., Aston Road.**—The Motorette is a three wheeled two-seated vehicle in which the single cylinder water-cooled motor is arranged behind the passenger's seat, the motor having large flywheels on each side of the crank case, vanes being cast as spokes in the wheel to induce a draught past the tubes of the radiators arranged at each side of the rear portion of the body. The tubes are flattened and placed at an angle. A roller chain transmits the drive from the crankshaft to a chain wheel arranged on the back axle, this axle carrying the Roc two-speed epicyclic gear. This gives a direct drive on top, and the low speed. Below the top speed lever a tiller is arranged, connected by direct levers to the two front wheels. A novel point in the body of this vehicle is that the dash can be lifted after two locking bolts have been slid back. Then the dash, including the wind screen, can be raised from the side members. These latter form doors which are automatically closed up under the action of two wires which pull them together out of the way. The two front wire-built wheels have 650 × 65 mm. tyres, whilst the single rear wheel has a 700 × 80 mm. tyre.

The Omnium motor carrier, for which this firm are agents, has a carrying capacity of 6 cwt. and is identical with the above except that there is one seat for the driver arranged further back over the engine, and the carrying compartment occupies the position for-

**PREMIER, No. 111.**

7-9 h.p. MODEL (twin-cylinder): 85×88 mm.; mechanical valves; V engine, air-cooled, cylinders set at 50°; Lukin carburetter; chain and gear; two-speed and reverse, direct on top; wheelbase, 6ft.; track, 4ft.; side by side seats.

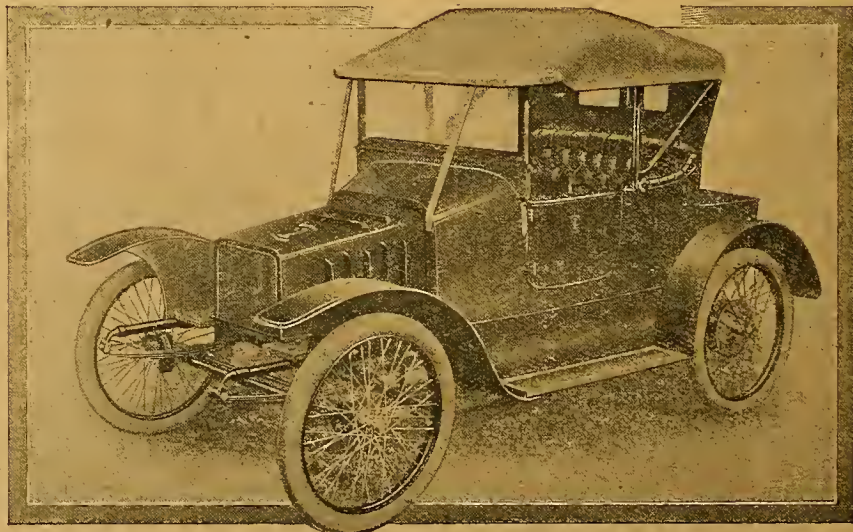
**PREMIER CYCLE CO., LTD., Hood Street, Coventry.**—This is fitted with a V-type twin engine with the cylinders set at 50°, the firing point being arranged at the correct position for each cylinder by a special arrangement of connecting rod adjustment introduced by the Premier Cycle Co. The engine is placed transversely in the frame, and the drive is by means of a single Coventry chain to the two-speed and reverse gear box. From the latter the drive is transmitted

by a single chain to the chain ring attached to the bevel type differential gear box on the rear axle. The latter is directly attached to the rear part of the frame members, whilst the forward end of the frame is attached to the front axle by means of semi-elliptical springs. The springing of the frame is thus arranged for at the forward end, whilst the springing of the body is by quarter-elliptical springs at the rear.

The two-speed gear box gives direct drive on top, whilst the low speed is indirect through a train of wheels, as is likewise the reverse. The forward speed is operated by a lever working over a straight-cut quadrant. The reverse is brought into action by the depression of a separate lever fitted with a universal joint. It is a good point to note that the top and bottom of the steering stem is fitted with ball thrust bearings. The main frame is of 1½ in. 10-gauge steel tube, the frame being trussed by extra tubular members with short struts so that all deflection is avoided. The wheels are tangent wire spoked, designed to carry 650×65 Dunlop plain-tread tyres. The length over-all is 8ft. 6in.

The engine lubrication is arranged with a Rotherham suction drip-feed lubricator attached to the lubricating tank, which is arranged beneath the dash, and is to be made part of the petrol tank. In addition there is a hand pump for giving an extra supply to the crank case if necessary. The control of the magneto timing and the throttle opening is by means of levers arranged on the steering wheel. An accelerator pedal to act upon the throttle will be fitted in future.

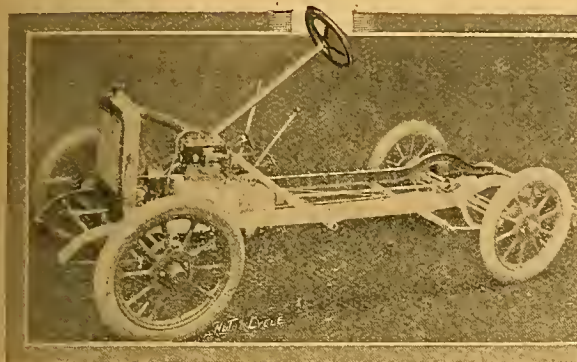
The clutch is of the leather-to-metal cone type. The clutch actuating pedal is operated by the driver's right foot, whilst the foot brake is operated by the left foot, this being the reverse to practically universal standard practice on motor cars, which is a pity. The foot brake is of the contracting band type, taking effect upon a drum alongside the gear box. The hand brake lever is of the push-on type, and takes effect through spring balanced rods on to malleable



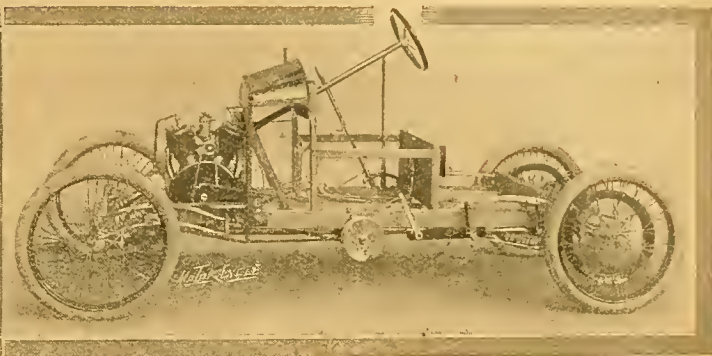
Premier cyclecar with hood and screen. It has a twin-cylinder air-cooled engine and two speeds.



## The Olympia Show.—



Chassis of the Perry cyclocar in the gallery.



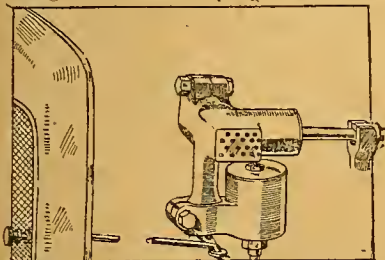
Wood frame of the 3 h.p. Duo.

drums, in which expanding cast iron shoes act. A point on which the Premier Co. lay special stress is that so far as the vital parts are concerned, such as the open-jawed ends of the tubular front axle, the steering swivels, transmission, axles, and so on all are of vanadium chrome steel and not malleable castings, as is most often the case in these lightly-constructed vehicles. Further, the gear wheels are air-hardened by a special process, and have an exceedingly high tensile strength, so that gear trouble should be unknown.

**PERRY, No. 157.**

8 h.p. MODEL: 72 x 108 mm.; V type; m.o.v.; water-cooled; Perry carburetter; shaft; weight of chassis, 6 cwt.; side by side.

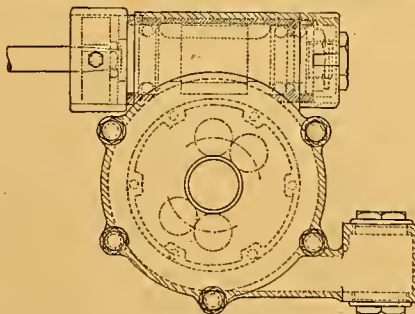
PERRY AND CO., LTD., Tyseley, near Birmingham.—The Perry cyclocar chassis



A device for closing off the main air is fitted to the Perry radiator to ensure easy starting.

is shown complete, and is a cleanly designed piece of work from front to rear. This was described in *The Motor Cycle* of November 21st (page 1339), so that a

lengthy description would be redundant. A visitor, however, might make a note of the compact construction of the engine combined with the gear box casing, forming one unit and suspended on four forged brackets bolted to the side members of the frame. The neat arrangement of the propeller-shaft, universal joints, and the overhead casing of the back axle, and the long camber of the front and rear springs, together with the embedment of



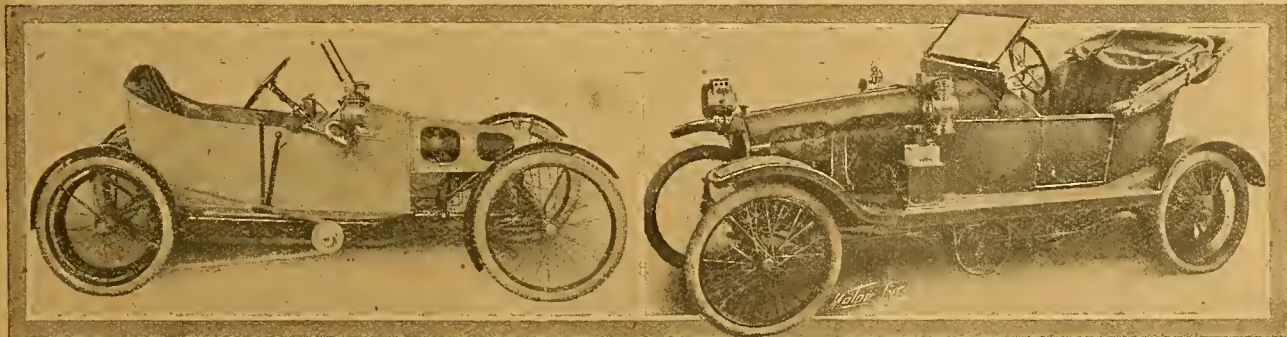
Perry overhead worm drive.

all the brakes on the rear wheels, deserve attention. With reference to the rear springs, it should be particularly noticed that the back parts of these have first intention shock-absorbing coiled springs in compression similar to the practice which was first favoured on Daimler cars. In addition, there are detachable Sankey all-steel wheels made so that the front and rear wheels are interchangeable. To enable this to be done without interfering with the brakework the front wheels also carry brake drums.

**ROLLO, No. 119.**

8 h.p. MODEL: 85 x 85 mm.; mechanical valves; V air-cooled engine; Amac carburetter; chain from engine to counter-shaft, belts to rear wheels; expanding pulley, change speed gear; wheelbase, 8ft. 4in.; track, 3ft. 1in.; weight of chassis, 4 cwt.; seats, tandem or side by side; wheelbase, 7ft. 6in.; track, 3ft. 4in.

THE ROLLO CAR CO., LTD., Conybere Street, Birmingham.—The chassis shown suitable for the tandem form of vehicle is identical in construction with that intended for a sociable type of body, the only difference being that the frame is made wider in the latter case and the steering brought more to the right. The frame is tubular, inswept closely at the front, which portion also carries the supporting tubes for the twin-cylinder air-cooled J.A.P. engine. A belt-driven double fan is mounted on the stay members of the steering head in ball bearings. On the left side of the crankshaft is a chain sprocket, by which the drive is transmitted through a silent chain to a larger sprocket on the counter-shaft. At the end of the latter, which is mounted on ball bearings, are expanding and contracting pulleys, through which the drive is taken to the rear by belt. The pushing forward of the pedal increases the effective size of the counter-shaft expanding pulleys, and at the same time can be used for declutching purposes, so that a free engine may be obtained with the gear lever in any position. Adjustment for the belt is arranged for by means of a lever which works over a slotted quadrant placed cen-



TWO EXAMPLES OF THE ROLLO AS EXHIBITED AT THE SHOW.—(1.) The Rollo Mono, with single-cylinder engine. (2.) The Sociable pattern which has a twin-cylinder engine.



**The Olympia Show.**

veniently to the right hand of the driver. The pedal brake is internally acting, and extra hand brakes are provided when the belt adjusting lever is pushed far forward, in which case shoes are brought into contact with the forward part of the V belt pulleys. The rear part of the vehicle is suspended on inverted semi-elliptical springs. The front axle affords centrally pivoted steering, the support of the centre of the axle acting upon a coiled spring in strong compression. The steering is by means of thimble and steel wire cable. The wheels are wire-built, fitted with 26in.  $\times$  2 $\frac{1}{2}$ in. tyres.

Turning to the single-seater, this has a 4 $\frac{1}{2}$  h.p. Precision engine, 89  $\times$  95 mm., and the only difference in the arrangement is that there is a two-speed gear box, with which is incorporated a clutch. The final drive and the design of the frame are exactly similar. This model is fitted with 26in.  $\times$  2 $\frac{1}{2}$ in. tyres.

**RUDGE, No. 96.**

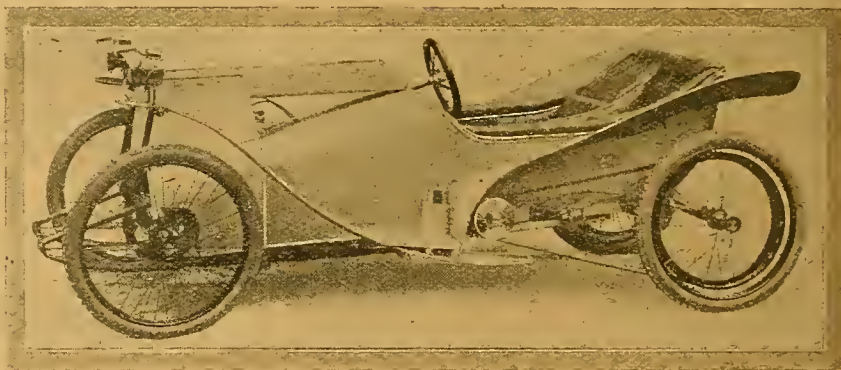
5-6 h.p. MODEL: 85  $\times$  132 mm.; 750 c.c.; mechanical valves; overhead inlet; Senspray carburetter; belt; Rudge-Whitworth variable gear; wheelbase, 6ft. 9in.; track, 4ft.; height to top of back seat rest, 4ft. lin.; weight, 5 $\frac{1}{2}$  cwt.

**RUDGE-WHITWORTH, LTD., Coventry.**—The Rudge cyclecar engine is the same as the one described in connection with the sidecar model, and is placed transversely in the frame, driving by a single lin. V rubber belt from the engine to the counter-shaft, and thence by two  $\frac{3}{4}$ in. belts from each end of the counter-shaft to belt rims on the road wheels. The engine pulley has expanding and contracting flanges similar to the Rudge multi-gear, but the clutch has been transferred from the engine-shaft to the counter-shaft, on which another expanding pulley is fitted. Each of the expanding pulleys has the flanges supported by ball races, but the expansion and contraction of the flanges are worked by means of forked levers and not by cams as in the case of the multi-gear.

The sizes of the pulleys are: Engine, 6in.; counter-shaft, 10 $\frac{1}{2}$ in.; side pulleys, 6in.; belt rims, 20in.; thus providing a range of gear ratios from 3 $\frac{1}{2}$  to 14 to 1. Ten notches are cut in the change-speed lever quadrant, thus affording ten different gear ratios. As in the Rudge multi, the alignment of the first drive belt remains correct throughout the range. The gear lever is fitted inside the body, and is pulled back for low speed and pushed forward for high.

except that, instead of a pedal, it is worked by handle between the off front wing and the frame. An exhaust valve lifter is provided at the corner of the scuttle dash convenient to the driver's left hand, so that when starting with the right hand the left bears on the valve lifter and the engine can be rapidly revolved.

The frame is made of steel tubing, arranged in two planes one above the other, and formed into a girder by the engine and dash supports. The rear



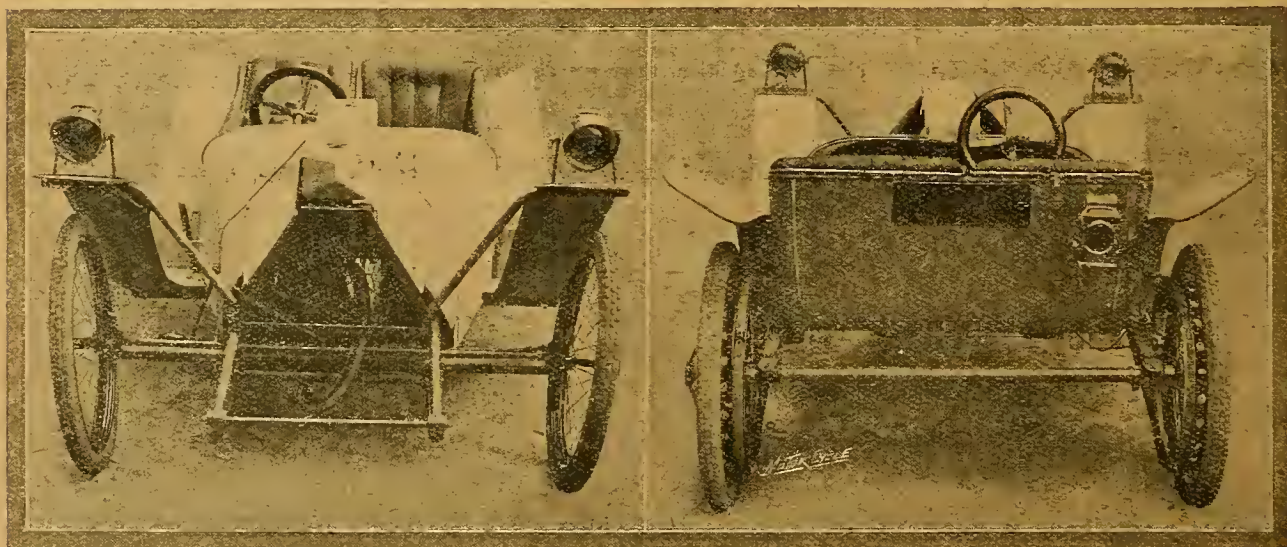
The Rudge runabout. Observe the springing and reclining seats.

Where this gear differs from the ordinary multi-gear is that if the car were stopped by declutching while on a fairly high gear ratio it would be difficult to start without lowering the gear. This gear has the clutch on the counter-shaft and not on the engine-shaft, so that if the car be stopped with engine running and clutch out the belt between the counter-shaft and the engine is in motion, and thus it is possible to change the gear to a lower ratio with vehicle at a standstill. The clutch lever and gear lever are together but work independently.

For starting, the auxiliary lever expands the engine pulley until the belt can drop on to a bearing ring at the bottom of the flange. The engine starter is of the Rudge geared up chain type,

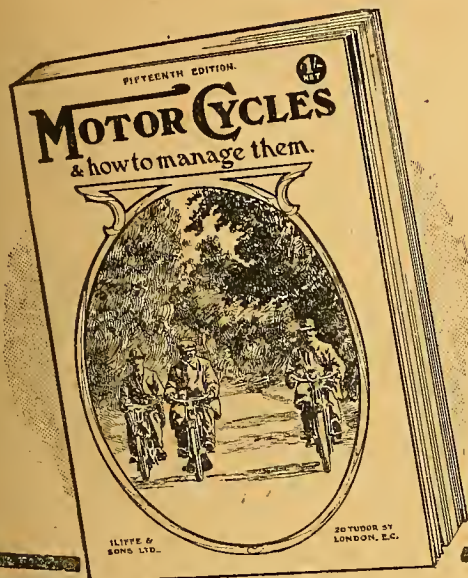
springs are quarter elliptic, and the front springs semi-elliptic, the former having eight-leaves, while the latter has four. Two independent brakes are provided, both working on the rear wheels. Two shoes bear on the outside of the belt rims and two in the belt grooves. The former are operated by hand, and the latter are emergency pedal brakes.

The front dumb irons are particularly neat; here the front springs are attached, the other ends being supported by shackles fastened to the frame. The steering is by rack and pinion, the rack being connected to the left steering centre by a long rod, thus providing for a larger arc or radius to be described, in relation to the steering centre when the front wheels are lifted, than would be possible



Front and rear views of the rakish looking Rudge which is causing much comment.





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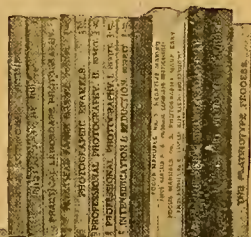
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**The Olympia Show.**

were the rack connected to the right or nearest steering centre. The car will turn in a circle of 23ft.

The body is moulded on the lines of the Rudge sidecar, and is coachbuilt, with long mudguards and belt shields, combined with running board or step. The scuttle dash is carried right up to the steering wheel. The petrol tank is a novel feature, and gives the vehicle a very racy appearance. It runs from the top of the scuttle dash, over the engine, and extends forward level with the front axle. It is an enlarged motor cycle tank, divided in the centre, thus forming two tanks, each with its own petrol tap. The capacity is five gallons, and the consumption averages 45 m.p.g.

The driver's seat is slightly in front of the passenger's, allowing space for a locker behind. The vehicle exhibited has 26in. x 2½in. Dunlop tyres, and is painted grey throughout, owing to lack of time for a more elaborate finish. It is, however, intended that the chassis shall be enamelled black and the body painted in the same manner as the sidecar.

**SINGER, No. 79.**

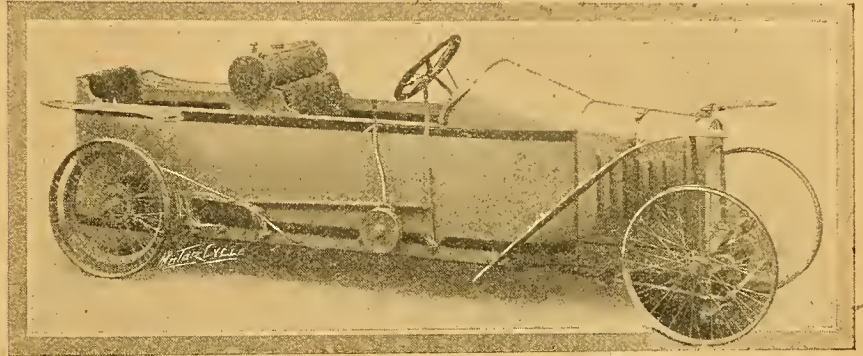
10 h.p. MODEL (four cylinders): 63x88 mm.; m.o.v.; water-cooled; Claudel-Hobson carburetter; three-speed gear; gate change; wheelbase, 7ft. 6in.; track, 3ft. 6in.; weight of chassis, 5½ cwt.; side by side seats.

SINGER AND CO., LTD., Coventry.—The Singer Co. make a bold display with three complete vehicles and a highly finished polished chassis. The exhibits consist of two open touring two-seated models, complete with hood and screen, lamps, etc. So far as the general arrangement of the various parts is concerned, these have been so fully described in previous issues that a brief *résumé* will serve to convey a general idea as to the design and construction.

Speaking broadly, the design is that of a car in miniature. The engine has four cylinders, water-cooled, cast in pairs, and the lubrication is mechanical. Cooling is by thermo-syphon, a large flat tube radiator being fitted. The clutch is of the leather covered cone type, whilst the rear axle is gear driven, and carries the

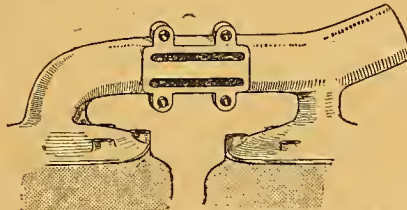
gear box. Close attention has been given to the design of the parts in every respect. It should be mentioned that the pinions of the gear box are constantly in mesh, the striking mechanism bringing dog clutches into action.

Foot and hand brakes take effect upon the drums on the rear wheels, both being internally expanding. The wheels are Sankey 700 x 80 mm.



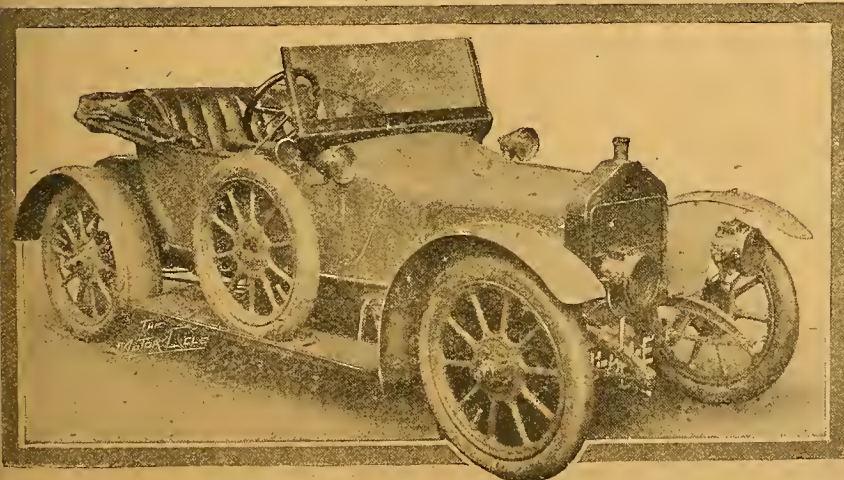
An example of the Super, a tandem seated runabout.

Since our previous descriptions various minor alterations and improvements have been effected. One which is readily seen is that of fitting a first compression spring at the rear and semi-elliptic plate springs which connect the rear axle with the frame.



Water outlet pipe on four-cylinder Singer showing how inlet gases pass through slots in the casting.

The steering is of the worm and sector type, and the front axle is an I section steel stamping. The Singer is one of the best finished cyclecars of the miniature car class to be seen in the Show.



Three quarter view of Singer cyclecar with latest design of body.

**SUPER, No. 128.**

8-10 h.p. MODEL: 75 x 120 mm.; mechanical valves; V-type water-cooled engine; Claudel carburetter; chain and belts; expanding pulley; seven-speed; wheelbase, 10ft. 6in.; track, 3ft. 6in.; weight, 400 lbs.

E. JOZOR, LTD., New Oxford Street, W.C.—On the stand of Messrs. Taylor is

shown the Super tandem cyclecar. This vehicle has already been described in these columns, so that only brief reference is needed here. Attention, however, may be directed to the cross springing of the frame, which is somewhat similar to the Sizaire Naudin light motor car, whilst the springing at the rear is of a pattern now coming into favour, being the modified Lanchester type. The fact that seven speeds can be gained by means of variable pulleys which drive the belts passing over the rear wheel belt rims shows that this vehicle should be a speedy one in conjunction with the 8-10 h.p. water-cooled Anzani engine. Full provision is made for adjusting the chain drive from the engine to the counter-shaft. The car exhibits a workmanlike appearance and the inscription of the name over the radiator top gives added distinction.

**SURRIDGE, No. 21.**

8 h.p. MODEL: 84 x 88 mm. air-cooled Fafnir V twin, 50° angle; m.o.v.; B. and B. carburetter; friction and chain; five speeds forward and reverse; wheelbase, 8ft.; wheel track, 3ft. 9in.; seats side by side; weight, 5½ cwt. chassis, with body 6½ cwt.

ROBT. SURRIDGE, Lombard Grove, Camberwell, S.E.—This cyclecar is notable for having a friction drive with long shaft extending from the crankshaft to a position beneath the tool box behind the driver's seat. A large cast-iron disc transfers the motion to a cross disc fitted with leather washers. The actuation of this disc across the face of the cast iron friction wheel by means of a change speed lever at the side, increases or decreases the gear as required, and also gives the reverse. A pedal actuated by the left foot serves the purpose of a clutch, whilst in case the spring which brings the friction disc into action should break an extra lever is provided to enable the passenger to put pressure on the discs. There is also a trigger which is provided

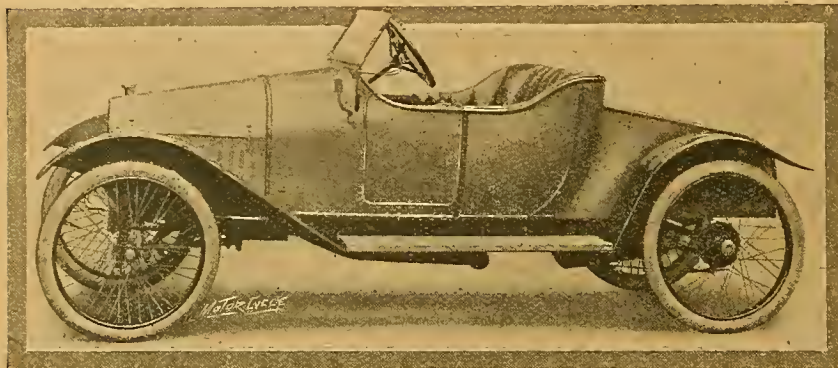


**The Olympia Show.—**

to throw the disc permanently out of engagement. The frame is made up of four ash members, suitably reinforced by steel ditch plates. It is mounted on inverted quarter-elliptic springs front and rear. The steering is by plain lever. Lubrication of the engine is effected by a

being enclosed, the enclosing tube serving also as a torque rod. The main frame is tubular, and, also, there is a tubular underframe to carry the engine and gear box. The brakes are, so far as the foot operated one is concerned, of the contracting type with a liner acting on the brake drum of the gear box; the hand

low build and long wheelbase. The engine has the crankshaft parallel with the frame sides, the drive being by shaft to the two-speed gear, and thence by a single roller chain to the rear live axle. The working parts of the machine were hardly complete at the time of our inspection. A dummy radiator is provided. The coach-built body of the machine shown is finished black and yellow.



Surridge Cyclar, one of the smartest looking four-wheelers in the Show.

hand pump. One foot brake is fitted, this being actuated by a right-hand pedal, the braking effect passing through wire balanced cables to internal expanding shoes arranged on the rear wheel drum. The wire wheels are fitted with 700 x 65 mm. tyres. The petrol tank is carried beneath the bonnet, and holds four gallons. This vehicle is well thought out and is excellently finished.

**SWIFT, No. 100.**

6 h.p. MODEL: 75 x 110 mm.; mechanical valves; Longuemare carburetter; shaft; three speeds, gate change; wheelbase, 7ft.; track, 3ft. 4in.; weight of chassis, 5 cwt.; two seats, side by side.

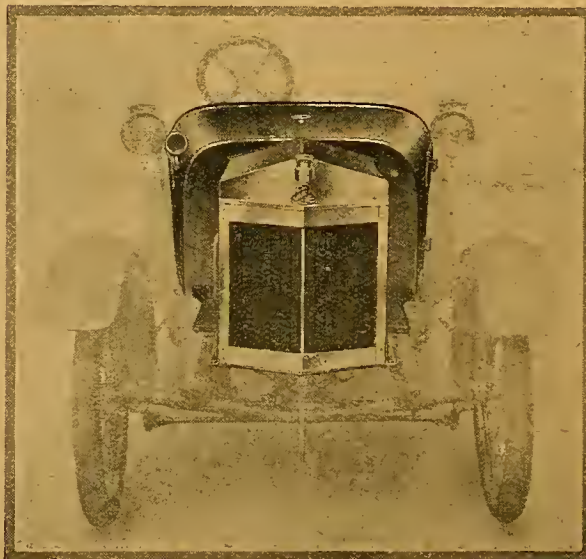
SWIFT CYCLE CO., LTD., Coventry.—This cyclecar is really a modification of the ordinary motor car, the lines throughout being practically the same, the only thing being that the design is smaller. At the same time there is no undue sacrificing of strength to gain lightness, and it will no doubt perform well over the roughest of roads. The engine is of the twin-cylinder vertical water-cooled type, the cylinders being a *bloc* casting. The bore and stroke are 75 x 110 mm. respectively. The valve stems, tappets, and springs are covered by a detachable plate. The Eisemann magneto is fixed at the forward part of the camshaft timing cover and skew wheel driven. The ignition is variable by means of a Bowden wire actuated by a lever attached to a quadrant on the right hand side of the body. The same type of control is fitted to the carburetter. The lubrication of the engine is effected on the chicken fountain principle. The connecting rods are lubricated on the splash system. The cooling of the engine is by thermo-siphon, a large tubular V shaped radiator being fitted at the front of the bonnet. The clutch is of the leather-to-metal cone type withdrawable by a pedal actuated by the left foot of the driver. The gear box gives three speeds forward and reverse, a gate change lever being fitted. The final drive is by bevel, the propeller

brake is applied through balanced wire cables to gunmetal shoes, which are contained in the real wheel brake drums. Steering is of the rack and pinion type. The wheels are wire built and carry 650 x 65 mm. Dunlop plain tyres. The general finish of the body and chassis is excellent throughout, a special point about the body being that the passenger sits a little further to the rear than the driver, thus giving ample room to the driver and, at the same time, plenty of leg room to the rear passenger.

**TINYCAR, No. 47.**

Twin V type air-cooled engine: mechanical valves; two-speed gear; final single chain: seats, side by side.

NANSEN, BARKER AND CO., Esholt, Yorks.—This machine is conspicuous for its



Front view of the new Swift cyclecar.

**T.M.C., No. 22.**

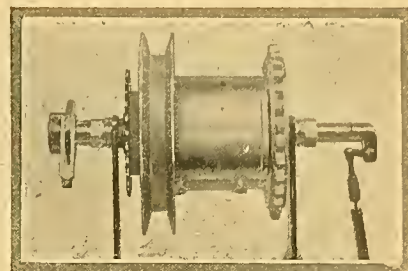
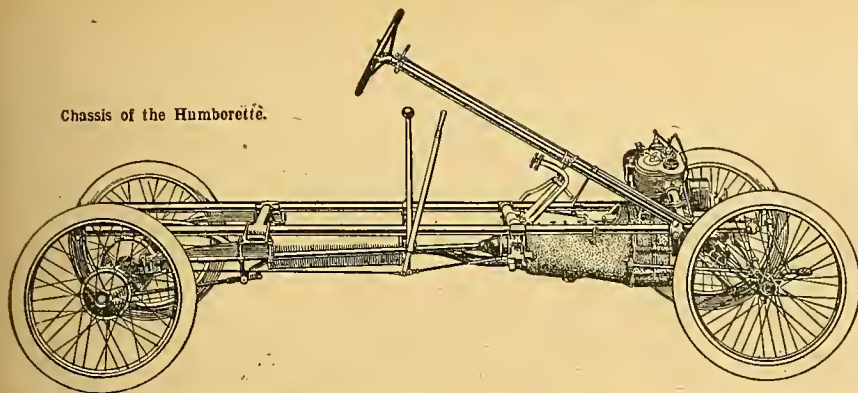
7 h.p. MODEL: 60 x 75 four-cylinder vertical 848 c.c.; cooling water; m.o. valves; Stewart-Precision carburetter; shaft; three speeds; wheelbase, 7ft. 6in.; track, 3ft. 10in.; weight, chassis 5 cwt. body 1 cwt.; seats, side by side.

THE WILKINSON "T.M.C." CO., LTD., Southfield Road, Acton, W.—The T.M.C. chassis possesses a four-cylinder water-cooled engine with cylinders cast separately, the crank chamber and gear box being carried on a tubular inner frame. On one side at the forward end of the distribution gear case the magneto; which is skew driven, is situated, while a geared water pump is placed on the other, the water being circulated through the cylinders and the circular tube honeycomb radiator. Three main bearings are fitted to the engine, and all bearings are white metal-lined. The lubrication of the engine is effected by a drip-feed lubricator on the dash where the oil tank is situated. The excess of oil is pumped from the crank chamber back to the tank, so that a constant level is maintained in the troughs. The clutch is of the cone leather-to-metal type actuated by three compression springs. Close up to the clutch is the three-speed gear box, the change speed lever being actuated over a straight quadrant. An open propeller-shaft with cardan joints fore and aft transmits the power to a bevel-driven live axle. The load is carried on extension sleeves and the axle runs on ball bearings of

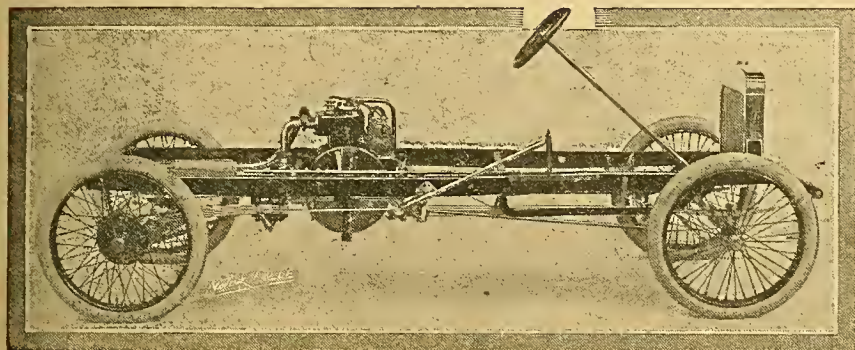
ample dimensions. The frame is mounted in front on semi-elliptical springs of long range and camber, while there are inverted quarter-elliptical springs at the rear. Both hand and foot brakes take effect on the rear wheel brake drums, the foot brake being internal expanding metal-to-metal, whilst the hand brake is band contracting external lined with Ferodo. The steering is by worm and sector. The front axle is tubular with open jaws. The wire wheels take 26 x 2 1/2 in. tyres. A very smart body is shown separately for this vehicle, which is an admirable piece of work throughout, such as one would expect from the makers of the T.M.C.



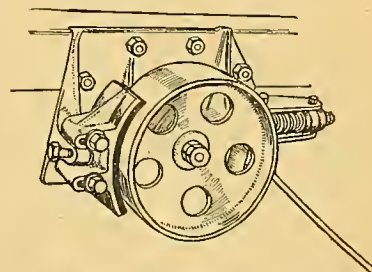
Chassis of the Humboretté.



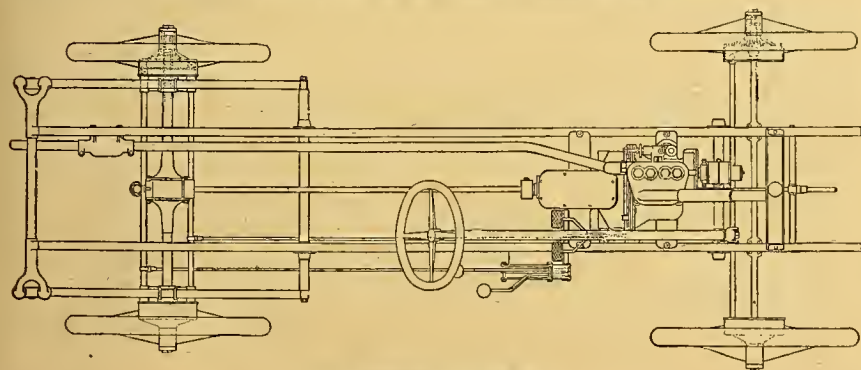
Armstrong cyclecar gear for chain and belt drive, suitable also for the bottom bracket of motor bicycles.



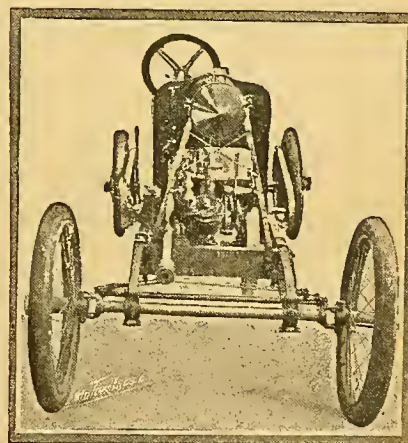
Chassis of the G.W.K., showing general arrangement of parts.



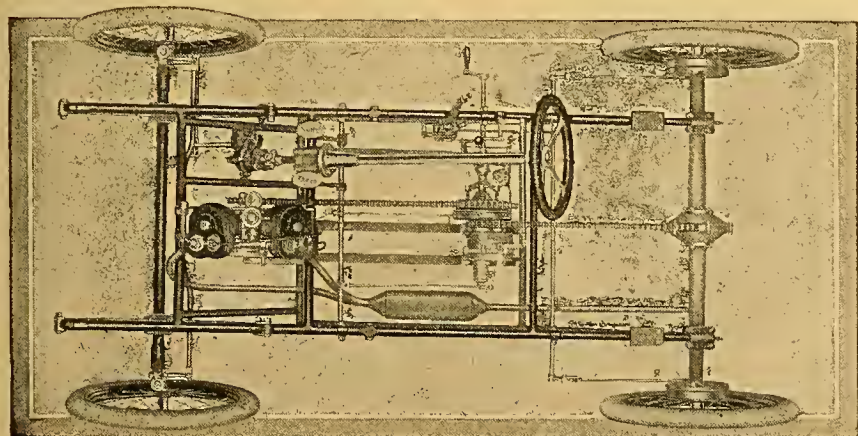
Details of the G.W.K. foot brake. The drum is moved transversely and comes into contact with the brake shoe on the left. The spring of the friction drive is shown on the right.



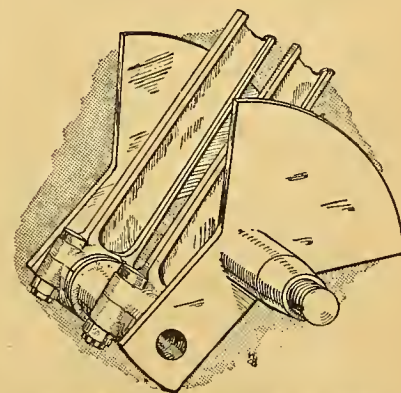
Plan of complete Perry chassis.



Front view of the G.N. A torpeda-shaped petrol tank is placed above the engine.



Plan view of the 7-8 h.p. Premier chassis.



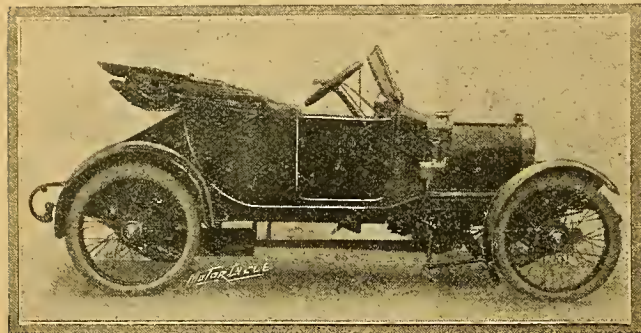
Arrangement of connecting rods on Perry cyclecar.



**The Olympia Show.—****TYSELEY, No. 80.**

8 h.p. MODEL: V twin water-cooled; 82½ × 102 mm.; side by side valves; two speeds and reverse gear; four wheels; weight complete under 8 cwt.

THE TYSELEY CAR Co. (proprietors, Bowden Brake Co., Ltd.), Tyseley, Birmingham, are the makers of this car, which they do not claim to be an ordinary cyclecar or to compete with the numerous lightweights at present on the market. It is called by its makers the car de luxe of the small car world. The engine, clutch, and gear box are a self-contained unit fitted in front of the vehicle under a



The Tyseley a smart-looking four-wheeler.

bonnet, both crank case and gear box being cast together. Heavy internal fly-wheels are fitted and the crankshaft runs on ball bearings.

The magneto is in an accessible position in front of the crank case and carried on a special platform. It is gear-driven off the left hand timing shaft. Lubrication is provided for by means of a small geared pump which forces oil under pressure to the various bearings and then to the shafts of the gear box. All valves are easily accessible, being arranged in front of the engine.

The gear is of the sliding type, two speeds and a reverse being provided, the top gear ratio being direct. From the engine to the gear box the power is conveyed through a plate clutch of large size, which is inside the gear box, where it can be copiously and efficiently lubricated. From the gear box to the back axle the drive is by a universally jointed propeller-shaft, and a balance gear is provided.

The frame is of pressed steel and the front axle is a stamping of I-section axle steel. The steering is irreversible, movement of the front levers being effected by the usual type of worm and wheel with ball jointed connecting rod. The worm wheel is a complete circle, not a segment, which allows for it to be turned round to engage new teeth when those previously in mesh become worn. Detachable wire wheels, 650 × 65, are fitted, and a spare wheel is included; this is carried in a recess under the seat and toolbox.

The side brakes are of the internal expanding type, hand operated, and fitted to the rear wheels. A shaft brake is also provided at the end of the gear box. The price includes a spare wheel, lamps, screen, horn, and tool-kit. The body is

coach-built with aluminium panelling. The average speed of this little vehicle is 25 to 30 m.p.h., and the average consumption 40 m.p.g. The total weight is given by the makers as under 8 cwt., but no attempt has been made unduly to lighten the parts of the Tyseley, which is essentially a small car.

**WALL TRI-CARRIAGE, No. 120.**

4½ h.p. MODEL: Precision 89 × 96 mm.; cooling air valves; H.C. carburetter; shaft; two-speed gear; wheelbase, 6ft. 3in.; track, 3ft. 7½in.; weight, 336 lbs.; seats, side by side.

A. W. WALL, LTD., Hay Mills, Birmingham.—The Roc three-wheeler, of

which many examples are shown, has the front wheel arranged and steered similarly to a motor bicycle, except that there is a long spring lever terminating in an oval-shaped handle. In one model a single-cylinder Precision engine, 89 × 96 mm., is fitted, whilst another possesses a twin-cylinder 75 × 80 mm. air-cooled engine.

The transmission design of this vehicle is worth minute inspection, for the usual direct crankshaft drive is dispensed with, and in its place is substituted a reducing pinion drive, by which the speed of the crankshaft is reduced by half. This reducing speed shaft carries a bevel into which is meshed the starting handle bevel-shaft, which revolves while the engine is in motion, and a prolongation of the driving-shaft carries the differential gear.

The gear can be locked up so that the drive is then transmitted through an enclosed propeller-shaft to the bevel driven rear axle.

The release of the centre pedal and pressure applied on the left-hand pedal brings the epicyclic low speed gear into action, whilst depression of the right-hand outer pedal applies the contracting brakes to the rear wheel drum. The Wall tri-cycle is not new to the Show.

The hand applied brake consists of a single fibre shoe, which acts upon a V rim on the right-hand rear wheel only.

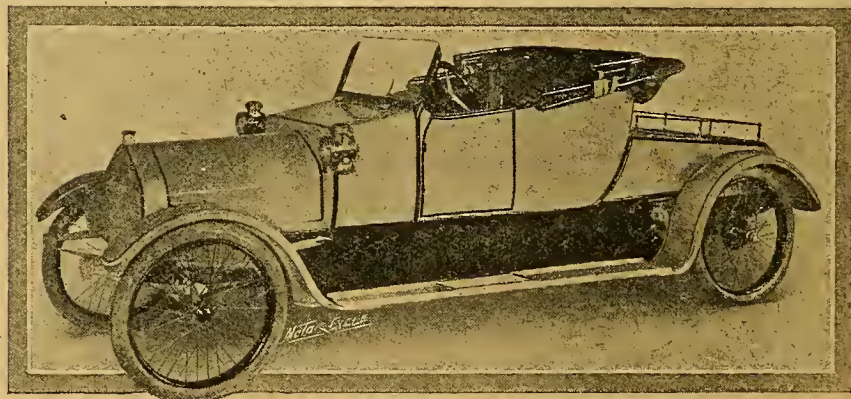
The frame is made up of substantial tubes, goose-necked at the front, and carried to the rear axle sleeve. Also attached to the frame are double plate flat springs, which carry the body.

The models shown include a single-seater, a two-seater (side by side), a single-seater with luggage-carrying box behind, and all give the impression of excellent workmanship and high-class material. Quite a number of these handy tri-carriages are in use for delivery of goods.

**WILTON, No. 123.**

9 h.p. MODEL: Interchangeable valves; new J.A.P. air-cooled engine, twin cylinders; double jet carburetter; three speeds and reverse, gate change; wheelbase, 9ft.; track, 3ft. 10in.; weight of chassis, 5½ cwt.; side by side.

WILTON CYCLE AND MOTOR Co., Wilton Road, S.W.—This Wilton cyclecar is staged in an incomplete form, without engine or gear box, as it could not be got ready in time. The general specification of this vehicle is as follows: New J.A.P. 9 h.p. twin-cylinder engine, with overhead valves. The ignition is by Bosch magneto. The carburetter is of the double jet type, operated by accelerator pedal from the footboard. The lubrication is by sight feed drip and hand pump. The petrol tank forms part of the scuttle dash. The gear box contains three speeds and reverse, operated by gate change lever, with direct drive on top gear. The transmission is through the gear box to bevel-driven rear axle, the bevel drive being contained in a special cast steel outer casing; the differential is of spur type contained in a forged steel casing. The frame is built up of inverted "U" section pressed steel, with semi-elliptic springs in front and threequarter elliptical at the rear. The steering gear is of worm and segment type, and the brakes are internal expanding, both acting on the rear wheels, one brake being operated by pedal and the other by hand lever. Wire wheels are used, fitted with 700 mm. tyres. Judging by the inspection of the unfinished product, it is likely to prove very substantial, being well and soundly constructed.



Nansen, Barker & Co.'s four-wheeled "Tiny car," which is extremely low built.



## ACCESSORIES OF THE SHOW

Sydney R. Jones



ACCLES AND POLLOCK, Oldbury, Birmingham (No. 200).—are showing handle-bars and seat-pillars of all sizes and types. The chief items of interest to the ordinary purchaser are various types of box spanners, one being of a particularly neat form in which the tommy bar is riveted permanently into the box spanner. It is of short length and can easily be stowed away in the toolbag. Another type of spanner shown is the Ferret, which consists of a special set of box spanners, together with a ratchet device.

ARMSTRONG THREE SPEED GEAR CO., Birmingham (No. 177).—The Armstrong hub is shown in three patterns. Mark 5 has the normal gear on the middle ratio as before, but it is now made to start with the back wheel on the ground. Mark 6, a new motor cycle gear, has the direct drive on top and gives reductions of 65% and 130% through one train of wheels for the middle gear, and two for the low. Mark 10 is a special cyclecar gear for a combined chain and belt drive on similar lines, but more strongly built. To facilitate adjustments on all models there is a hole in the gear quadrant, and a small screw carried in the top of the handle, when placed in this hole, holds the gear in neutral position. The back wheel should then be quite free with the clutch in engagement.

## BATES HEAVY TYRES.

W. AND A. BATES, St. Mary's Mills, Leicester (No. 70).—The Bates tyre, which was introduced last year, is now made in three weights. No. 1, suitable for solo work on machines up to 3½ h.p. No. 2, specially heavy on three-ply canvas suitable for twins and sidecar work, and the extra special heavy on four-ply canvas suitable for cyclecars and heavy sidecar work. A motor cycle belt which has been well tested is introduced for the first time. Motor cycle tubes both ordinary and butt-ended are shown in all sizes.

REST AND LLOYD, Handsworth, Birmingham (No. 246).—This exhibit consists mostly of lubricating devices, several of which have been previously described and illustrated in our pages. A new accessory at the Show is the throttle controlled type of engine lubricator, which provides for a varied supply of oil according to the load on the engine. That is to say, when the throttle is nearly closed a very small quantity of oil passes. When the throttle is fully open it alters the supply of oil to suit the conditions of the increased load or speed.

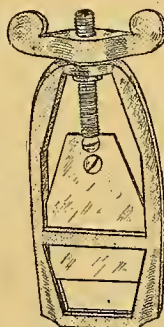
BLUMFIELD, LTD., Lower Essex Street, Birmingham (No. 248).—The features on this stand are the water-cooled engines that were designed for the Tourist Trophy Race. These are both of 3½ h.p., a twin (61.8 × 83 mm.) and a single (81.5 × 95 mm.). In the single the valves are side

by side; in the twin overhead inlet valves, worked by adjustable mechanism, are used, and the inlet passage is brought across the cylinder head from the opposite side. In the air-cooled engines slight modifications have been made, so that while air space is left between the lower parts of the valve chambers and the cylinder the cooling fins are continuous, giving greater strength with better cooling. The lubrication arrangements have also been improved, and the big end design of the twins, the possibility of seizure being reduced. These details are well shown by some sectional models. The air cooled engines are 3½ h.p. single-cylinders, 5-6 and 7-8 twin-cylinders, all with side by side valves, and the 7-8 produced especially for cyclecar work. A very neat half-scale working model of the 5 h.p. twin with a bore and stroke of 32 × 44 mm. is shown.

## PRECISION AND LOW ENGINES.

F. E. BAKER, Moleson Street, Birmingham (No. 193).—The stand of F. E. Baker, Ltd., is a particularly interesting one, as on it are shown Precision engines of all types, and it is interesting to note that all the principal engines are shown in section demonstrating the accuracy with which they are constructed. Many well-known makes of machines shown on the floor are fitted with these engines. Not the least interesting is the water-cooled Green-Precision, of which a model is shown provided with a Phelon and Moore two-speed gear, whilst the chief attraction on this stand is the Low forced induction engine which has previously been dealt with in *The Motor Cycle*. This engine is a single-cylinder, measuring 104 × 78 mm., and gives 15 h.p. Its maximum revolutions are 3,300 per minute. Forced oiling is used.

BROWN BROS., Great Eastern Street, E.C. (No. 144).—The Guillotine belt cutter is a new introduction by Brown Bros., Ltd. Reference to the sketch will show that this is a straight-bladed knife, working in guides, and forced through the belt by means of a finely-pitched screw thread. It should meet a want, as it is an inconvenient method of shortening a belt to cut it with a knife, resting the belt on some part of the frame or saddle. A large assortment of accessories is shown.



Guillotine belt punch, sold by Brown Bros.

BROWN AND BARLOW, LTD., Witton, Birmingham.—In addition to the well-known models of carburetters made by this firm, particular mention must be made of a new automatic straight through type. In this the flow of petrol is regulated by a tapered needle attached to the vertically-acting piston throttle in such a way that its position can be regulated for permanent adjustment, consequently this handle lifts with the throttle, and, as it rises up, it increases the jet opening, but at a point in the tube in which it travels is a jet hole of such a size as to meet maximum requirements, and travel beyond this point does not affect the mixture, but merely the throttle. The throttle already mentioned is operated from the handlebar. The air supply is regulated by a conical choke tube formed by a coiled spring, which permits additional air to enter between the coils, as the increasing engine speed causes it to open by suction. A feature to be noticed in these carburetters is the split pipe connections tightening up a clamping ring and screw—very simple and effective.

THE CLIPPER TYRE CO., LTD., Steelhouse Lane, Birmingham (No. 6).—The motor cycle tyre made by the Clipper Company is called the Reflex Clipper Ideal. It is built on motor car tyre lines. Other patterns of these motor cycle tyres comprise those of the rubber studded type and ribbed, both beaded edge and wired. The Clipper butt ended tubes for motor cycles are also displayed. Among motor cycle accessories may be mentioned the Silent repair outfit in a leather roll, Perfect patches, solution, inflators, rubber belts, and a complete range of motor cycle suitings. Among the latter is a new form of chest protector, and the Clipper Company show a motor cycle over boot for the first time, also a new wood rim for motor cycles, the special features and advantages of which are demonstrated at the stand.

COLSTRICTOR TYRE CO., London, E.C. (No. 69).—The motor cycle tyres shown by this firm are all of the wired-on pattern. The peculiarity of the construction is that the fabric is wrapped round the wires. The chief type shown has a groove tread.

THE COUNTY CHEMICAL CO., Bradford Street, Birmingham (No. 259).—A new metal polish in powder form, called Carshine. For use it is mixed with petrol, a tin costing sixpence making a pint of excellent metal polish. The makers point out that petrol as a polishing medium has many advantages. In ordinary metal polish a high flash point spirit must be used to enable the makers to obtain cheap railway rates. Petrol is a low flash point spirit, very pure, and producing a much better polish. It is certainly an advantage to be able to carry a polish in powder form



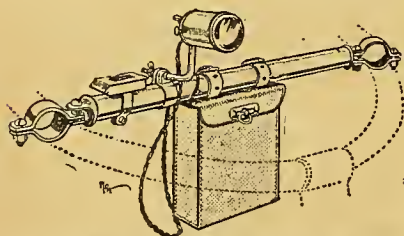
### The Olympia Show.—

which has merely to be mixed with a small quantity of the contents of the petrol tank to become immediately effective.

CHARLES CUTHBE, Great Eastern Street, E.C. (No. 12).—The Max Cycar tyre, which has already been described in *The Motor Cycle*, and a new cover containing 90% of pure rubber. The maker informs us that £50 will be given to anyone who can prove by analysis that the percentage of rubber in this cover is not correct. Mr. Cuthbe is also introducing a quick repair patch and a special solution.

### FIREPROOF WIND SCREENS.

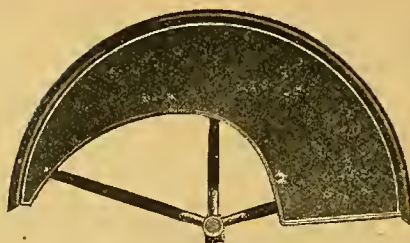
DOVER, LTD., Northampton (No. 214).—In addition to the Exonite steel rims and other well-known products of this firm, the chief exhibit is the new non-inflammable Exonite wind screen for sidecar work in which the Exonite is as clear as the clearest celluloid. Its elliptical shape renders it very graceful. Sets of box spanners, pumps, and some neat black Exonite coverings for handle-bars are among other notable features in the exhibit.



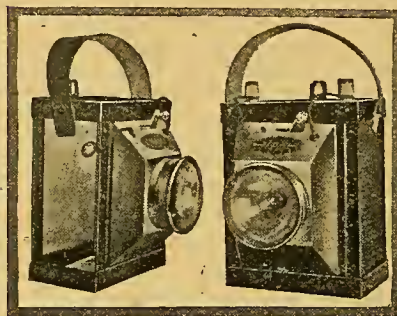
A. H. Hunt's crossbar with electric light and H. H. battery for reading speedometer and route card. The H. H. match carrier may also be seen.

THE EISEMANN MAGNETO Co., Berners Street, W. (No. 169).—The Eisemann magneto illustrated on this page is suitable for  $3\frac{1}{2}$  h.p. engines, and is made waterproof throughout. It differs from other waterproof magnetos on the market, since, instead of making the joints between the magnets and the end plate waterproof by means of packing, there is a dome-shaped piece bolted to the pole pieces, underneath the magnets, and separate end plates, making a metal-faced joint and screwed to the dome cover, prevent any possibility of oil or moisture reaching the armature chamber. The new model also has a new design of pole piece, which is of the single step type, giving a very wide range of effective spark, as, although at the retard, the spark is slightly less hot than at the full advance, it is sufficiently powerful to allow the engine to be started with the lever right back. The most effective spark is obtained with this magneto five degrees before full advance, while the depreciation at full advance is only 5%.

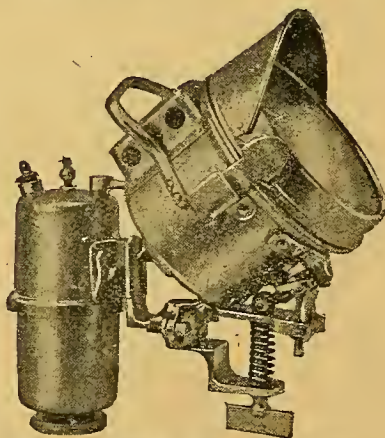
GOODRICH TYRE Co., Golden Lane, E.C. (No. 13).—The speciality of this firm is rubber-studded tyres, in the construction of which they were early in the field. The Goodrich tyre is of very high quality, and we understand that during the 1913 season a vigorous programme has been arranged, so that a good deal



Holt's special sidecar mudguard on the Service stand.



(1) A. H. Hunt's electric lamp, showing frame work to carry H. H. dry battery. (2) The complete lamp and battery.



Kerry lamp bracket which may be adjusted to any angle.



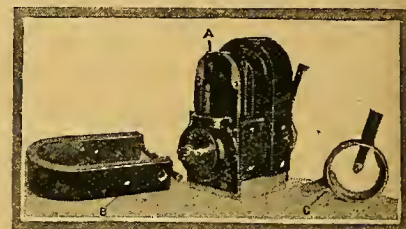
S. Smith & Son's handle-bar stop watch.

will be heard of these tyres in various competitions.

GORTON RUBBER Co., Openshaw, Manchester (No. 7).—This firm is showing motor cycle tyres of various types and sizes. Particular care is taken in the manufacture to render these tyres both durable and serviceable.

W. H. HALLIWELL, Priory House, Coventry (No. 236).—The chief item of interest to motor cyclists on this stand is the Endrick decompressor. This is a device which fits in the inlet valve cap, the thread being made the same size as a sparking plug thread. In some engines it can be screwed in the centre of the combustion head.

THE HANOVER RUBBER Co., Goswell Road, E.C. (No. 131).—This firm specialise in the Shamrock-Gloria belts and tyres provided with heavy tread, both rubber and steel-studded. All types of rubber goods used in connection with the industry are also shown, such as pump connections, horn bulbs, lamp connections, etc.



Eisemann waterproof magneto.  
A. Dome shaped cover to armature chamber.  
B. Magneto removed. C. Contact breaker ring.

HANS RENOLD, LTD., Manchester (No. 175).—A most interesting feature of this exhibit, where the Renold chains are shown in great variety, is a show case describing and illustrating with actual parts the manufacture of the Renold chain and the testing of the materials. This involves no less than 109 processes and 6,145 operations. There is also an assortment of milling cutters for the making of sprocket wheels.

### ELECTRICAL NOVELTIES.

A. H. HUNT, Cannon Street (No. 162).—The chief feature of the exhibit is the H.H. Hellesen dry cells. During the week a certain number of these batteries will be given away free of charge under certain conditions, and a special leaflet giving full particulars of this offer can be had at the stand. This firm sell a new pattern portable electric hand lamp, consisting of a metal frame carrying a dry battery to which a lamp is fixed. This is suitable for the Flash type, which is used for motor cycles. Leather carrying cases, and also a special metal case, are supplied for carrying these batteries. Other items shown include the H.H. Morse key signalling lamp, the H.H. cyclecar switch, insulating tape in tins, high and low-tension wire, armoured gas connections, and patent combined belt purchases and cutters. For cyclecars there are steering wheels, push button switches, and tyre pumps. The H.H. matchbox for the handle-bar is a useful accessory. The matchholder is provided with an efficient clip, the matches are held down by a special clip the whole being protected by a watertight lid

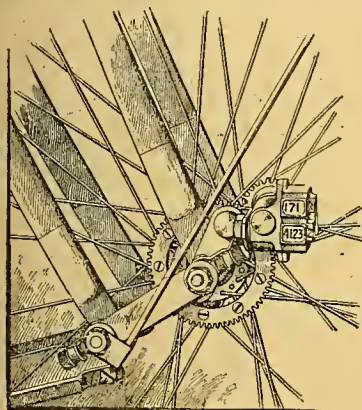


**The Olympia Show.**

on which a striker is provided. Another novelty is the Maplite for lighting route cards, maps, speedometers, or watches. This is fitted with universal adjustment. A very attractive item is the new electric lamp, which is made in two sizes suitable for a motor cycle or to be used as a side lamp with sidecar or cyclecar. The finish is excellent.

CHAS. MACINTOSH AND CO., Manchester (No. 9).—This firm was one of the earliest to enter upon the manufacture of pneumatic tyres. The type shown is provided with a peculiar pattern tread, consisting of three studs followed by across, this pattern continuing round the tread. Great care is used in their manufacture, and their non-skid properties should be excellent.

MARKT AND CO., Clerkenwell Road, E.C. (No. 160).—A full range of Jones speedometers, which have been so

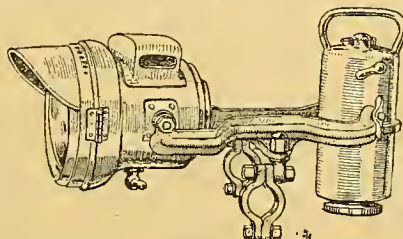


Markt & Co.'s cyclometer drive by means of spur gearing.

successfully used on motor cycles since their introduction into this country. The Jones was one of the earliest speedometers on the market, made suitable for motor-cycles. As this speedometer has reached a high stage of perfection no alterations have been made for 1913. A novelty will consist of a cyclometer, driven off the front wheel by means of spur gearing. Considerable difficulty has been experienced in the past in getting one of these instruments to stand the heavy work required by a motor cycle. The new model, however, instead of being driven by a star wheel and striker which used to give trouble, is now provided with a

strong gear drive, which is both smooth and steady. The star wheel mechanism, especially in cases when the instrument is placed some distance from the centre of the wheel, had to withstand very heavy shocks from the striker, which used to damage the internal gears, causing the case to open and allow wet and moisture to enter, which resulted in the ruin of the instrument. For cyclecar purposes a bracket will be provided for clamping to the steering arm. The Baby Giant pulley remover is another useful accessory shown by Markt and Co.

THE MICHELIN TYRE CO., Fulham Road, Chelsea, S.W. (No. 10).—Michelin tyres do not undergo any great alterations for 1913. For lightweight motor cycles and front wheels of machines of 3½ h.p. and upwards, the company is making a light cover with wired or beaded edges, which is shown both in trident and standard patterns. There is also a substantial cover for back wheel work of machines over 3½ h.p. The famous Michelin Semelle steel-studded leather protected cover remains as before. All types are made with both wired on and beaded edges. A new form of the standard cover will be rounded in form. As regards quality and durability Michelin tyres are second to none.



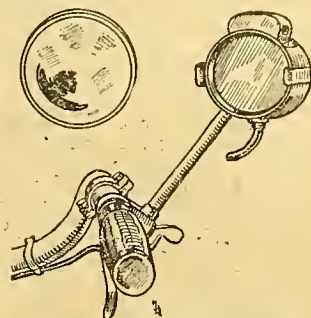
Miller lamp set.

MIDDLEMORE AND LAMPLUGH, LTD., Birmingham (No. 179).—This firm shows a good selection of saddles, toolbags, etc. Their heavy motor cycle saddle is a fine piece of work, and is particularly well sprung.

**A NOVEL REAR LIGHT.**

H. MILLER AND CO., Miller Street, Birmingham (No. 178 Gallery).—Miller's motor cycle lamp, the Cetolite, is made in two sizes, and fitted on a very substantial bracket, which can be attached to the handle-bar or handle-bar stem. Another model is designed to fit an ordinary lamp bracket. In connection with this Miller's new rear light can be used, the rubber tubing from the generator branching in two directions. This rear

light fits on the right-hand side of the handle-bar, and throws a red light to the rear, but in the day time a mirror is fitted over this to give a view of the road behind.



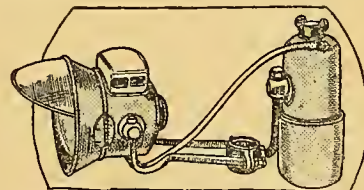
Miller's handle-bar red light. A mirror fits on to the lamp for use in day time.

DAVID MOSELEY AND SONS, LTD., Aldermanbury, E.C. (No. 5).—A large range of motor cycle tyres, including the Ardwick rubber-studded pattern, built up of three-ply canvas, with studded-rubber tread, and the three-ribbed pattern made in two qualities for cyclecars and also for motor cycles.

**A NEW SADDLE.**

LEATHERIES, LTD., Sampson Road North, Birmingham (No. 215).—The chief item of interest is the No. 81 Empire de Luxe saddle. The patented frame is arranged to be adjustable to any required angle. The top is a pressed steel plate comfortably padded and covered with best quality leather. The exhibit comprises valises and belt and tube cases.

THE PALMER TYRE, Shaftesbury Avenue, W. (No. 36).—Here are to be found examples of the famous Palmer cord and fabric tyres. It is interesting to note that the 3in. Palmer cord tyres entered for the tyre trial run in connection with the Six Days' Reliability Trial in the West of England this year was successful in gaining the highest possible award, which shows they have reached a high point in construction and that the material is of the best.



P. & H. black finished head lamp and generator set.

POWELL AND HANMER, Birmingham (No. 172).—A large range of the P. and H. lamps suitable for motor cycle and cyclecar use is shown here. Some of these are self-contained; in other cases the generator is separate.

PRICE'S CO., LTD., Battersea, London, S.W. (No. 146).—The usual samples of Price's lubricants, so popular with motor cyclists, consisting of Motorine C, which has proved its worth for many years; Huile de Luxe, one of the highest class lubricants on the market, on which many successes have



Complete F.R.S. electric lighting set for cyclecars, made by S. Hall and Sons.

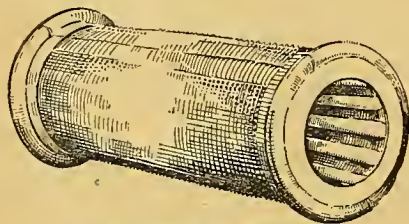


### The Olympia Show.—

been gained both on the track and on the road; special grease for lubricating motor cycle hubs; and grease for gears of all types.

### DETACHABLE TREADS.

ALFRED ROBERTS AND SONS, LTD., Gripwell Works, Birmingham (No. 238).—Detachable studded leather bands with hooks to clip on to the beaded edge of the rim, and gaiters on the same principle for protecting the tyre outside, are features on this stand, while the Roberts reinforced liner affords useful protection on the inside. Besides this, the firm have a new motor cycle cover of special design. Their belt and the Vulco Junior tyre repair outfit also calls for remark.



Pedley rubber handle-bar grips.

SELF-SEALING RUBBER CO., LTD., Birmingham (No. 133).—A peculiarity of the Hermetic tyres is the zigzag pattern which runs round the tread. It is also shown in the form in which steel studs are placed round at intervals. The tyre is manufactured on sound lines, and is made in all sizes. Of course, a suitable tyre is made for cyclecars. Another innovation is the Hermetic belt made by a patent process. In its construction layers of wire gauze are run through the canvas, and the belt, we understand, is non-stretchable. Repair outfits, etc., are also shown.

THE SERVICE CO., LTD., High Holborn, W.C. (No. 224).—Among the most prominent of the accessories shown are a collapsible luggage box, constructed out of sheet metal. It is meant to be attached to the carrier by straps, and when folded lies completely flat on the machine. A spring footrest, the portion on which the foot rests being heavily shod with rubber; it is clipped to a tube suspended on an enclosed spring, which adds greatly to the comfort of the rider. The H.P. cyclometer transmission, which is quite a useful device, allowing the cyclometer to be easily read from the handle-bar. Map and route-card holders for military motor cyclists, but should be useful to ordinary riders. A new two-speed gear, and a handy device, consisting of two flat metal leaves, which clamp tightly over and press repair patches on to punctured tubes, and a petrol gauge. The Service Co.'s clothing exhibit is also well worthy of close inspection.

THE STERN SONNEBORN OIL CO., Royal London House, Finsbury Square, E.C. (No. 237).—The well-known brands of oils and greases which are known as Sternal. Those which interest motor cyclists most are the Sternal motor cycle oil, grease, and Sternaline for chain lubrication.

R. SURRIDGE, 58, Lomond Grove, Camberwell, S.E. (No. 21).—Holdtite patches are here shown in all sizes, also repair outfits, rubber terminals, and magneto covers. There is also a new gas lamp connection with a big bore, ensuring a steady flow of gas and a small trap or filter for preventing any moisture being carried into the burner.

H. TAYLOR AND CO., Store Street, Tottenham Court Road, W.C. (No. 166).—A notable instrument is the Robinson combined milometer and speedometer, worked by gear and flexible shaft from the front wheel, and registering up to 10,000 miles and speeds of fifty miles an hour. A red hand registers the thousandths, a black hand the hundredths, while a white pointer registers the trip. In addition to this a small inset dial records the tenths of a mile.

HERBERT TERRY AND SONS, Redditch (No. 168).—Every variety of spring is to be found here. There is also a large selection of wire controls suitable for carburettors and brake work. Special reamers are supplied for use with a taper pin sold by the firm. The valve lifters, spanners, etc., are well known.

### SPHINX PLUGS.

THE SPHINX MFG. CO., Bradford Street, Birmingham (No. 197).—Of course, the chief item of interest on this stand is the Sphinx sparking plug. This plug is made in a variety of sizes and shapes. A new terminal is shown, and a belt fastener with a hinged jaw made on the principle of lazy-tongs. The pull of the belt is sufficient to keep the joint tightly closed on to the belt. The combined belt punch and cutter is a well-made, serviceable article, and the spring handle-bar is an item we shall refer to again.

THE TORMO MFG. CO., Bunhill Row, E.C. (No. 147).—Sarolet engines,  $3\frac{1}{2}$  h.p.  $85 \times 88$  mm., mechanically operated valves, chain-driven magneto, ball bearing crankshaft; a similar engine, only with gear-driven magneto; 2 h.p. and  $2\frac{1}{2}$  h.p.,  $66 \times 72$  mm. and  $66 \times 86$  mm. respectively. The only alterations to these engines are that the magneto is gear-driven, and there is a slight modification in the timing gear. The F.S. ball bearings, which are at present fitted to many makes of motor cycles, will also be on view.

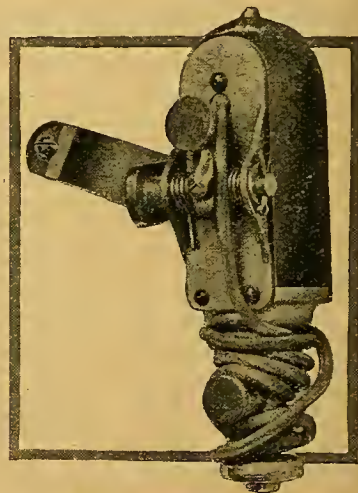
THE UNION RUBBER CO., Manchester (No. 186).—One of the most interesting exhibits to be found on this stand is the new Threo belt, which is built up of a special fabric. This is one of the most flexible rubber belts we have ever examined. The firm also make a speciality of motor cycle tyres of all types and sizes, carbide, lubrication oil, patches, gaiters, tyre stopping, etc. The repair outfit is particularly well equipped.

THE VACUUM OIL CO., Caxton House, Westminster (No. 156).—A full range of lubricating oils. Vacuum B is one of the most popular lubricants; it is a pure mineral oil of heavy body, recommended by many manufacturers of motor cycle engines and used by many prominent riders.

C. A. VANDERVELL, Acton Vale (No. 161a).—This firm specialises in electric side and head lamps which are made in several patterns. These are lit by means of a dynamo in the case of cyclecars, but for motor cycle use an accumulator is recommended. A motor cycle head lamp is fitted to a neat universal adjusted bracket, and is supplied with a 4 or 8 volt bulb. A feature of the Ruthardt C.A.V. magneto is the excellent current generated at low speeds. There is also a well finished switch board for cyclecars.

THE VILLIERS CO., Wolverhampton (No. 229).—This firm is showing the Villiers free engine hub and also the Villiers two-speed gear, which has been previously described in these pages.

WEILL BROS., LTD., Kirby Street, Hatton Garden, E.C. (No. 221), exhibit a motor cycle lighting dynamo mounted on a clip designed to be attached to the back forks. It is provided with an adjusting screw which allows the tension of the friction wheel against the tyre to be varied. The dynamo is of the permanent magnet type, and is designed



Weill Bros' motor cycle lighting dynamo.

to adjust itself to the speed of the machine; that is to say, it gives a very good light at slow speeds and yet cannot damage itself by over-running at high speeds. The armature revolves in a long plain bearing, provided with a grease cup.

### PATCHQUICK.

MESSRS. WOODGATE, Tiverton, No. 165, are showing their well-known repair patches and outfits. This specially prepared rubber is also sold in long strips of various widths which should be very useful for repairing slits and strengthening parts of the tube that may have chafed against the beads or spoke-heads. The motor cycle outfits are sold in neat leather cases complete with three tyre levers.

WOOD MILNE, LTD., Preston (No. 11).—This firm specialises in steel rubber tyres, which have established for themselves an enviable reputation during the 1912 season. These tyres are shown in all sizes suitable for motor cycles.



(Continued from page 1378.)

**Our Show Report.**

This number of *The Motor Cycle* can not only claim the largest circulation, it is the biggest number ever offered to the public in connection with motor cycle matters.

**Late Arrivals at the Show.**

As usual there were many late arrivals in the Show, most of Sunday the machines were flowing into Olympia, and some were not there on Sunday night. However, on Monday, there was only one cyclecar absent.

**I.F.M.C. Meeting.**

The Dutch M.C.C. will be represented at the meeting of the International Federation of Motor Cycle Clubs by the club president, Mr. Robert R. toe Laer, who took an active part in the English-Dutch trial in Holland last August.

**Paris Show.**

The Automobile Motor Cycle and Cycle Show at the Paris Salon will open on December 7th and remain open until December 22nd. Among the British motor cycle firms who will exhibit, either direct or through agents, are: Humber, Ltd., Douglas Bros., Triumph Cycle Co., Ltd., New Hudson Cycle Co., Ltd., etc.

**Illumination of Number Plates.**

The police have been rather active in the Coventry district lately with regard to the illumination of number plates on motor cycles. Some riders are very careless in this connection, but we know of one or two instances where men have been stopped and their names taken when the letters and figures have been easily distinguishable.

It is difficult for a motor cyclist to convince magistrates on his own testimony against that of two or three police officers that his number plate was properly illuminated, therefore the best course for a motor cyclist who is stopped is to stay where he is with the police and request them to wait also until individuals, motor cyclists or otherwise, come along who can help him with regard to evidence.

**An Officially Observed Sidecar Ride.**

On Wednesday, the 20th inst., J. T. Gibbons started on an A.C.U. officially observed ride from London to Yarmouth and back, a journey in which he should cover 1,500 miles. The original idea was to take two routes (starting on the 19th inst.), one to Norwich and the other to Yarmouth, but as he was consider-

ably delayed in starting owing to carburettor trouble he did not leave until 1.40 on the morning of the 20th to cover only one circuit. He restarted

**FUTURE EVENTS**

Nov. 25-30.—MOTOR CYCLE SHOW AT OLYMPIA.  
 „ 27.—Meeting of Club Secretaries at Olympia.  
 „ 28.—I.F.M.C. Meeting at Olympia.  
 Dec. 7.—M.C.C. Annual Dinner and Prize Distribution.  
 „ 27-28.—M.C.C. Annual Winter Run.  
 Jan. —.—A.C.U. Open Silencer Trial.

on Thursday last at 8 a.m. The ride was continued over Friday, Saturday, Monday, and Tuesday. The machine is a  $3\frac{1}{2}$  h.p. Alldays, with Millford sidecar. The equipment is as follows: Lucas lamps, Watford speedometer, Senspray carburetter, Armstrong gear, Wood-Milne tyres, Whittle belt, and U.H. magneto. The A.C.U. observer is R. W. Sprague.

**Police Traps.**

An electrically timed trap is arranged in the Burton-on-Trent neighbourhood. Machines are timed electrically and the operators are carefully disguised. Once caught in this trap, it is quite useless to fight the case.

Caution is necessary in passing through the village of Thurgoland, near Sheffield.

**R.A.C. Founder Members' Dinner.**

The pioneers of motoring will assemble at the R.A.C. on Friday next, the 29th inst., for the founder members' annual dinner. The Club was formed in 1897, and the first 300 members were styled "Founders." At the present time there are 170 left out of the original band.

**Clubs at the Show.**

The motor cycling organisations are well represented at the Show. The A.C.U. has a stand between Nos. 8 and 9 at the entrance to Prince's Rooms, where particulars regarding membership may be obtained. The A.A. and M.U. stand is No. 129a, close to Addison Road entrance. Their telephone number is 2399 Regent. It has been decided to extend the full membership to cyclecar owners for an annual subscription of half a guinea.

**Famous Machines at Olympia.**

During our survey of the motor cycle exhibits at Olympia we noticed the following machines, each meritorious in

its own way. Firstly, the  $3\frac{1}{2}$  h.p. single-cylinder Singer, on which G. E. Stanley recently broke the single-cylinder hour record. Likewise S. F. Garrett's actual record-breaking Regal-Green, on Messrs. Dunhill's stand, while the Excelsior Co. are showing one of their early models of about twelve years ago. A visitor asked the attendant on the stand what model they called it, the prompt reply was, "One of Crosbie and Blackwell's." Another machine was a  $3\frac{1}{2}$  h.p. Scott with a rifle mounted on the handle-bars, made for the Coventry Ordnance Co. On this stand was the Scott racer on which F. A. Applebee won the T.T. Race last July. Harry Long's 4 h.p. Singer is also staged.

**Show Banquet.**

The annual dinner of the Manufacturers' Union was held at the Waldorf Hotel on Friday evening last. Mr. Arthur Brampton, J.P. (president), was in the chair. After the dinner there was an excellent musical entertainment.

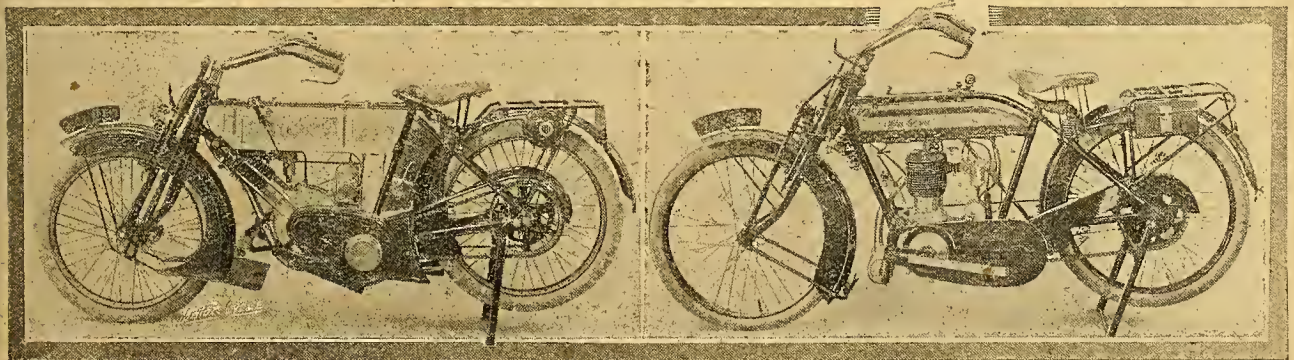
Mr. Edward Manville, who for six years held the presidency of the S.M.M.T., proposed the toast of "The Union." He spoke about the cyclecar, and mentioned that this vehicle caused the dividing line between motor cycle and motor car to vanish. He also spoke of the action of the Union in limiting racing and only retaining that which was really useful.

Mr. Arthur Brampton, chairman, replied.

Mr. Robert Todd, chairman of the A.C.U., proposed "The Show." Speaking of the cyclecar, he referred to it as a "hybrid," and mentioned the hours spent on defining it by the R.A.C. and A.C.U., stating that the definition came to was really no definition at all, but it was sufficient for the time being.

Mr. C. Vernon Pugh replied to this toast. He gave very interesting figures regarding exports of motor cycles. The number in 1904 was 776, which fell the next year to 688, and afterwards increased to 3,341 in 1910; 7,257 in 1911, and in the first ten months of 1912 to 10,491. Speaking of the definition of the cyclecar, he said in his opinion it should be a three or four-wheeled vehicle which followed motor cycle practice in every detail.

Mr. Harry Smith proposed the toast of "The Guests," to which Messrs. J. P. Holland and R. J. Meccredy replied. Mr. C. A. Hyde mentioned the excellent work done by Mr. Alfred Bednell, the secretary of the Union.

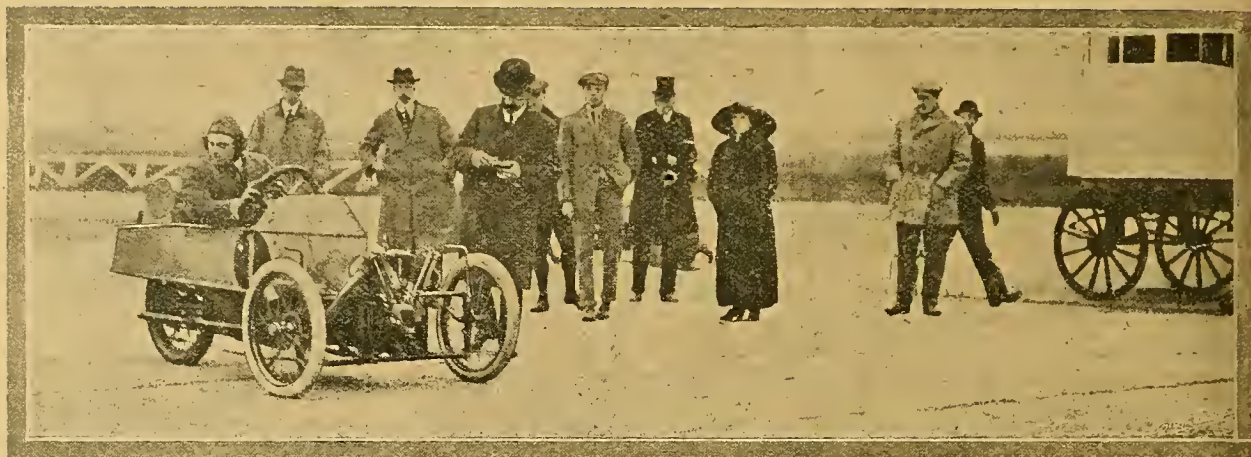


Colonial model P. &amp; M., which has a deep tank and a bigger ground clearance.

All-black Alldays, with two-speed gear and chain drive.



# RECORD BREAKING AT BROOKLANDS.



H. F. S. Morgan (8 h.p. Morgan runabout) at the start of his successful attempt on the hour record. He covered a few yards short of sixty miles.

**R**ECORDS are much sought after at Show time, and special efforts are being put forth to secure them. Quite a coterie of riders have made Weybridge their headquarters during the past week, and the results of their endeavours are as follow:

On Friday Hugh Gibson established two hours and 100 miles Class D (700 c.c.) sidecar records on a Bradbury standard speed model. The distance ridden in two hours was 91 miles 1,752 yards = 45.99 m.p.h. The 100 miles occupied 2h. 10m. 19s. = 46.04 m.p.h. The machine was equipped with Binks carburetter, Dunlop tyres and belt, Bosch magneto, and Bradbury sidecar, whilst Shell spirit and Wakefield Castrol oil were used. These records have yet to be confirmed by the A.C.U.

Gibson lost control of the steering at one period of the test owing to a sudden swerve loosening the handle-bar stem. One of the footrests hit a post close to the track edge, but nothing serious occurred to rider or machine.

Following in the path of the G.W.K. driver, whose record

performance of Tuesday of last week is published elsewhere in this issue, H. F. S. Morgan brought out his Morgan runabout on Saturday. He started at 2.40 p.m., in fine weather, and without a single stop put the cyclecar record figures very close to sixty miles in the hour. Mrs. Morgan and Dr. Morgan were at Brooklands to witness the attempt.

The cyclecar hour record, therefore, stood on Saturday evening last at 59 miles 1,123 yards, only 637 yards short of the coveted sixty miles in the hour. The fifty miles time was 50m. 28s. = 59.43 m.p.h. The Morgan was fitted with a V twin J.A.P. engine, 90 x 77.5 mm., with overhead valves, and had a wind-cutting single-seated body. Pratt's spirit, Castrol oil, Amac carburetter, two Continentals and one Hutchinson tyre were used. Morgan's fastest lap was at the rate of 62 m.p.h.

We understand that H. V. Colver (2½ h.p. Enfield), Axford (2½ h.p. Martin), and P. O'Donovan (2½ h.p. Singer) intend to make an attack on the six hours' Class B records during the week.

## THE INTERNATIONAL CONFERENCE.

In connection with the International Conference to be held at Olympia to-day (Thursday), at 4.30 p.m., the following delegates will attend:

**BELGIUM.**—M. Emile Benckelar, president of Committee L.V.B.; M. Fagard, president Motor Club Liegeois; M. Michant, secretary R.A.C.L.; Baron Northomb, president Commission Sportive R.A.C.B.

**CANADA.**—Mr. Wm. H. Wells, Canadian M.C.A.

**DENMARK.**—M. H. Christiansen, vice-president Danish M.C.; M. Matthiwsen, president Motor Cycle Club. Ellenham

**ENGLAND.**—Mr. E. M. P. Boileau, chairman Relations Committee of the Auto Cycle Union; Mr. T. W. Loughborough, secretary A.C.U.; Mr. Meyrick Jones, General Committee A.C.U.; Mr. G. F. Sharp, vice-president A.C.U.

**FRANCE.**—M. Longuemare, Commission Sportif A.C. de France; Mr. T. G. Fenton, Commission Sportif A.C. de France.

**HOLLAND.**—Mr. R. R. toe Laer, president N.M.V.

**ITALY.**—M. le Doct Oreste Togni, president dn Moto Club d'Italia.

**SWITZERLAND.**—M. Neher.

**U.S. OF AMERICA.**—Mr. Wm. H. Wells, Federation of American Motor Cyclists.

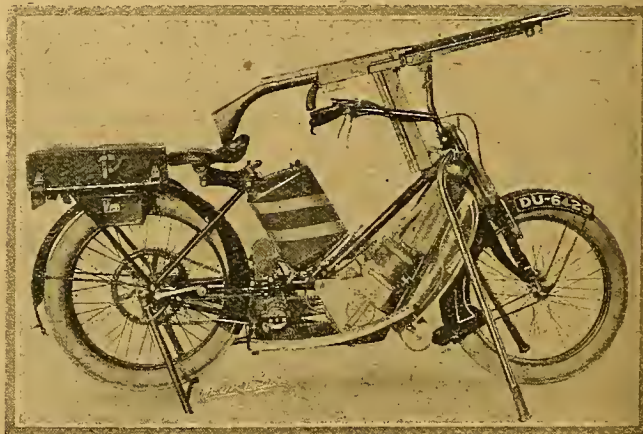
There will be a reception at 12.45, and lunch at the Royal Automobile Club at 1.0 p.m.

To receive the delegates at the Royal Automobile Club prior to the conference: Mr. J. W. Orde (secretary R.A.C. and chairman of the Conference), Col. H. C. L. Holden, R.A., C.B., F.R.S. (vice-president Auto-Cycle Union, representing the Royal Automobile Club, and the International Organisation of Recognised Automobile Clubs), Mr. Robert Todd (chairman Auto-Cycle Union), Major Lindsay Lloyd (vice-chairman A.C.U.), Mr. J. R. Nisbet (vice-chairman

A.C.U.), Mr. Otto Thomas (vice-chairman A.C.U.), M. Sweerts (*L'Aero*), representing the French Motor Press.

Afterwards the company will journey to Olympia on cars, arriving at 3.30 p.m.

To receive the delegates at Olympia: The Relations Committee of the Auto-Cycle Union, comprising Mr. E. M. P. Boileau (chairman), and Messrs. W. G. McMinnies, G. F. Sharp, W. Pratt, T. H. Tessier, and W. H. Wells.



A Scott with a quick firing gun of a new type, made by the Coventry Ordnance Works. The gun weighs 16 lbs. as against 48 lbs. of the ordinary type.





# Letters to the Editor

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the "Editor, The Motor Cycle," 20, Tufel Street, E.C., and should be accompanied by the writer's full name and address.

## The Godfrey-Garrett Case.

Sir,—In view of the unsatisfactory (to me) result of the last one-hour race at Brooklands, when Mr. Godfrey and I ran such a close race, and also the result of my protest when the verdict went against me, I should be glad if you would publish the following challenge, which I wish to make to Mr. Godfrey.

I would like to meet him in another one-hour race, using the identical machines that we used last. I have no doubt that the B.M.C.R.C. would be pleased to appoint a time-keeper and judge for the occasion. I am willing to race for whatever amount he likes (within reason), and also have the pleasure of saying that a challenge cup has already been offered by Mr. Wing, of the Premier Cycle Co., Ltd., and others for a race between us.

Hoping he will see his way clear to accept and fix a date, and thanking you in anticipation of your publishing this,  
S. F. GARRETT.

## Evolution of Cyclecars.

Sir,—There are now frequent letters in your paper bearing on the price of cyclecars. As an old motor cyclist, the owner-driver of a 15 h.p. car, and an engineer with a good knowledge of the costs of engineering work, may I say a few words on the matter.

Beyond confidence in the coming boom, I imagine that few manufacturers know exactly what line the demand will take as regards price. At £120 and over there is a wide range of choice for the purchaser, and for £160 he can get a motor car in miniature with all its attendant labour as regards attention required. For the man with only £80 to £90 to spend the choice is much harder, and he must see rather what he can do *without*, in order that the money may be expended in obtaining *quality* (which means freedom from subsequent annoyance) rather than quantity.

"Rusticus," for instance, can be provided with the simple equivalent of a £30 pony and trap for about £50 to £60, but will the demand be large enough to justify a manufacturer laying himself out for this class of vehicle? It would be very simple, and would probably be ideal for a large number of people. Lamps would not be included, but could be added cheaply second-hand by the purchaser of such a car and fitted by him if he is handy.

It is no use buying a complete makeshift at either £50 or £100 if it is to give trouble. The point a purchaser must watch is simplicity of construction, and his attention should rather be given to those cyclecars from which most of the features of a standard car are absent—I mean such as expensive sliding type gear boxes and differential back axles (although personally, I consider a differential to be absolutely indispensable, it can be placed more cheaply on a countershaft rather than on the axle itself). He must be content with a twin-cylinder air-cooled, or a single-cylinder water-cooled engine, and probably friction drive will give better results for a small outlay than a more or less crude three-speed and reverse gear box.

He must also be content with a simple type of body, and must remember that the more there is spent on the paint and varnish, the less will be left for essentials *under* the floorboards. Novices are apt to be led away by varnish and padded cushions, and if they have not been motor cyclists the choice for them is, indeed, a difficult one.

I am glad to see the letter from the Lanchester Co.

A. VON STRALENDORFF.

Sir,—Your article on "The Evolution of Cyclecars" is particularly *apropos* just now, when a new name and much revived interest is being bestowed on that handy little vehicle. It is, of course, abundantly evident to those of us who have been in the motor movement for any length of time, that only the name of the cyclecar is new; the machine itself, as you so truly point out, has been gradually evolved from the Quad of 1899. It is equally obvious that those who know so little of motor history as to claim that the cyclecar was "discovered" two years ago, are mere babes in motor lore: their experience apparently goes no further back than to the introduction of the Bedelia in 1910.

The writer of your article mentioned that he went through the 1,000 miles trial of 1900 on an air-cooled Quad; I remember him well. I myself took part in that historical event on a 3½ h.p. air-cooled Decauville, a little vehicle which would to-day be called a cyclecar. Later—1902-3—I had a lot of fun with a 5 h.p. Clement. The author omits (probably through lack of space, rather than the fault of forgetfulness) reference to the Victoria Combination, two specimens of which participated in the 1,000 miles of 1900; as did a Gladiator and a M.C.C. Triumph. Also, what about the Jackson three-wheeler, the Yankee Buckboard, and the four-wheeled, single-seated De Dion spiler, on which Mr Chas. Jarrott used to whiz about the country? The young hopefuls who have "arrived" during the last couple of years know not these; and the other ancestors of the machine which they have just "discovered!"  
H. W. BARTLETT.

## Fair Treatment.

Sir,—I was pleased to see the Rev. W. A. Douglas Hamilton's letter in your issue of the 14th inst. I think the incident quoted and also the following ought to be taken to heart by the manufacturers. Some months ago a small crack appeared in the crank case of my 1910 Pradbury at the front frame lug, and at the makers' request I sent the machine to them for inspection. They repaired it with a new 1911 crank case and frame, put in new valves, made several other minor improvements, and returned the machine to me promptly looking like new. The whole of this was done free of charge. I also find the same firm send all renewals by return of post, and as ordered, which is quite as important.

Of course, I have no interest in the firm, but I do appreciate their businesslike methods as well as the excellence of their machine.  
F. E. PETT.

## The Wear of Small Engines.

Sir,—I read Mr. Claude Middleton's letter in your issue of the 14th inst with great surprise, and must say my experience with a Douglas is quite contrary to his.

Five years ago I bought one of the first Douglas motors and have been running it continually since, and have covered at least 25,000 miles with it.

I have not had any occasion to have either new cylinders or pistons fitted. The only replacements to the engine so far have been new rings and two exhaust valves, and bushing flywheel side of engine, which has altogether cost me thirty-five shillings.

I have a great number of friends who ride Douglas machines, and their experience is similar to mine.

I can only come to the conclusion that Mr. Middleton must have under-lubricated his engine.

W. H. KIDDELL.



### Tyre Wear.

Sir,—I should be grateful if any of your readers can help me out of a difficulty. The tyres on the back wheel of my 4 h.p. motor cycle (used with sidecar) give way very quickly close to the bead. What can I do to prevent this?

AN OLD READER.

### Sidecar Brakes.

Sir,—There appears to be an increasing inclination in some quarters towards the fitting of a brake to the sidecar wheel. At first sight this doubtless appears admirable, as the elaboration of the sidecar emphasises the desirability of efficient brake power.

I venture to think that the suggestion is a mistake. Already the stresses to which the forward members and attachment parts of the sidecar chassis are subjected are very severe. Many of the modern underhung sidecars have the weight carried too far forward on the back axle. Braking resistance, should brakes be fitted, will also be imposed upon the forward members of the chassis, adding an altogether new and unfair strain upon the often overloaded forward tubes.

Experience seems to prove that with reasonable care in driving the extra brake is unnecessary, and it appears to me that it will only be an added source of danger to sidecar users.

SIDECAR.

### Wear of Small Engines.

Sir,—I read "Ixion's" remarkable example and the unfortunate experience of Mr. Claude Middleton in your issue of the 14th inst. with great interest.

During the latter part of this year I have been using a similar machine (new), and for the first thousand miles purposely kept the engine on the point of smoking, then began to reduce the oil supply to normal, but soon had trouble.

I found by experiment that with the sight feed set to drip slowly only one quarter of the oil out of the pump reached the engine, the remainder leaking back to the tank, and this is written to warn others, novices especially, not to trust merely to seeing some oil dripping.

The old-fashioned outside oil pump with two-way tap has given me more satisfaction than the enclosed tapless pattern.

J. I. HUNTER.

Sir,—Referring to "Ixion's" remarks quoting experiences of the above, I beg to say that I know Mr. Hutchison's machine. Without wishing to detract from the very creditable performance of the Douglas motor cycle, I feel obliged to criticise the figures quoted. Nothing was spent on belts, but Mr. Hutchison omitted to state that he had two in use all the season, and that, whilst both may be good for further use, they are nearing the end of their lives. All was not right in the gear box "about 2,000 miles ago" (if I may coin an expression), and no mention is made of its journey to the works at Bristol, where a ball race and a clutch lining were replaced, albeit free of charge, by the makers.

One new tyre was purchased, but no account was taken of an old spare cover which shod the front wheel while the original front tyre did its share of back wheel work.

I confirm the statement about the life of the chain, but only the frequent and thorough cleansing it received at Mr. Hutchison's hands enabled it to run so long. Another Douglas under my observation wore a chain to destruction in 4,000 miles. It was cleaned and lubricated twice. Mr. Hutchison cleans and lubricates his chain every four hundred miles; the result, after 5,800 miles, is the pitch is not yet too great to prevent further use.

In submitting details of costs, the temptation to suppress items which are likely to make the performance of a machine good instead of extraordinarily fine is great, and perhaps pardonable, but false impressions and dissatisfaction are generated thereby in the minds of novices and inexperienced riders.

H. M. STICH.

Sir,—In re Mr. Middleton's letter in your issue of the 14th inst., giving his experience of the Douglas motor bicycle, I think a word of protest is necessary, as such a letter, however truthful, is apt to create a wrong impression. I do not know how Mr. Middleton treats his machine, but I have used Douglas motor cycles for the past four years and have never yet experienced a breakage in a vital part. Last year my mileage was about 4,000, and I required two fork

springs, one sparking plug, and one back cover. This year my mileage has been just over 2,000, and I have not spent a penny on replacements or repairs. My sole trouble has been one puncture. I have not had a plug out or taken the belt off. I ride in all sorts of weather, using Eli Clark's mud-shield both in summer and in winter. I average between twenty-five and thirty miles an hour; but I give the machine fair play as regards lubrication, and I never run on full throttle. The only trouble that the machine gives me is cleaning, but it is a trouble that I evade as much as possible. Clark's shield keeps the engine clean, and the rest does not matter very much. I never grind in valves nor amuse myself taking the engines to pieces, for the machine always runs faster than I have any need for. But I have no doubt that I could abuse it and smash it up if I wanted to; but I don't.

G. A. MACKAY.

Sir,—When writing the footnote to my letter kindly published in your issue of November 14th, you no doubt took it for granted that the big-end seizures were due to insufficient lubrication (and you therefore assume that I have under-lubricated always), whereas they were owing to the firm who had ground down the steps to take up wear making one big-end very tight. The engine consequently was given lots of oil—in fact the belt was brought to slipping point by the liquid shower from the rear silencer. (Most machines would have stopped with plug trouble.) However, it seized—the first time within a mile of starting up.

Under normal circumstances I have lubricated according to the makers' instructions, but lately I have periodically augmented the regular doses by giving extra charges until the smoking point is just reached.

CLAUDE MIDDLETON.

[We are obliged to hold over many other letters received on the subject of "Wear of Small Engines."—Ed.]

### Hoods and Screens on Cyclecars.

Sir,—On reading the article "Accessories for Passenger Motor Cycles," by Mr. B. H. Davies, in your issue of November 14th, I was thunderstruck to gather from the writer's remarks that the cyclecar is incapable of affording proper weather protection by means of efficient hood and screen. This is the very point where a great many people had hoped to find the cyclecar scoring over the motor cycle and sidecar, and certainly I was about to purchase one for this advantage alone.

Surely for many years past now 6 h.p. and 8 h.p. small cars, such as the Rover and Swift, have been giving great satisfaction fully equipped with proper hoods and screens so as to render them weatherproof.

Now, if such a small car can carry hood and screen and yet not be "stopped down to a crawl" by the wind resistance,



AN AMATEUR'S ACHIEVEMENT IN 1912.

D. S. Kapadia who has had a remarkable run of successes on his 8 h.p. Rex-Jap during 1912. In Essex Motor Club contests he won three cups, two gold, six silver, and one bronze medal, the contests including hill climbs, reliability trials, a sidecar race at Brooklands, and a speed-judging contest.



then a cyclecar, with its much lighter chassis and body, ought to be still better able to carry such accessories and maintain a fair speed. I consider this a vital point, and one which ought to be settled without delay, as if it is a fact that a cyclecar of, say, 8 h.p., is incapable of travelling at fair speed on average roads with hood and screen up to protect passengers from the storm, then, in my opinion, one-half of its advantages are lost.

If this is not a fact, I think that the article is one which is likely to mislead.

H. H. S. TEMPLETON, M.R.C.S., L.R.C.P.

### The Unborn Runabout.

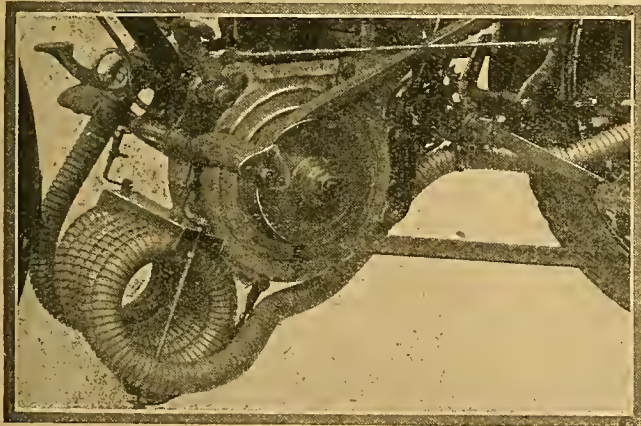
Sir,—I have read with interest "Ixion's" article *re* the above, in your issue of November 14th. The matter being one of greatest interest to the average public, I beg leave to encroach on your valuable space sufficiently to detail a personal experience. At the commencement of 1911, I drew out plans for a cyclecar almost identical with that required by the "old josses," and approached many firms with a view to manufacture. I was informed in every instance that the power and speed were too low to appeal to the public, viz., the "knots." Not to be outdone, however, I have myself constructed a cyclecar: 4 h.p. air-cooled engine, sociable seats, four wheels, direct raked steering, etc., the total cost to me being £31. The runabout is capable of an average of eighteen miles per hour, and will climb almost anything with two up. I have now driven this runabout over 4,000 miles, and have still the same 700 x 45 tyres, that seem little the worse for wear. I venture to think that it is not only possible, but probable, that a similar type will soon appear on the market at a price ranging around £55, now that the testing has proved so satisfactory.

This being so, there is no reason why those with an average pocket, content with an average speed, should not shortly find their want filled.

CYCLECARIST.

### Silencers.

Sir,—I have been interested in articles you have recently had in your admirable paper on silencers. I read them carefully, and from the data your contributor gave I believe I have turned out a simple cut-outless exhaust. One of the most persistent demands has been for a long pipe. In the accompanying photograph of my silencer there is 12 ft. of lin. pipe. Another requirement is large cooling surface. This silencer has 420 square inches entirely exposed to the surrounding air. The pipe is made of very thin steel, and its construction naturally lends itself to radiating the heat, thus cooling the gas within.



A long silencer pipe of flexible metallic tubing tried by a reader.

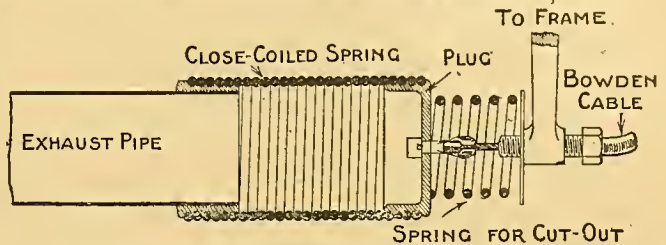
In practice I find the sound as quiet as any silencer with cut-out closed, and this without any baffle plates or a flattened end to the pipe. Also, the end of the pipe keeps almost dead cold.

E. A. DAVIES.

Sir,—From time to time silencers are brought out which embody novel principles as regards obtaining silence, with lack of back pressure, but it may safely be claimed that this silencer belongs to a class apart. At first sight it may

appear to defeat its own object, but a study of the principles of its action will justify the claims made for it.

It consists essentially of a close-coiled spring which is firmly attached at one end to the exhaust pipe of the engine. The free end of the spring is plugged up by a special plug, and there we have the silencer complete.



SPRING FOR CUT-OUT

The action is as follows: Just previous to the opening of the exhaust valve, the plugged spring effectually seals up the exhaust pipe from the atmosphere. The first rush of the expanded gases down the exhaust pipe blows open the spring, which is set at just the right tension, and in opening exposes a path to the gases quite sufficient for them to escape without back pressure. The instant that the flow of gas diminishes, the spring closes with a snap, and leaves a partial vacuum in the exhaust pipe. Thus, it will readily be seen, has the effect of assisting the exhaust of the succeeding stroke.

The secret of the silencer's success is that the exhaust gases are split up by the manifold coils of the spring. The temper of the spring is by no means impaired by the heat of the exhaust, as after several hours' continuous running it is possible to bear one's hand on the coils.

As the engine under test ran better with a pair of these silencers than with the standard pattern, it has not been found necessary to fit a cut-out. Should, however, the rider prefer one, it can easily be adapted as shown. In this case the fitting of an adjustable external spring puts a ready means to the rider's hand of trying his engine under different tensions of spring.

Several of these silencers have been made, and found to work satisfactorily, and the idea is provisionally protected.

H. H. PIKE.

### Cyclecar Definition.

Sir,—There seems to be a lot of controversy as to what constitutes a car on cycle lines. By taking the words separately, "cycle" indicates lightness. Now the lighter (consistent with strength) this cycle is made the less energy or force is required to propel it, hence lightness must be one of the cyclecar's features. I think everybody accepts the word "car" as meaning "something comfortable to ride in," so from the above the only possible definition of cyclecar is a vehicle light, cheap, comfortable, and accessible. Personally, I do not think there will be any great rush on the manufacturers' part to put cars in miniature on the market, as there is a limit to all things. If they do, and the public do not respond so readily as expected, manufacturers can acknowledge that they did not gauge the market correctly.

Simplicity is the key to everything, and I fail to see how you attain that end in a four-cylinder with its dozens of small parts, also gear box and live axle. The two latter fittings I will acknowledge, provided they are well designed, give no room for anxiety as to their reliability. Then there is the water cooling with joints and radiator. No, I do not think the motor car in miniature can be classed as a cyclecar.

My experience, and I know that one or two manufacturers will agree with me, is that the cyclecar of the future can only be on sociable-seated lines. Air-cooled twin-cylinder engine with ample power (8 h.p.), two speeds, with chain from engine to counter-shaft, thence by belts to back wheels. A differential is essential to any vehicle with a track of over 3 ft. Change of gears, etc., through variable pulleys, will soon give way to chain drives of the P and M, and Enfield types, as belts run best in perfect alignment, they also have a knack of slipping when not wanted to.

By the way, what about the compulsory reverse in these so-called cyclecars that weigh, it seems, anything from 5 cwt. to 12 cwt.? Have they one in truth or only in mind?

HAROLD E. DEW.



# A Tour in Switzerland

**B**EING in possession of the International Traveling Pass and Special Customs Card prepared by the R.A.C., I started from Folkestone on my 600 miles journey to Switzerland and crossed the Channel on a sunny October day at 12 noon. I reached Boulogne at 1.30 p.m., and had no trouble in getting through the Customs thanks to my papers and the kind assistance of the R.A.C. representative. I had taken the precaution of supplying myself with all the necessary tools and spare parts, such as plugs, tubes, springs for front forks, belt, etc., including a spare ordinary pulley in place of which a Mabon clutch was fitted. My luggage weighed 40 kilogs., and owing to the great weight of my machine a charge of 12s. 6d. was made for it. The first two or three villages gave me a good idea of French roads, which for some miles were terribly rough, and this was no doubt caused by the French road races, and I really

imagined that I should never reach Paris without breaking all the springs of my machine. However, fortunately for me everything went well for the first day, and I reached Abbeville at 5.30 p.m., and having decided to stop there put up at the Hotel de la France, where I took my first continental dinner.

## Abbeville to Paris, 104 Miles.

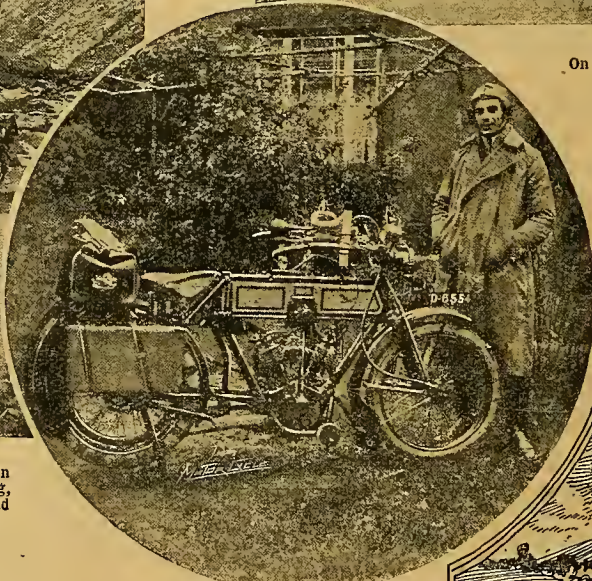
The next day, with the intention of reaching Paris in the afternoon, and after supplying myself with petrol and looking carefully over all the parts of my machine, I started at 8 a.m. for the capital. After travelling for fifty-three miles I arrived safely at Beauvais at 10.45 without the slightest incident happening. From there I intended to reach Pontoise about 1 p.m., which is twenty miles from Paris. However, the old adage "Man proposes and God disposes" applied in this case, and soon after I left Beauvais the weather



A winding mountain pass eight miles long, between Besancon and Pontarlier.



On the shores of the Lake of Geneva.



The writer and his Bat-Jap.



## A Tour in Switzerland.—

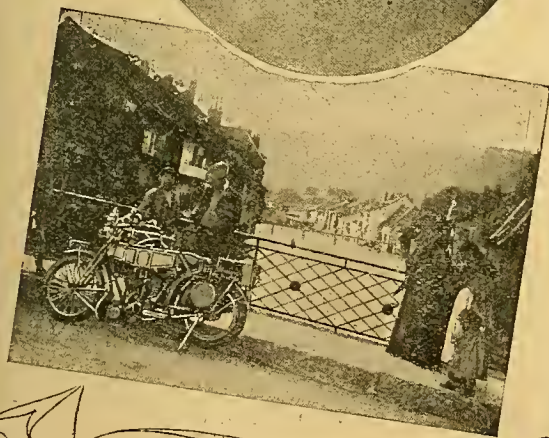
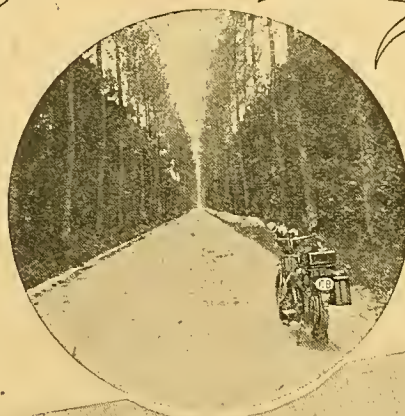
changed and it started raining, and did not cease all the day, but being determined to reach my destination I journeyed on slowly but carefully, my Lomax on the rear wheel acting for the first time as a non-skid. On reaching Meru I decided to have luncheon and an hour's rest, hoping by that time that perhaps the rain would have ceased, but my lucky star was not in the ascendant, for the weather did not change at all that day. However, I started on my journey again and reached Pontoise at 4 p.m. My desire was to reach Paris before nightfall, but I had little idea of what those odd twenty-one miles meant, and I had to ride along the worst roads that I have ever seen, and in some parts

Hotel opposite the Gare du Nord, and at 8.30 I was dressed and ready to sit down to a well-deserved dinner with my friends. The next morning I got up early to see about my machine and to take it through Paris as early as possible, intending to start for Switzerland the next day. But once more fate was against me, and I had to wait three more days until the sun once more was visible, and then I started from Bezons at 8.30 a.m. for Paris. At the Porte Maillot and at every other entrance to Paris all petrol-driven vehicles have to stop, in order to pay duty on the petrol in their tanks. For every litre a charge of 20 ct. (2d.) is made, which is returned on leaving Paris by any of the gates. Having passed the Arc de

On the pass to Chamonix, with  
Mont Blanc in the background.



The straight road, about fifty  
kilometres long, between Sionne  
and Vitry-le-Francois.



The pretty village of Ornans behind Besançon. The houses in the background are all built as in Venice, a river flowing between them.



A view of Chamonix, showing the snow-clad mountains.

they were so terribly bad that I had to ride on the footpath, but, of course, I was careful not to be caught by the police. Once I had to dismount when a farmer came along and put his walking stick in front of my machine.

After this little incident nothing more exciting happened, and I reached Bezons (eight miles from Paris) about 6 p.m. I knew it would be unwise at that time of night to ride through the thickest part of the traffic over greasy roads, so I put up my machine at the nearest place, which I took to be a garage, but which turned out to be a stable. Then, taking the next train to Paris, I put up at the New

Triomphe, down the well-known Champs Elysée, to the Place de la Concorde, and then to the Rue de Rivoli, I stopped to take some refreshment. It is no easy task to take an 8 h.p. machine across Paris, and immediately a curious crowd surrounded my machine, nearly stopping the traffic on the pavement. There were taxicab drivers, butcher boys, bicyclists, men of every age and condition, asking numerous questions in regard to h.p., make of machine, maximum speed, clutch, etc. There was no doubt about the admiration of my machine, and remarks such as "splendid," "wonderful piece of work," etc., were numerous. After giving a man the desired address of the agent



**A Tour in Switzerland.—**

in England of my Jones speedometer, I continued my journey through Paris. I carefully studied the map supplied by the R.A.C., and soon found my way to the Place de la Bastille, and passed through the thickest traffic I had ever been in. At last I reached the Porte Daumesnil, at the other end of the city, and there put up my machine until the next morning, intending to start as early as possible. The distance so far was 166 miles, which my speedometer registered exactly.

**Paris to Vitry-le-Francois, 109 Miles.**

After a hearty adieu to the proprietor of the garage, the owner of an old-fashioned  $3\frac{1}{2}$  h.p. machine, I made straight for Porte Daumesnil to get my 40c. back, paid the day before for duty on entering Paris. At 10 a.m. I had left Paris behind me, but only to encounter some more vile *pavé* for another seventeen miles until I reached Tournan, the end of the "Environ de Paris." It being a cold morning, I stopped there for a cup of coffee.

On looking over my route again on the famous "Carte Taride," I found to my joy that no more cobbles were indicated, except, of course, in and out of towns. Thinking that this was a chance for getting compensated a little for the bad roads passed on the other side of Paris, and without experiencing any notable incident I reached Sézanne (fifty-one miles) in time for luncheon, reaching Vitry-le-François about 5 p.m. Having travelled 109 miles, I decided to stay there and continue my journey the next morning. While examining the nuts of my machine, I found my trip indicator only showed sixty-one miles, but soon discovered that the little driving wheel on the front wheel was too high, and would not catch properly, which was probably caused through a knock whilst riding over the cobbles. That had been my best day's run up till then, having had a splendid straight road, the "Route Nationale" between Sézanne and Vitry being absolutely straight. My machine mounted the hills in such a splendid way that it seemed almost as if there were no hills at all, and I had done the right thing in getting an 8 h.p. machine, despite the increased cost of running, which is the only disadvantage against many advantages. Travelling between thirty and forty miles an hour over a good road really feels like sitting in a Pullman car.

Then followed a good dinner in the Hotel de la Cloche. Dinner in France is usually served between 6 and 8 p.m. at a fixed price ranging from 1f. 50c. to 3f. 50c., according to the class of hotel, and wine is included. The habitual drink is claret, which in that part of France is served one bottle for each person. Coffee is supplied in all the hotels, but is usually taken in a *café* near by. The breakfast is plain, consisting of coffee and milk, rolls and butter. Luncheon is usually served between 1 and 2 p.m., and is the same as dinner, excluding soup.

**Vitry-le-Francois to St. Dizier, 18 Miles.**

The next morning I decided to reach Besançon (129 miles), but, alas! the sky was grey with clouds, and it poured with rain all the way to St. Dizier (eighteen miles). Then, having waited in vain for the chance of better weather, I decided to stay in St. Dizier for the night.

**St. Dizier to Pontarlier, 130 Miles.**

Having started early to make up for lost time and being favoured with sunshine, I reached Chaumont at 9 a.m. and Langres at 9.40 a.m. That was one of the prettiest runs I had had so far, there being a splendid view from the top of the hill, looking down to the source of the Marne and the picturesque valley below. By a special signpost motorists are requested to drive slowly—partly on account of the wonderful scenery. I did not stop long in Langres, having to make up for previous stoppages. My route now lay through some more picturesque valleys to Gray—twenty miles. That place is well known by its *ruines féodales* and the pretty Forest de Bellecombe. Having lunched here, I started for Besançon at 2.30 p.m. This town has 50,000 inhabitants and is of great historic interest, especially from the date of the Revolution. It is a wonderful sight—the town being surrounded by high forts and gates. One can still see the citadel, which is the big military prison. After taking a snapshot of the forts from below, I tried to find my way to Pontarlier, the frontier of Switzerland and France. I wanted to reach Pontarlier before sunset, but I did not know that I had to go over a winding mountain pass about twelve kilometres long, over which it is impossible to exceed a speed of twelve miles an hour.

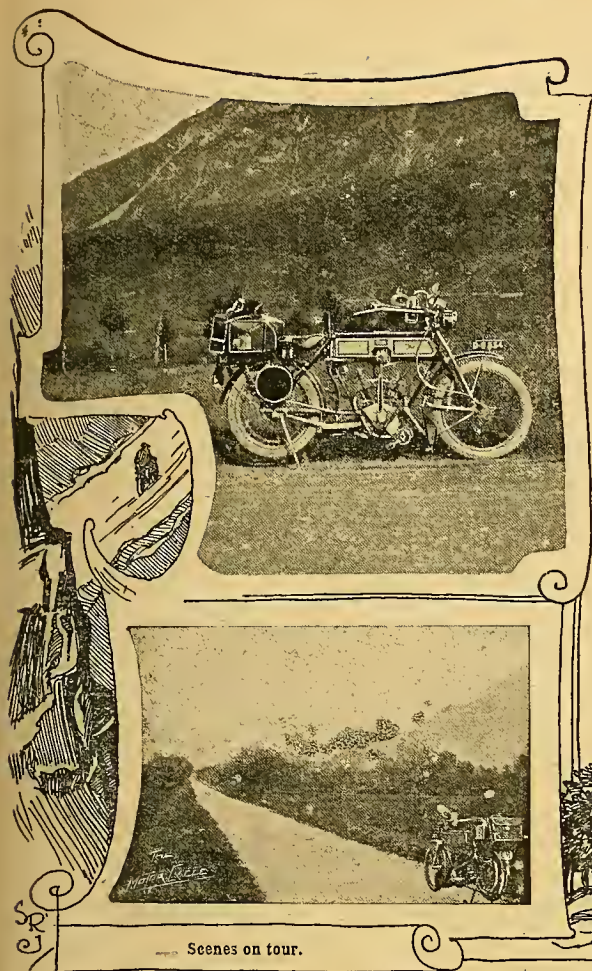
It being rather misry I could not take any snapshots after passing Besançon, but it was a very curious sensation to feel the cold Swiss mountain air creeping up my knees. Before reaching Pontarlier I found the clutch slipping and the engine going much too quickly compared with the speed. Thinking the clutch had been lubricated rather too much, I went on, reaching Pontarlier just before lighting-up time. I put up at the Hotel de la Poste, and then enjoyed a splendid French dinner. I was near my destination, having only thirty-two miles to go.

**Pontarlier—Yverdon.**

Next day I started, at 9.30 a.m., having plenty of time to spare to reach Yverdon in time for luncheon. I had to pass the frontier at Vallorbe, but my clutch gave me some more trouble when I was seven miles out of Pontarlier. After waiting more than two hours in trying to adjust it, I found out that the clutch was ruined by too much slipping, and there was nothing else to do but to change the clutch with the ordinary pulley, but that operation was easier said than done, for the nut would not come off in spite of my efforts. After some trouble the clutch was re-assembled, and I went back to Pontarlier to obtain a key to enable me to remove the nut. The manager of the cycle shop promised me to have it done in about twenty minutes, but that twenty minutes was extended to nearly two hours, as he had to make a key from an old bicycle tube.

At 3 p.m. I left Pontarlier once more, and at 3.40 I stopped in front of the Douane Française, the Swiss being ten yards further on. I had no trouble on the French side, but the Swiss Douane officer took about forty-five minutes to fill in the *visa de l'entrée en Suisse* in my I.T. pass. But everything comes to an end, and so did my journey, my destination being reached at 5.30 p.m.—a journey of thirty-two miles taking eight hours.



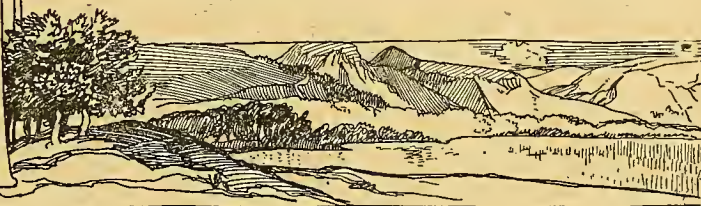


Scenes on tour.

I have been round the Lake of Geneva and to Chamonix, the nearest town to Mont Blanc, one of the prettiest excursions, provided the roads are dry. There are about fifteen kilometres of constant climbing over a mountain pass, but my machine—geared  $4\frac{1}{4}$  to 1—arrived at the top as if it had done five miles on the level ground. On my arrival there I heard that I was the rider of the first English motor cycle to visit Chamonix. I took my way back after a three days' visit over Chatelard, Vernayaz, Montreux, and Lausanne. At Chatelard I heard, to my horror, that there was no suitable road from there to Vernayaz. There are two ways out, and a Swiss *douane* officer told me I would have to take the Funiculaire to Vernayaz or go back the same way to Geneva. I decided on the first, and, after two hours' waiting, my machine was put inside the only waggon. I did not regret having taken this way, as it was a most delightful journey of seventy-five minutes over the mountains to Vernayaz. From there I continued my journey and reached Lausanne the same evening. I have made numerous little excursions from Montreux up to Caux (4,000 feet), Yverdon St. Croix (the winter resort of many Englishmen), and round the Lake of Neuchâtel—a delightful excursion.

There is no doubt from my experience that England is far ahead of any other European country in the making of motor cycles, not only in design, but in workmanship in general.

"TWIN."



## LIGHTING BYELAWS.

IT is a very great pity that it should be possible for county and borough councils to make byelaws concerning the lighting and other regulations governing motor cycles. At the present time we have a very complex set of laws and regulations concerning motor vehicles generally, and even a legal mind is often puzzled to know just exactly how the various acts and byelaws apply.

For instance, as mentioned recently, there is a byelaw in existence in Glamorganshire which compels sidecarists to carry two lights showing the full width of the vehicle. This byelaw is a supplement to the Lights on Vehicles Act (1907), and in the text it is particularly pointed out that it shall apply to every sort of vehicle except bicycles, tricycles (other than motor tricycles), or velocipedes. It would, therefore, appear that the byelaw has been particularly framed to deal with sidecars and all vehicles wider than a motor bicycle.

The above byelaw was amended as recently as the 11th inst. so as to require vehicles such as sidecars to carry lamps showing a red light to the rear as well as two lights showing the full width of the combination. Now red rear lights or reflex rear lights are excellent safeguards, but what we should like to see would be an Act making it universally compulsory to carry red rear lights and lights showing the full width of every vehicle with more than a single track. We always

recommend sidecarists to carry lights showing the full width of the vehicle, both for the safety of others and for their own safety's sake.

When regulations regarding lighting become universal there could be no complaint, but when one county applies it to one type of machine and a handful of counties apply the reflex rear light byelaw to some road vehicles and not to others, it becomes extremely difficult to comply with the law, and it is particularly hard on touring motor cyclists who may through ignorance of the law fail to carry these lights. In their own district there may be no compulsion to do so, and there are apparently no steps taken to advertise the byelaws outside the district to which they apply. Presuming that a London or Midland motorist was on tour in Glamorganshire with a sidecar with a single front or side light and no rear light, he would be liable to be summoned and fined up to 40s. and costs for the first offence and £5 for the second or subsequent conviction. He might have no idea that byelaws existed on the subject, and he runs into the arms of the law without the slightest knowledge of having infringed it.

At the present time the reflex rear light byelaws only apply to about six counties, and are not compulsory on pedal cycles or motor cycles. We see no reason why they should not apply to every vehicle. Decentralisation is at the bottom of the trouble.



# QUESTIONS and REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Choice of Machine.

? I have on order (unless I change my mind) a 1913 model 3½ h.p. Rover, F.E., with Sturmey-Archer gear. I want a machine to take any hill without having to rush, and, most probably, a sidecar attachment on occasion. I do not intend to do any riding in wet weather, but, of course, one may have from time to time to ride on wet roads, especially patches in the winter. (1.) What tyre would you advise—one rubber or steel-studded? I want the one least inclined to skid. (2.) Would you prefer the Armstrong gear, or is there nothing to choose between them now? Both starting off the ground. (3.) What do you think the most comfortable saddle? Brooks pan is supplied, I believe. (4.) I see the high gear is just double the low, ranging from 3, 4½, 6, to 7, 10½, 14. What gears would you advise for my purpose? I do not want great speed.—W.R.M.

The machine would do exactly what you require. (1.) We should recommend good tyres, made by a reputable firm. Rubber and steel-studded combination tyres are satisfactory. (2.) Either of the two gears would suit your purpose; both are excellent. (3.) Brooks pan seat is most comfortable, and highly to be recommended. We should recommend 4, 6, and 8 as suitable gears. You can, of course, further vary this with the aid of the adjustable pulley.

## Lights on Sidecars.

? I was fined 5s., including costs, and licence to be endorsed, for driving a motor cycle and sidecar without having a light on the sidecar, and my licence was also endorsed for failure to produce same to the police constable. Had the magistrates the power, in the first case, so to endorse licence, as the summons is under a byelaw and not under the Motor Act? In my opinion, they have exceeded their power. In the second case, the offence was quite a technical one, which could have been met with a small fine, and did not warrant at all an endorsement of the licence.—D.C.W.

Our legal adviser writes: "With regard to the points raised by 'D.C.W.' as to endorsing his licence, this matter of endorsement is not one in the discretion of the magistrates, but it has to be done where the person is convicted of any offence under the Motor Car Act, or of any offence in connection with the driving of a motor car other than a first or second offence for exceeding the speed limit. Driving a motor cycle without having a proper light is an offence in connection with driving, and failing to produce the licence is an offence under the Motor Car Act, so that these convictions would have to be endorsed. The byelaw, a copy of which was sent, does not in any way affect the question of lights on motor cycles. The byelaws

sent are made under the Lights on Vehicles Act, 1907, and it is expressly provided that that Act is not to apply to cycles or motor cars, and therefore cannot apply to motor cycles. I have heard from the Clerk to the Justices in connection with the conviction at Llandaff. He does not enclose a copy of the byelaw, but states that some few months ago a similar summons was issued against another person, and the matter was taken up by one of the automobile associations, and at their request the hearing was adjourned in order that they might consider the question. Ultimately the Society intimated that they did not intend to proceed with the defence, and the defendant was fined in the ordinary course."

## Misfires Except at Full Throttle.

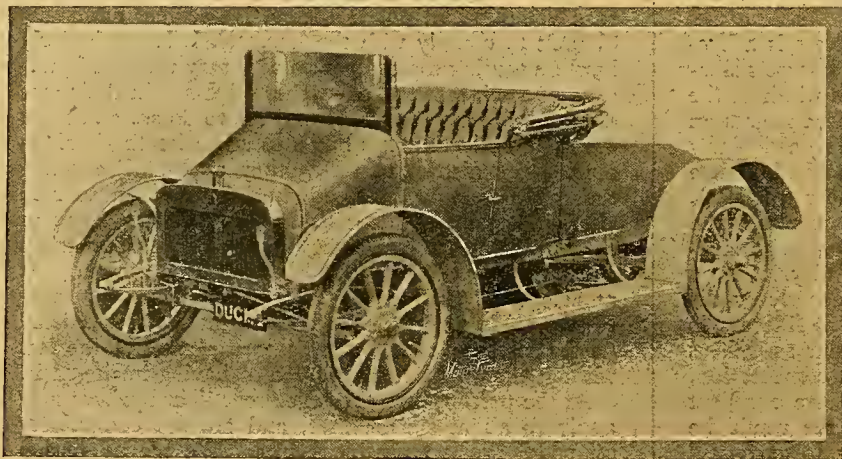
? I am the rider of a Motosacoche motor cycle, and I can't get the machine to run satisfactorily unless the throttle is full open. At intervals there occurs a sharp, snappy explosion different from the regular explosions of the engine. It occurs more often if I close the throttle a little. The machine has an automatic carburettor and a.o.i.v.—F.E.P.

The carburettor appears to be generally disarranged. It should be taken down and carefully examined. You will probably find that the union of the inlet pipe is loose and the engine is taking in too much air. This would account for the symptoms of which you complain. Also see if the inlet valve is working properly.

## Dry Battery Ignition.

? I am contemplating the purchase of one of the original Rover motor cycles, date about 1906, chain drive, i.e., 1911 B. and B. carburettor, and m.o. valves. Can you answer me the following questions: (1.) Considering it in good order, what, approximately, should be the price? (2.) Is accumulator ignition good enough? (3.) Would Hellenes dry battery be better? (4.) Can the same coil be used?—R.M.A.

(1.) The machine should be worth about £10. (2.) Accumulator ignition is satisfactory so long as the accumulators are kept well charged, but accumulators are troublesome. (3.) Dry battery ignition is less trouble and more satisfactory if used with a non-trembler coil. (4.) The same coil can be used provided that it is a non-trembler one. It would be advisable to get it tested.



Three-quarter front view of the four-wheeled Crouch Carrette. It was described in "The Motor Cycle" of Oct. 31st. The Crouch is not in the Show but is available for trial runs in the vicinity.



B. Fleet to Harwich.

?

Will you please forward to me my best route from Byfleet, Surrey, to Harwich, avoiding London?—A.M.C.

Your best route would be as follows: Byfleet, Weybridge, Oatlands Park, Sunbury, past the Brown Bear, Hanworth. At Oxford Arms turn left, and go straight through till you reach Hounslow, past the Duke of Wellington Inn. From this point follow the route marked blue on the "R.A.C. Official Map of Recommended Routes round London" (obtainable from these offices, price 1s. 7d. post free). If you follow this right round, it will eventually bring you out at Chingford Green; here take the left-hand fork, and go through Epping, Ongar, Chelmsford, Witham, Colchester and Manningtree to Harwich.

#### Carrying a Child on a Motor Cycle.

2

I recently purchased a 2 h.p. Humber lightweight motor (new). I have taken my little boy, eight years of age, for short rides on the luggage carrier. I folded a soft cushion and strapped it on, and made stirrups for his feet, with a long rug strap, and he enjoys the rides very much. My friends say it is very dangerous, and would be likely to cause a deslip. (1.) Kindly say if you think this a safe way to carry a child. (2.) Would you suggest any other method? The machine is too light for a sidecar.—C.E.S.

(1.) We should say that it is certainly dangerous to take a child in this way. (2.) There is really no way of carrying a child safely on a motor cycle. A sidecar is the only really safe method, and, of course, a 2 h.p. machine is not suitable for this. One cannot deny the fact that a motor cycle is prone to sideslip, and if the machine did slip with a child on the carrier, the consequences might be very serious indeed.

#### Loss of Power.

?

I am experiencing a peculiar fault with my  $3\frac{1}{2}$  h.p. Minerva tricar. The chief trouble is that for some time now the engine has been in the habit of suddenly pulling up as if it was overheated or the carburetter choked, which is not the case. This sometimes occurs perhaps every two miles, another time it will go perhaps eight miles. Sometimes on a slight rise the engine gives up, and another time it will go up all right. It used to run well with the Minerva-Longuemare carburetter, which was fitted to it when new, but that has worn out, so I have fitted a 1911 B. and B. The engine is a 1904 m.o.v.; the compression is good. It pulls up with a sucking noise as if choked, piston and rings good fit, all bearings and bushes good, gudgeon pin good fit, machine starts off at once after pulling up, valves lift properly, new springs and valves, new bell crank and new cams have been fitted, smallest jet in carburetter No. 26, battery ignition, which I consider to be in perfect order. Timing: exhaust valve opens  $\frac{1}{16}$  in. from bottom of firing stroke, and inlet opens just as the piston gets to the top. The engine gets its oil properly, and I have tried various sparking plugs. I have tried placing the coils in petrol pipe in different positions; in fact, the machine

has been to two garages but is no better. The engine is cooled by blowers from the front of carriage. I have re-wired the ignition. I have had the machine since it was new and know what it can do."—D.G.

It is difficult to form any definite opinion re  $3\frac{1}{2}$  h.p. Minerva tricar without seeing the machine, but it looks as if the trouble with the engine lay either in the ignition or carburation. As accumulator ignition is used, it is possible that the batteries are showing a false voltage (a dry battery will sometimes show quite a fictitious reading when current is quite insufficient to produce a satisfactory spark), and so run down after the first mile or so, otherwise it looks as if the carburetter were at fault. Another possible cause might lie in the valves. Is there space between the tappets and the bottom of the valve stems to allow for their expansion under heat? A No. 26 jet is on the small side. Try a No. 31

#### Cost of Motor Cycle in New Zealand.

?

I believe it is possible to avail oneself of your deposit system for the purchase of motor cycles or goods. Does your department undertake to choose a second-hand machine? I see so many bargains advertised by firms in your paper, such as clearing shop-soiled and slightly ridden motor cycles of each previous year's design. In the event of my getting a new motor cycle, would you ascertain whether the different firms would send out the machine as received from the manufacturer for export? I have seen Triumphs arriving here beautifully packed—the engine unit with magneto all fitted together, and the frame and tyres, etc., in pieces ready to be bolted together. My reason for this question is that we do not have to pay duty on the engine, or magneto, or gear, as it is classed as chassis of car. We pay twenty per cent. on British-built cycle parts. The firms out here charge far too much. On free engine Triumph

they charge £80; on two-speed Douglas, £70. Compare these with the home prices. What are the charges—freight, insurance, and packing—to New Zealand on (1) Douglas two-speed or (2) Triumph F.E.?—A.H.A.V. (New Zealand).

We greatly regret we cannot choose a second-hand machine for you. If, however you desire it, we shall be pleased to recommend you a reliable firm who make a speciality of this work. We have often done this sort of thing for our Colonial readers. The cost of exporting a machine to New Zealand is 51s. 6d., including packing in a crate and collecting within four miles of the Bank of England.

#### READER'S REPLY.

Starting in Cold Weather.

A flannel soaked in boiling water and wrapped around carburetter and induction pipe will help vaporisation in cold weather. Extreme care must be taken to prevent water entering the float chamber.—W.A.H.

#### EXPERIENCES WANTED.

"R.H.A." (Dunmow).—6 h.p. Zenith, particularly with regard to reliability of belt transmission.

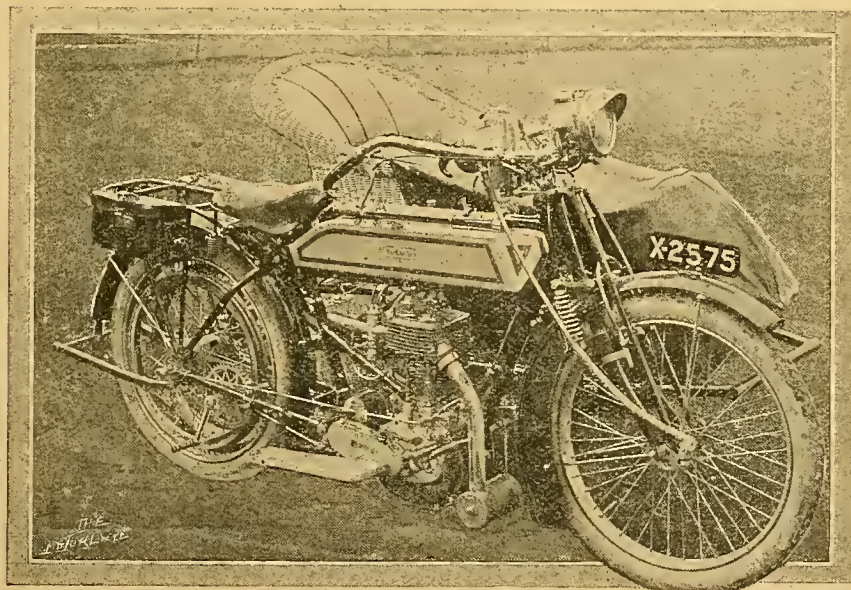
"P.G." (Dublin).—2 $\frac{3}{4}$  h.p. Douglas light touring model, average speed on long journeys, steadiness in grease, and reliability.

"S.R." (Fulham).—6 h.p. Zenith, 8 h.p. Williamson, and 8 h.p. No. 7 Chater-Lea with sidecar, particularly as regards tyres, belts, chains, and petrol consumption.

"P.J.B." (Dublin).—1913 8 h.p. Matchless, two speeds, chain drive. Consumption, reliability, and wear of tyres.

"J.H." (Lurgan).—2 $\frac{3}{4}$  h.p. 1912 Gamage. Speed, flexibility of engine, and general reliability.

A letter addressed to W. F. Winn-Jones, 34, St. Mary Axe, E.C., has been returned marked "Not known." If Mr. Jones will send his correct address a reply to his query will be forwarded.



A SINGLE-CYLINDER SIDECAR OUTFIT.

The  $\frac{1}{2}$  h.p. three-speed Dene-Precision sidecar outfit. The bicycle is a sturdy built mount specially designed for sidecar work. Features are the kick-starter and footboards.



### Amateur Workshops.

The Society of Model and Experimental Engineers (secretary H. G. Riddle, 27, Minard Road, Hither Green, S.E.) has a good workshop. The society welcomes motor cyclists who have no opportunity of getting repairs done and who have no proper workshop of their own. The annual subscription is half a guinea.

### A "Twin Screw" Motor Cycle.

The following is a cutting from a Rangoon paper: "For Sale, just landed, one Douglas 2½ h.p. 'twin screw' motor cycle." The Rangoon motor cyclist who has sent us the paragraph says that he thinks perhaps a "twin screw" motor cycle will be a curiosity even to us.

### A Motor Attachment.

The Cross and City Garages, Southgate Street, Gloucester, have introduced a motor set for attaching to pedal bicycles. The engine is one horse-power, magneto ignited, and has a single lever automatic carburetter. The set comprises engine, magneto, carburetter, petrol and oil tanks, and all pipes required; also the control levers, belt rim with spoke clips, jockey pulley, and twisted hide belt and fastener. The attachment fits midway in the frame, and engine is vertically placed.

### Paraffin Carburetters for Motor Cycles.

The Stewart-Precision Carburetter Co., Ltd., 199, Piccadilly, W., inform us that they are conducting experiments with a paraffin carburetter for motor cycles. The Stewart-Morris paraffin carburetter is already a success on cars, and has been tested under R.A.C. observation. The company is prepared to guarantee that the use of paraffin will not soot up plugs or cylinders to a greater degree than is associated with a well tuned engine burning petrol.

### Of Interest to Traders.

A case of interest to retail traders is that of W. Naylor, Anstey, near Leicester, who was summoned for failing to close his shop for the serving of customers one afternoon in the week at one o'clock, except for the sale of motor cycle and aircraft supplies and accessories to travellers. The defendant said that garages did not close, and he was under the impression that if he sold nothing except petrol, oil, and carbide he was complying with the law. He was ordered to pay the costs, in default five days' imprisonment.

### A Cyclecar Competition.

It is not every day that one has an opportunity of winning a cyclecar, but such is presented to all our readers by the makers of the John Bull cross groove tyre—the Leicester Rubber Co. The period of the competition extends from January 1st to September 30th, 1913, and the prize—any standard British-built cyclecar fitted with John Bull tyres and not exceeding a total value of £125—is offered for the nearest estimate of the average mileage covered by competitors during that time. Between the dates named every John Bull T.T. cover sold will have attached thereto a voting card and mileage chart, and a condition fixed by the manufacturers is that competitors must record their back wheel mileage. Complete details can be obtained from the manufacturers, whose address is Granby Rubber Works, Leicester.

## SPARKLETS



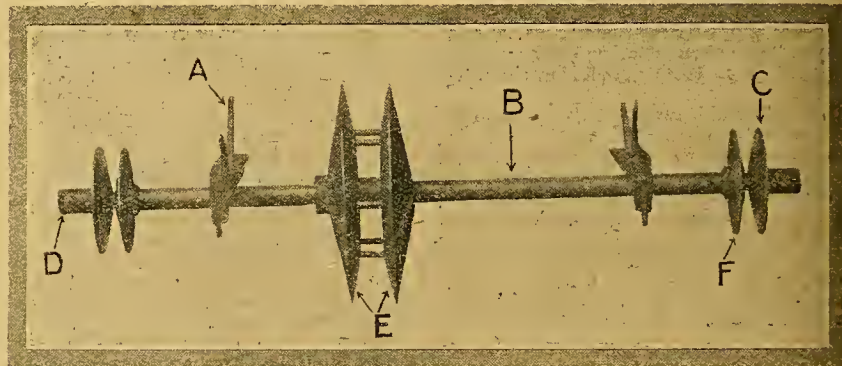
### Lancashire Motor Cyclist's Appointment.

Mr. S. W. Phillpott, the organising secretary of the Liverpool Auto Cycle Club's open hill-climb, and well known in connection with his series of consistent successes in important motor cycle competitions during the last year, has resigned his position with Messrs. Henry Whitlock and Co. in order to take up the management of the Mead Cycle Co.'s motor department at 11-13, Paradise Street, Liverpool. Mr. Phillpott will be at Olympia, and will be pleased to meet old friends and past competitors there. Communications should be addressed to him c/o Messrs. C. Macintosh and Co., Ltd. (Stand No. 9), where appointments may be made. The Mead Cycle Co. have already fixed several important sole agencies.

### A Differential Counter-shaft.

The Contrast differential counter-shaft, made by Denby and Co., Contrast Works, Ilkley, is composed of two hollow shafts which telescope one into the other. The outer shaft is driven by belt, through the pulley E (chain or gear can also be used), and carries at each end a fixed flange. The inner shaft slides endwise and rotates with the outer one, but projects at each end, and there carries two other flanges which are adjustable. This combination of inner and outer shafts and flanges forms at each end of the shaft a V pulley. It will, therefore, be seen that when the flanges are closed at one end the groove in the opposite pulley is widened.

The differential action works as follows. On turning a corner to the left the resistance of the road wheels causes the belt to climb up the right hand pulley, the flanges close and raise the gear. The corresponding action increases the width of the left hand flange and lowers the gear on the other side, and when a corner is taken to the right the action is reversed. The makers inform us that the device works well, and when turning corners one belt can be distinctly seen to rise, and the other to fall in the pulley grooves.



Denby's cyclecar axle. An ingenious method of overcoming the balance geared pinion type of axle.

A. Frame bracket.  
B. Outer shaft.

C. Outer flange.  
D. Adjustable pulley nut.

E. Variable gear flanges.  
F. Inner flange.

### Trade Notes.

Mills-Fulford, Coventry, the makers of the Millford sidecars have received an apology for infringement of their patented and registered design for commercial sidecar chassis from T. Cadby and Sons, Birmingham.

The tool and accessory business lately carried on by R. Broadhurst, 25, Smithford Street, Coventry, is now transferred to 130, Queen Victoria Road, Coventry, where the business will be continued under the style of R. Broadhurst and Co., and under the sole management of Mr. R. Broadhurst. A 1913 catalogue is now ready.

Mr. W. Ivy Rogers informs us that he is not the proprietor of the Autocrat Light Car Co., the makers of the Autocrat cyclecar, and is only responsible for the design.

Cass's Motor Mart, 5, Warren Street, Euston Road, N.W., inform us that they have been appointed sole agents for Trump-Japs for London and district, and a representative will be in attendance on the Trump stand during the Show.

### A Company Matter.

Prices' Co., Ltd., is the new title of Prices' Patent Candle Co., Ltd., which company has now acquired the business, goodwill, and premises of Charles Price and Co.

### Catalogue Received.

"Douglas Motor Cycles of 1913" is quite a bulky little volume, containing illustrations of the various Douglas models with complete specifications and prices. A number of detail particulars are well illustrated by means of half-tone blocks, such as the mudguarding, lamp bracket, carburetter, valve gearing, and two-speed gear. An excellent line drawing is also published showing the engine in part section, with all the various working parts numbered; on the right of this is a price list of all the spare parts. The same applies to the gear, carburetter, pedalling gear, etc. Then follows a list of Douglas successes, illustrated with excellent photographs, some of which have appeared in our pages. The booklet can be obtained from Douglas Bros., Kingswood, Bristol.



# The All-British "J.A.P." ENGINE

SECURES THREE IMPORTANT EVENTS

## At BROOKLANDS, on Nov. 9th.

**One Hour Cyclecar Race**, won by H. F. S. Morgan, on Morgan Runabout with J.A.P. Engine, who also made the

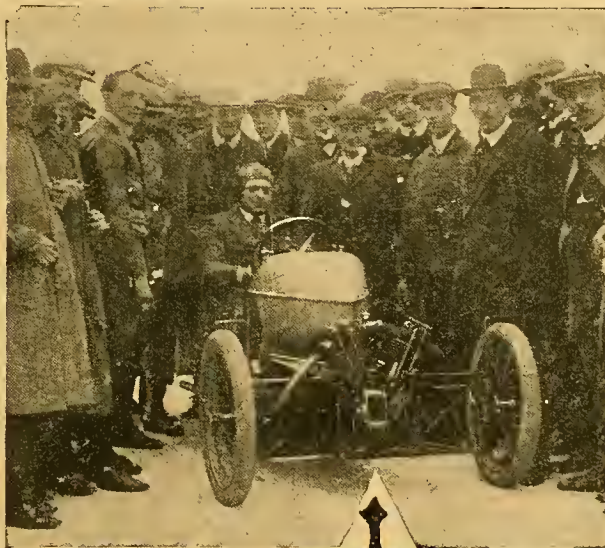
**ONE HOUR CYCLECAR RECORD,  
and 50 MILES** .. ..

### Junior Hour Race

won by  
H. Mason,  
on  
N.U.T. with  
J.A.P.  
Engine.

### Three-lap Race

won by  
H. Reid  
on DOT  
with  
J.A.P. Engine.



**The Engine that ENSURES Success.**  
Mr. H. F. S. Morgan on Morgan-J.A.P. Runabout,  
winner of Hour Cyclecar Race.

Nov. 16th, 1912.

J. A. Prestwich, Esq.

Dear Sir,

I am pleased to be able to tell you that I was successful in doing a non-stop engine run from London to Edinburgh, and maintaining an average of 20 m.p.h. This was done under the most trying weather conditions, as it was blowing a gale and raining hard. However, I think it only fair to tell you that the engine ran splendidly throughout, there being no sign of overheating, knocking, or loss of power even after she had been running for 19 hours.

I remain,

Faithfully yours,

(Signed) F. BEGLEY.

## A FEW RECENT J.A.P. SUCCESSES:

**A Non-stop Engine Run**—F. Begley, on 6 h.p. Enfield and Sidecar, fitted with J.A.P. Engine, made a non-stop Engine Run from London to Edinburgh in 19 hours 56 minutes.

### AT BROOKLANDS.

Mr. Hugh Mason, riding a 2½ h.p. N.U.T. with J.A.P. engine, finished **second** in the **Junior T.T. Race**.

3 to 9 hours' Cyclecar Record set up on Duo Cyclecar with J.A.P. engine.

### AT CANNING TOWN.

1 to 6 hours' record set up on a Martin Lightweight with J.A.P. engine.

When ordering your 1913 Motor Cycle, Sidecar, or Cyclecar, specify the famous J.A.P.

**J. A. PRESTWICH & CO.,** Northumberland Park, Lower  
Tottenham, LONDON, N.

Telephone: Tottenham 1612 (3 lines).

J.A.P. Engines can be obtained from stock from ROBERTSON'S MOTOR AGENCY, 157, Gt. Portland Street, W.

### IN SCOTTISH TRIALS.

**ONE GOLD MEDAL** and **TWO BRONZE MEDALS** won by machines with J.A.P. engines.

### IN A.C.U. ONE DAY TRIAL.

A Morgan Runabout with J.A.P. engine made a non-stop run.

### IN A.C.U. SIX DAYS' TRIALS.

Machines with J.A.P. engines won **FOUR SPECIAL PRIZES, SEVEN GOLD MEDALS, and FOUR SILVER MEDALS.**

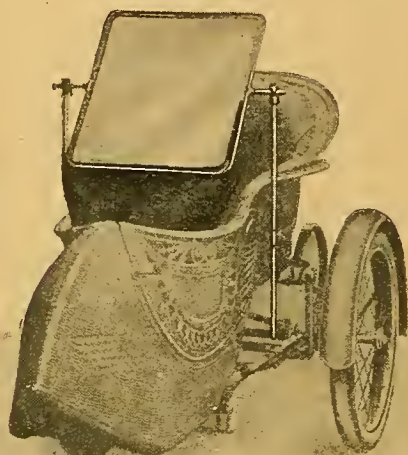


# BLUEMEL'S

are exhibiting at  
**OLYMPIA, STAND 141,**

— a —  
**New Sidecar Screen.**

Swings open like a door. Easy to attach or detach. Thoroughly protects the occupant of the car.



**Price 35/- each.**

THE  
**Bluemel Mascot  
Sparkling Plug,**

with Patent Enamel  
Gastight Joint and  
Steatite  
insulation.

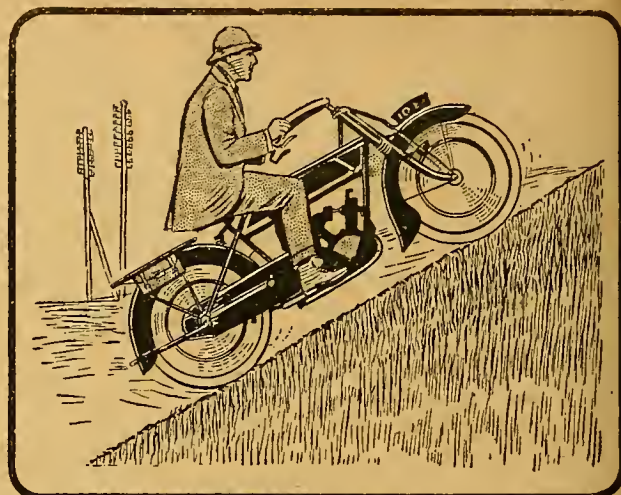
SEND FOR  
M.C.  
LIST.



We have these plugs in section at our stand and shall be glad to show and explain to you—and we have some really wonderful original letters from users—we should like you to read them.

**C. W. BLUEMEL  
AND BROS.,**

WOLSTON, nr. Coventry.



The above drawing is from  
an actual photograph, and  
represents the . . . . .

## LEA-FRANCIS MOTOR BICYCLE

climbing a gradient  
of **1 in 2 !!**

The telegraph poles  
show the true vertical.

Make a special note  
to see **OUR LATEST**  
product at Olympia  
—it maintains the  
Lea-Francis Standard  
of excellence.

**Stand No. 73  
OLYMPIA.**

LEA & FRANCIS, Ltd., COVENTRY.



# ROYAL ENFIELD

*"Made like  
a Gun."*

Ten models of the Royal Enfield chain-driven motor cycles, each fitted with the Enfield patent Two-speed and Free-engine countershaft gear, will be exhibited at Olympia; and there our staff will gladly demonstrate the points of superiority embodied in these machines.

## OLYMPIA - STAND 101

The special 1913 features and improvements embodied in the Royal Enfield models were fully described in last week's issue of "The Motor Cycle." These new features will be found on the models at Olympia—and the Royal Enfield preliminary Motor Catalogue for 1913 should be in the hands of every motor cyclist engaged in the selection of a new machine for the coming season. *Write to Dept. F. for a copy of the catalogue.*

**THE ENFIELD CYCLE CO., LTD., REDDITCH.**

. . . . . and 48, HOLBORN VIADUCT, LONDON, E.C.

# *Motor Cycles and their 1913 features*

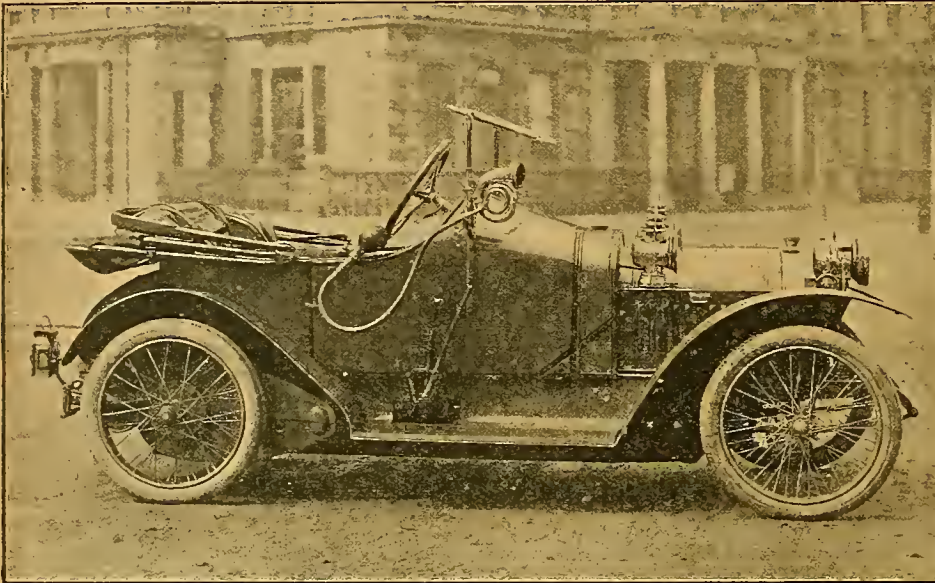
*In answering this advertisement it is desirable to mention "The Motor Cycle."*



You will be well advised not to place your order until you have seen

# The GLOBE CAR

Winner of Silver Medal, Tour de France, Paris to Nice, 1912.



Built in England from the finest material procurable in Great Britain and France.

Speed 1-40 m.p.h. on top. 38 miles to the gallon. Aster Engine. Clau-el Carburettor. Mea Magneto. Gate Change. PRICE chassis with 2-seater Torpedo body 125 Guineas, or complete with Hood, Screen Lamps, and Accessories 145 Guineas.

## 8 h.p. Globe Car

(1 cylinder, but sweeter than any 4).

We guarantee the car to be as flexible, smooth, and sweet running as any four or 6-cylinder car on the market. The running of the car in actual practise is so WONDERFUL that to describe the same would savour of exaggeration, therefore we prefer you to judge for yourself. Let us arrange for a trial run without delay, it will be a revelation to you. The finest value in small cars ever offered. Send a postcard to

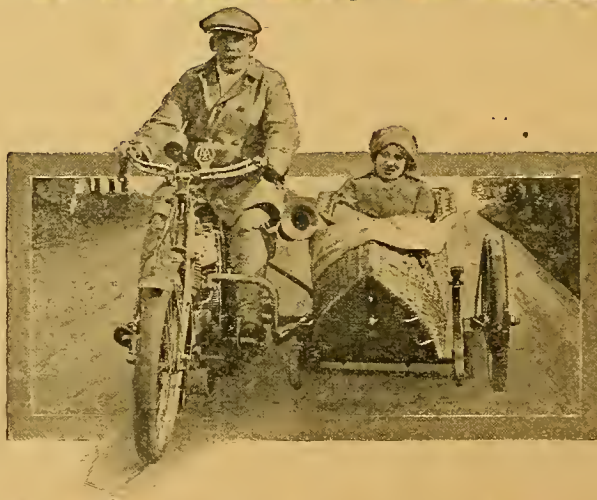
**GLOBE CARS, LTD.,**  
37a, Duke St., Manchester Sq.,  
LONDON, W.

Telephone—Mayfair 6067.  
Telegrams—"Globule, London."

### World's Endurance Record on

#### "WOOD-MILNES."

What stronger evidence of the reliability of **Wood-Milne Motor Cycle Tyres** than Mr. Harry Long's 30,000 miles ride—the world's long distance sidecar record? 1 sidecar tyre 16,000 miles, 2 back-driving tyres 5,000 miles apiece, 2 front tyres 8,000 miles each. 20,000 miles in 20 weeks. 1,576 miles in 12 days. 5,000 miles in 33 days, round the coast of Ireland!



### World's Speed Record on

#### "WOOD-MILNES."

Mr. S. F. Garrett, using the same set of **Wood-Milne Tyres** each day, broke the World's Record on Oct. 11th and 12th, for 3½ h.p. machine and sidecar. He rode a Regal Green Precision. First day, 1 and 2 hours' records and 50 miles records. Second day, 1 hour and 50 miles record again. Mr. Garrett, whose time averaged 4 miles an hour better than the previous World's best, writes:—"Strength, speediness, and wearing qualities are excellent."

**30,000 Miles - 34 weeks. Record beaten by 4 miles per hour.**

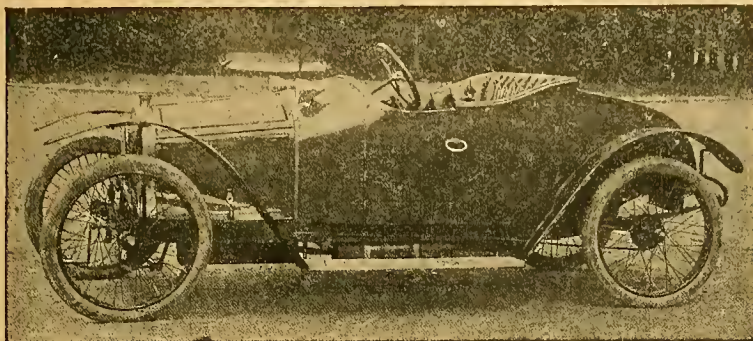
# WOOD-MILNE

**STAND No. 11,  
OLYMPIA SHOW**

## For RELIABILITY and SPEED.

**WOOD-MILNE, LTD.,** Preston, London, Birmingham, Bristol, Belfast, Glasgow, Berlin.





As illustrated

**£98.**Without Hood  
or Screen. :: ::

# The Wonderful Torpedo

# PORTLAND

:: :: LIGHT CAR :: ::

## SPECIFICATION:

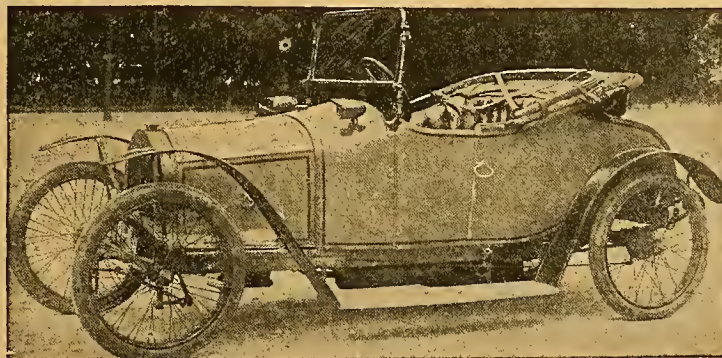
6-8 h.p. single cylinder, Buchet motor, water-cooled. Bosch magneto. Claudel carburetter. Pressed steel frame. Wire wheels. 650 x 65 tyres. Chain drive. Four speeds and reverse. Petrol consumption 50 miles to gallon. Speed—35 miles an hour. Climbs all hills. Foot brake—operates on two rear wheels. Side brake—on propeller shaft. Two side and one tail lamp, pump, horn, jack, and kit of tools.

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**£108.**With Hood  
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# The BRITISH MADE Watford Speedometers

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**MOTOR CYCLISTS—PLEASE NOTE!!!**

**COPY OF LETTER.**

From THE NEW ROVER CYCLE CO., LTD., 86, N. J. R. Hummerland St., NEWCASTLE-ON-TYNE.

Messrs. Nicole, Nielsen & Co., Ltd., 14, Soho Square, London, W. Oct. 28th, 1912.

Dear Sirs—I have much pleasure in enclosing cheque in payment of the enclosed account. I have now given your Speedometer a pretty severe test and must candidly say it is far superior to any other I have had, which include every speedometer of note. Where yours scores over the others is, the milo meter is most accurate and the speed hand is as firm as a rock when running at any speed. With the other makes I have had it has been really impossible to know what speed you were going at on account of the hand shaking all over the place.

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Indicates speeds to 60 miles per hour, with total mileage counter to 10,000 miles.

Type 702 (as illustrated) - - - - - £4 : 4 : 0

Indicates speeds to 60 miles per hour, with total mileage counter to 10,000 miles.

Quickly re-set trip counter to 100 miles.

Type 700 - - - - - £5 : 5 : 0

Indicates speeds to 60 miles per hour, with total mileage counter to 10,000 miles.

Quickly re-set trip counter to 100 miles. Maximum speed hand.

Manufactured by NICOLE, NIELSEN & CO., LTD.,

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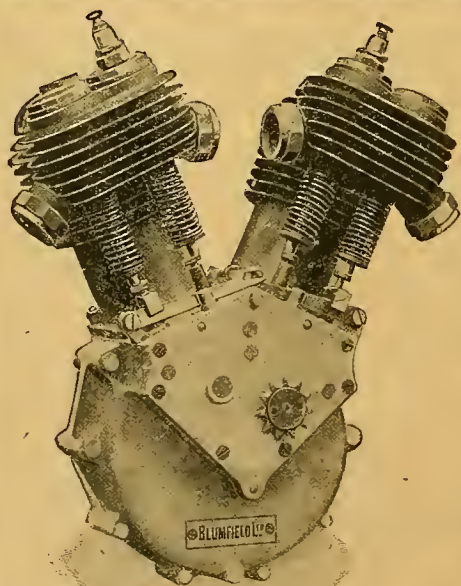
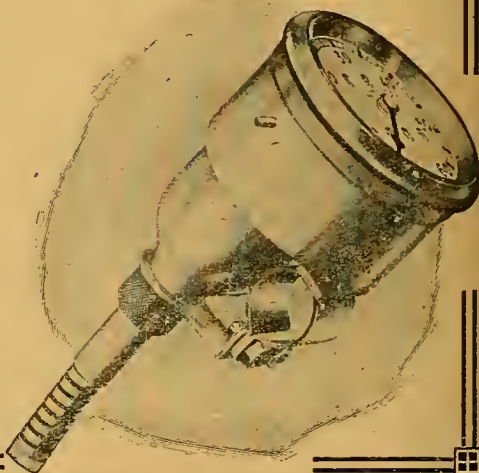
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7-8 h.p. Engine.

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FINEST DESIGN, WORKMANSHIP, MATERIAL.

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Air Passage between Valve Pockets  
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Proper lubrication to big end through  
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Large Roller Valve Gear Rockers.

These are NOT special features for the Show only.  
They appear in EVERY STANDARD Blumfield  
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## OLYMPIA STAND 248 (Gallery).

November 25th to 30th, 1912.

# BLUMFIELD L<sup>D</sup>., 70, LOWER ESSEX ST. BIRMINGHAM.



# A Cycle Can Free

That's the prize we offer to the winner of the

## John Bull Mileage Competition

and below is the Coupon that will bring you full particulars.

You know we've stated many times that the John Bull "means more mileage"—

Our competition is designed to prove it and, with so handsome a reward as a British-built Cyclecar shod with John Bull tyres, and costing anything up to £125, during 1913 thousands will be helping us to do it.

The result will prove the John Bull's superiority—of that we are convinced.

More, it will reveal the exceptional merit of the compressed rubber tread, which is an exclusive feature of the

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Now, remember, you can see the John Bull at

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Please supply full details of your Mileage Competition, and state nearest agent where I can purchase the JOHN BULL CROSS GROOVE T.T. Cover.

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*In answering this advertisement it is desirable to mention "The Motor Cycle."*



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**STANDARD LIGHTWEIGHT** 2½ h.p. with Improved and more  
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Entirely New Frame construction,  
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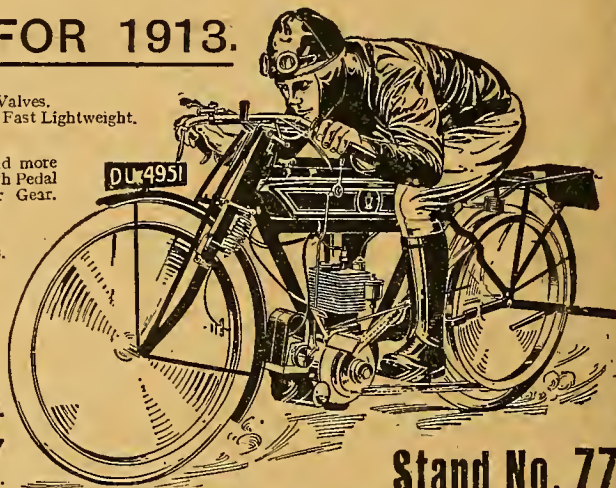
**STANDARD GENT'S** 3½ h.p. with Improved J.A.P. Ball-  
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**"HOBART" TWIN** 4 h.p. Sidecar Model. Exceptionally  
Efficient and Wonderfully Economical.

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**Stand No. 77**

## "LINCOLN ELK" New Models, 1913.

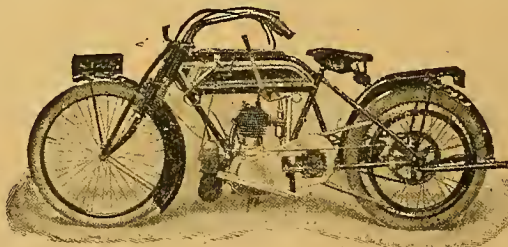
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Nov. 25th to 30th.

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**J. KIRBY,**  
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Telephone: 484. Telegrams: "ELK," LINCOLN.

Wholesale Agents for Scotland:  
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4½ h.p. 2-speed Model	£43	0	0
3½ h.p. - - - - -	£35	0	0
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All Models fitted with Palmer  
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A BOON TO  
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STAND NO. 57, OLYMPIA, Nov. 25-30.

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Why taking advantage of our offer to retread Motor  
Cycle Covers at special reduced prices during Nov.,  
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Covers Retreaded	8/6 each.	Usual Price, 10/-
" " extra heavy 12/-	"	14/-

We are the oldest firm in the United Kingdom making  
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### MOTOR CYCLE COVERS.

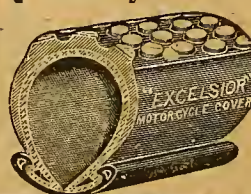
Standard Quality	15/- each.
Extra Heavy Tread	24/- each.

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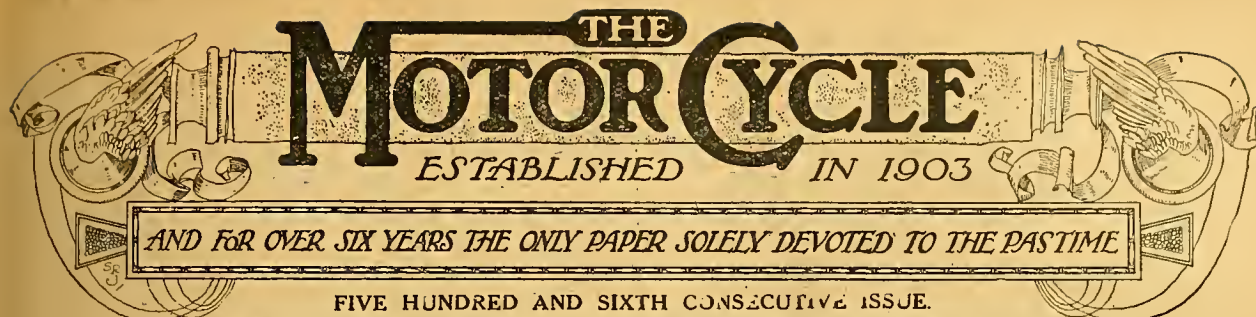
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## Future Olympia Shows.

**T**HE Olympia Show is over and is unlikely to be repeated until November next year. It has been a successful exhibition, and reflects great credit on those responsible for it. The attendance was a record, on one day alone 6,000 more people paid for admission than at any previous motor cycle exhibition, and overcrowding occurred practically all the week. Almost every day it was difficult to obtain a good and close scrutiny of the more interesting machines on the stands, and many must have gone away without examining some of the most attractive mounts solely on account of the crowds around them rendering them inaccessible. The crowding in the gangways was almost as bad as at the Car Show of the previous fortnight, and if the Show is to be made more comfortable another year the exhibitors' space, already rather restricted in many cases, must be still further curtailed and the gangways widened. There should be no difficulty in coming to some amicable arrangement by which the largest firms should be confined to an exhibition of one each of their standard models. That is if Olympia is to be the venue in 1913. There is some talk of a larger building being erected, and unless this be done drastic alterations will be necessary in the stand arrangements.

The Show is a popular meeting ground at an admission fee of 1s., and large numbers of tickets are given away by exhibitors to agents and prospective customers. The supply of these should be restricted, and the reduced prices to clubs might be withheld another year.

On all sides we hear good business has resulted, but the bulk of our readers will be interested to know when they will be able to obtain the machines they have ordered, and those who have not yet ordered or seen a 1913 model will like to know when the agents in their respective districts will have the article of their choice or fancy ready for inspection.

Most of the large firms making motor bicycles and sidecars are ready for practically immediate delivery, but many of the cyclecars shown were "firsts" and properly tested duplicates in most cases will be some months before they materialise.

This prompts us to give a few words of advice. To those who have been well satisfied this year with a motor bicycle and sidecar we say order another in preference to waiting till the spring for delivery of a machine which may not be ready even by that time. To those who have decided they must have the

comfort and protection of a four-wheeler with enclosed body, and who cannot obtain the article they want before May or June, we advise the purchase of a sidecar combination in the interval in preference to being without a mount during the best part of the riding season. To the makers whose cyclecars are yet untried we urge the necessity of entering them in all the possible competitions to show the public what they can do. The Sutton Coldfield Club will hold a members' trial confined to cycle cars this month, and there is also the Motor Cycling Club run from London to Exeter and back over hilly country at Christmas; we hope to see several cycle cars in these events, and shall take particular note of their performances.

## Cyclecar Test on Brooklands.

**I**T has been urged, and quite reasonably, that a prolonged race or test on Brooklands would give an excellent idea as to what a cyclecar is capable of. We are speaking now of those which have not yet won their spurs, and we would suggest that during what we will term, for want of a better name, the off season, a prolonged test might be made, open to makers of four-wheeled cyclecars. Nothing would be easier than to set each entrant to drive a lap at his top speed, and let this be the set average speed to be attained in a six hours' test, machines which fell below the set average to lose a mark for every mile or fraction of a mile per hour below the average. Nothing finds out faults so well as high speeds at Brooklands. A long distance trial on the road would better test mudguarding of transmissions, but we should at least ascertain which is the best type of cooling, and whether chassis parts and springing would stand a six hours' run all out with two passengers and standard frame, engine, etc. Perhaps a better method of arriving at the average speed would be to take the present hour record speed for a four-wheeled cyclecar and allot speeds in accordance with the cubical capacity of the engine.

An organised competition on the lines suggested, if taken in hand by the B.M.C.R.C. or A.C.U., would settle a good many doubts as to the capabilities of machines now being offered, and provide data as to consumption, speed, and reliability which would otherwise be unobtainable until the spring of the year or even later, when the A.C.U. and other long distance road trials are held.



# CLUB MEETING AT OLYMPIA.

The Ruling Body seeks to Encourage the Private Owner.

**A**T the General Committee meeting of the A.C.U., held at Olympia on the 27th ult., it was agreed that during 1913 the policy of the Union in regard to open competitions should be to grant permits to responsible clubs, in accordance with the Competition Rules of the Union, and subject to the following conditions being complied with, either (a) that the meeting for which the permit is sought shall be wholly "expert barred" or (b) that at least fifty per cent. of the events at any meeting shall be restricted to "novices," whilst, in the case of those meetings comprising a single event, such as a reliability trial, a separate set of awards shall be made for experts and novices.

## Classification of Competition Riders.

**DEFINITIONS.**—The following definitions and rulings as to the classification of competitors were agreed upon:

1. That no event at any meeting shall be "novice barred."
2. That unless at least six entries are received in any event the same shall be cancelled.
3. That wins at one meeting become operative at subsequent meetings only.

4. That all competitors on the register of the Union on January 1st, 1912, and all who have since that date been registered, shall be classified as "novices," except that competitors who have during 1912, or who shall subsequently, in any twelve months ending December 31st, win in open competition either two first or four seconds, or one first and two seconds (or the equivalent of such wins as may be decided by the Union and announced upon the grant of permit), shall be classified as "experts."

5. That an "expert" who does not compete in any open competition during twelve months shall revert to the "novice" class.

6. That an "expert" who, having failed to win a first or second prize in open competition during any twelve months, may, on application being made to the Union, be allowed to revert to the "novice" class.

## Meeting of Club Secretaries.

After this meeting, a meeting of club secretaries was held in the Pillar Hall, with a view to fixing up dates for events during 1913. The Chairman (Mr. J. R. Nisbet) went into a full explanation of the new policy regarding the classification of riders for open events. This policy was practically self-explanatory, and after Mr. Nisbet had gone through the points one by one very few questions were asked. Mr. Nisbet pointed out that the Union had been forced to define its policy in this respect through the difficulty the clubs had found in giving sufficient encouragement to inexperienced riders. He also announced that a list of experts, as defined by the above definition, would be published by the A.C.U. Mr. W. B. Little congratulated those who had drafted the scheme, and stated that he regarded the difficulty as being solved in a satisfactory manner; in fact, he gathered from the feeling of those present that this was the case. Here Mr. W. H. Browne remarked that the scheme was due to Mr. Loughborough, secretary of the A.C.U.

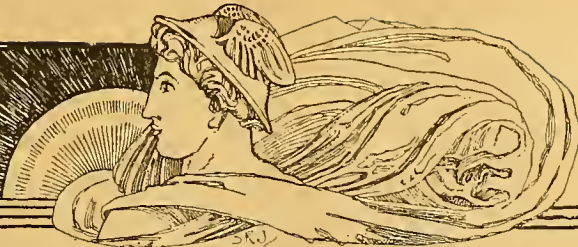
## Twenty-six Clubs Represented.

About twenty-six clubs were represented as follows: The Liverpool A.C.C., Mid-Bucks M.C.C., Dublin and District M.C.C., North Middlesex M.C.C., Oxford M.C.C., Sutton Coldfield and District M.C.C., Birmingham M.C.C., Cheltenham and District M.C.C., Leicester M.C.C., Streatham M.C.C., Coventry and Warwickshire M.C.C., Essex M.C.C., Cumberland M.C.C., Westmorland M.C.C., Woolwich M.C.C., Purley and District M.C.C., Chesterfield M.C.C., Notts and District M.C.C., Bristol M.C.C., Surrey M.C.C., and Bristol C. and M.C. In the room a large black-board was divided into spaces giving the various Saturdays throughout 1913, on which were marked the various dates engaged by the A.C.U. for their trials. The spaces were then filled in, and the following list of 1913 events was compiled:

## Diary of Events in 1913.

Jan.	18th.	North Middlesex M.C.C. Open Trial.
Feb.	8th.	Liverpool A.C.C. Trial.
"	15th.	Sutton Coldfield A.C. One-day Trial.
Mar.	1st.	A.C.U. One-day Trial.
"	8th.	Herts M.C.C. and East Midland Centre A.C.U.
"	15th.	Bristol M.C.C. Trial. Essex M.C. Hill-climb.
"	22nd.	M.C.C. Jarrott Cup Contest (closed competition). Birmingham M.C.C. Trial.
"	24th.	Westmorland M.C.C. Hill-climb. M.C.C. Jarrott Cup Contest (return journey). Birmingham M.C.C. Sangster Cup Trial.
"	29th.	B.M.C.R.C. Meeting.
April	5th.	Oxford M.C.C. Hill-climb.
"	12th.	Birmingham M.C.C. Passenger Trial. Liverpool A.C.C. Hill-climb.
"	19th.	Bristol M.C.C. Open Trial.
"	26th.	Bristol B. and M.C. Trial. Essex M.C.C. Open Trial. B.M.C.R.C. Meeting.
May	3rd.	Herts M.C.C. Hill-climb. A.C.U. East Midland Centre Trial.
"	10th.	M.C.C. Edinburgh Run (closed competition). Birmingham M.C.C. Land's End Trial.
"	17th.	Sutton Coldfield Novices' Trial.
"	24th.	Birmingham M.C.C. Hill-climb.
"	31st.	Coventry and Warwickshire M.C. Reliability Trial. Herts M.C.C. Open Trial (half-day).
June	4th.	Tourist Trophy Races.
"	6th.	
"	14th.	M.C.C. Inter-team Trial for <i>The Motor Cycle</i> Cup.
"	19th.	B.M.C.R.C. Meeting.
"	(Thurs.)	
"	21st.	Birmingham M.C.C. Open Circular Trial. Herts M.C.C. Open Speed Trials.
"	23rd.	Notts M.C.C. Speed Trials.
July	5th.	M.C.C. Brooklands Meeting.
"	5th.	North-Eastern Automobile Association Hill-climb.
"	12th.	A.C.C. Six or more Days' Trials.
"	19th.	
"	26th.	Herts M.C.C. Half-day Trial. Brookdale C.C. Team Trial. Liverpool A.C.C. Speed Trial.
Aug.	2nd.	Birmingham M.C.C. Perth Trial.
"	4th.	Anglo-Dutch International Reliability Trial.
"	9th.	B.M.C.R.C. Meeting.
"	16th.	A.C.U. East Midland Centre Trial.
"	23rd.	Mid-Bucks M.C.C. Hill-climb.
"	29th.	Essex M.C. Twenty-four Hours' York Run.
"	30th.	
"		Herts M.C.C. Half-day Trial.
Sept.	6th.	Coventry and Warwickshire M.C. Hill-climb.
"	13th.	B.M.C.R.C. Meeting.
"	24th.	A.C.U. One-day Trial.
"	(Wed.)	
"		Liverpool A.C.C. Reliability Trial.
"	30th.	Streatham M.C.C. Hill-climb. Birmingham M.C.C. Carlsle Trial. Herts M.C.C. Speed Trials.
Oct.	4th.	Sutton Coldfield A.C. Hill-climb.
"	11th.	B.M.C.R.C. Meeting.
"	18th.	Liverpool A.C.C. Hill-climb.
Dec.	26th.	M.C.C. Winter Run (closed competition).
"	27th.	Birmingham M.C.C. York Run.



OCCASIONAL  
COMMENTSBY  
"IXION"**Keynotes of Olympia.**

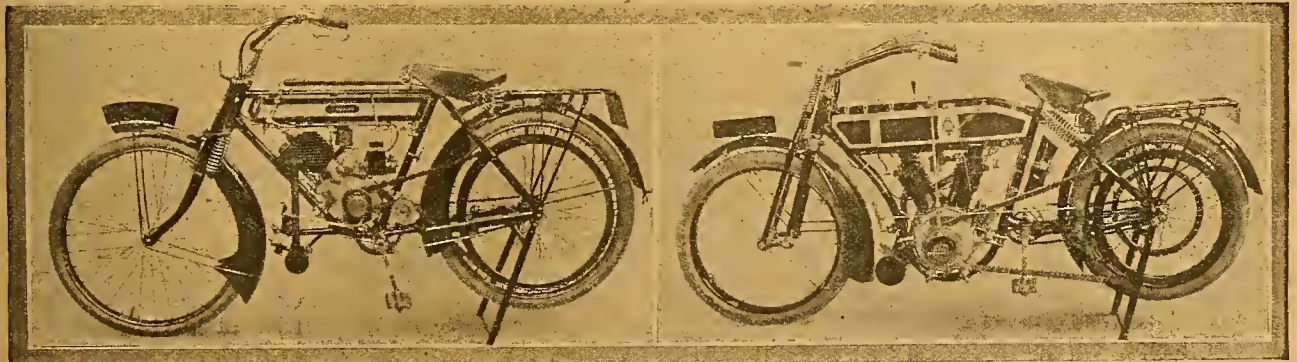
Outside the experimental boom in cyclecars, I notice how thoroughly the Show endorses the policy and opinions advocated by this paper since its inception. To-day I find myself almost a doyen of the motor cycle press, and I well recall the abuse and vilifications undergone by some of my *confrères* and myself for having ten years or more ago deprecated attempts to produce an 80 lb. lightweight, and for having preached variable gears in season and out of season. To-day variable gears are universal, and the 80 lb. lightweight is as far from solving our problems as ever it was. In reality there has been very little reduction of weights. In 1902 and 1903 I rode and owned machines which weighed less than 130 lbs. all on; in fact, I possessed four different makes of this class. Two years ago it looked as if 120 lb. machines might oust the heavy  $3\frac{1}{2}$  h.p. roadsters, but since then there has been a general advance of weight in most classes. The original  $2\frac{1}{2}$ - $2\frac{3}{4}$  h.p. types have been loaded up with heavier frames, heavier engines, change-speed gears, free engines, spring forks, bigger carriers, tool bags, tanks, etc., until there are few left which do not scale about 160 lbs. ready for the road, while the  $3\frac{1}{2}$  h.p., similarly caparisoned, has advanced beyond the 200 lb. mark, and in trials, with a week's equipment, often scales 230 lbs. or even 250 lbs. These facts confirm my old ruling principle that nobody particularly minds what a machine weighs so long as the machine can always propel its own weight sufficiently. We may get down to a truly efficient 80 lb. or 100 lb. machine some day, but the time is not in sight yet. And, oh, those variable gears! At Olympia I met leading manufacturers who used to cut me, or write vituperative letters, signed and unsigned, because we denied that a 4 to 1 gear, behind, say, a  $75 \times 80$  mm. engine, was efficient for a go-anywhere tourist. To-day they are all tumbling over each other to improve their variable gears! Then some fools say the press is an incubus.

I venture to think also that my predictions regarding

the future of the cyclecar will come true. I mentioned a week or two ago that the speed brigade are being studied too much in connection with the design and horse-power of small runabouts, and that the public would buy when these machines have been tried out. Probably I got cursed for my pains, but if there be an unhealthy rush for cyclecars I for one shall be sorry.

**The Gear of the Future.**

Continuing Cassandra's rôle, I venture to prophesy that out of the seething welter of variable gears the counter-shaft three-speed is likely to be the immediate survivor. I even expect it to be the dominant note of the 1913 Show. I do not say there are many samples of the type which I dare purchase to-day. It is a novelty, and a drop of canny Scots' blood trickling down from a remote ancestor, induces me to let others do most of the experimenting for me. I know the hub gear is sound all through. It wears a season, it very seldom gives trouble, and the engine can stand four miles of it with the throttle wide open and the pulley right down. This is good enough for the time being. But if the future can offer me a gear which removes 10 lbs. weight to the centre of the wheelbase, and permits me to drop out my back wheel in a couple of minutes, after a few leisurely twists of a single spanner and a swift juggle with a belt-hook, I should be a fool to refuse such an ideal. When the same design includes a two-step drive, incorporating a belt which will wear twice as long as my present drive, and seldom slip to the point of non-propulsion, why, I grow rapturous. My secret petition to the trade, once more, is that they will "try out," as the Yankees say, the inclusion of a bevel-shaft as the primary item of a two-step drive. I always thought there were possibilities about the shaft, and I fancy it is in this respect that they may ultimately be realised. Meantime, hats off to the three-speed hub! It is a contingency we under-valued when we were recovering the balls of the old experimental change-speed hubs from a mile of road with nettlesome ditches on both sides.



Two variably-g geared show models.  $2\frac{1}{2}$  h.p. standard Motococycle and  $6\frac{1}{2}$  h.p. (two-speed) N.S.U. with spring frame.



# A November Trip on a Humberette.

A Strenuous Week-end of Nearly 500 Miles.

LATELY we have had experience of the running and management of the Humberette, the design of which is no doubt familiar to our readers, a detailed description having already been published in these columns. Our initial test of the little car was in the Midlands, the biggest hills within easy reach of Coventry, such as Edge, Sunrising, and Warming-ton, being easily accounted for. We have, in fact, seen a Humberette climb Sunrising with four up, and restart with the same load on the steepest gradient at the top. Of course the question on everybody's lips in examining a cyclecar with air-cooled engine is, "Does the engine overheat?" No matter where you go you are bound to hear the subject broached. Why? Because it has been the custom in the past for engine makers to design an engine of a certain capacity, and no matter what ratio of compression it possessed or how big the flywheels employed, it was used for all sorts of conditions, and frequently for purposes for which it was ill-suited. The result was "pink hot" engines, broken valves—mainly owing to the heat—excessive oil consumption, and so on.

Now, however, it is generally realised that for success the engine must be designed from the first for the particular work it is expected to perform. This simple fact was patent to Messrs. Humber, Ltd., when they decided to market a runabout, which explains why the 8 h.p. twin-cylinder air-cooled engine of 84 mm. bore and 90 mm. stroke is able to keep cool on long-distance runs without any artificial methods of cooling. It has a low compression enabling it to run cool, and heavy flywheels ensuring flexibility, this being most marked at slow speeds.

## A Complete Equipment.

A very smart vehicle complete with hood, screen, lamps with generators charged, and all necessary tools was placed at our disposal, and very brief instructions were needed to send us happy on our way. Though a throttle

lever is provided on the steering column, a foot accelerator is all one need be concerned with. The magneto lever does help occasionally at slow speeds in traffic or on a hill, but once set needs no attention. We found gear changing quite easy and the clutch sweet in action, whilst we must particularly express appreciation regarding the power of the brakes. The steering required a few miles practice before getting really accustomed to the car, for it is much more sensitive than the average, only a slight movement of the wheel altering the track of the machine. The metal steering wheel, too, we found very icy on a cold day; if the writer had a

Humberette he would wrap cord around the wheel rim. This, however, is a detail. The more important question of reliability most concerned us, and we are able to say that no trouble whatever was experienced from start to finish. The engine pulls excellently, climbing most ordinary rises on top gear, and though it is quiet when on the move, we can quite believe that springs under the tappets would effect a further improvement.

The consumption of petrol is approximately forty-two miles to the gallon on long give-and-take runs, which must be considered excellent. An automatic drip-feed lubricator is used, with a hand pump as reserve, which is most necessary, as we found in cold weather that the engine vacuum was insufficient to induce thick oil to flow through the pipes. A pump every six miles is enough for ordinary conditions.

The engine is not addicted to sooting up its plugs; twice we over-lubricated and caused the engine to smoke badly, but it seemed to like it. The four-jet carburetter left little to be desired. Occasionally one could detect a suspicion of choking if the accelerator were suddenly depressed, but it was only momentary.

## A Longer Test in Lakeland.

On a subsequent week-end we had an extended trial of the car at the invitation of the Humber Co.



Near the top of Sunrising.



The twisty ascent of Tow Top near Kendal.



**A November Trip on a Humberette.—**

Just how many air-cooled four-wheelers can account for the four real test hills included in the A.C.U. Autumn Trial course it would be interesting to know. We refer to Tow Top, Gummers How, Red Bank, and Kirkstone Pass. Certainly the trial itself helped us but little to answer the query, for the Humberette was the only one of its type entered, and that machine was unfortunate in suffering from a slipping clutch. The vehicle used was the one the firm has tested for upwards of 10,000 miles over all sorts of roads, and the clutch leather had just worn down to a point which caused the inner member to bear on the nuts at the back of the outer portion. After fitting a new clutch leather, it was resolved to give the Humberette another trial with the same gear ratios, and we were invited to observe the run, though it was more in the nature of a private trial to test the low gear ratio on the steepest of hills. The car will subsequently be sent into Devonshire to be tested over the Minehead-Ilfracombe stretch. When S. Wright picked us up at Coventry on the Saturday morning he talked of being home again the next evening, though we had our misgivings with a journey of nearly 500 miles

before us. We need not dwell on the run through Lancashire, for there was little of incident to chronicle, nor need we do more than repeat that the good impressions we formed of the springing, general comfort, and handiness of the car on the occasion of our initial run were amply sustained. Driving in



Climbing Red Bank in the pouring rain.



The stony surface of Gummers How, a comparatively unknown but long trying ascent. Lake Windermere in the background.



**A November Trip on a Humberette.—**

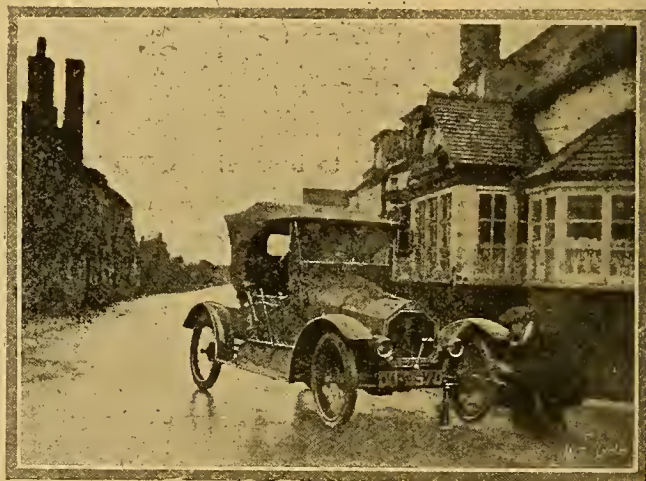
turns, we actually reached Warrington (100 miles approximately) in 3h. 35m., which surprised us both in view of the heavy state of the roads in parts. We intended to avoid the tramlines and travel *via* Ormskirk and Rainhill, but a necessary call at Blackburn upset our plans. We lit lamps at Preston, where it commenced to rain, finally reaching Kendal in good time. Incidentally, it may be of interest to prospective cyclecar owners to know that a couple of King of the Road motor cycle head lamps answer splendidly. We had ours low down near the front axle, where they were more useful than on the dashboard, though the glass doors get splashed.

**Tow Top Climbed.**

It was still raining when we set out for Tow Top next morning, but we were cosy and dry under the hood. Substituting a bigger jet for the smallest of the four, and making sure that we left a blue trail astern, we commenced the steep climb over the stone track, swinging round the first hairpin at a good twelve miles per hour. This time the engine made no mistake, the clutch held perfectly, and our worthy driver was soon wearing a more contented expression as the engine tugged gamely with the hill summit in sight. Continuing our way to Gummars How over roads now thick in mud, we were both impressed by the severity of this climb. However, after a cool down, we put paid to the account of Gummars How also, and, descending, hurried along the road beside Lake Windermere to Ambleside and Grasmere. How different the winter aspect in these parts! Cold and bleak, the rain falling pitilessly, and the road surface strewn with fallen leaves, the Lakes now had little attraction for us. Red Bank, with its 1 in 4 gradient, was our objective, and after Tow Top we knew that success was ours. The surface of Red Bank is splendid; in fact, it can be said to be one of the fairest test hills in the country. The ascent successfully accomplished, we returned to Ambleside for tea. By this time dusk was upon us, so we resolved to make tracks for home and drive all through the night. We got along finely, each of us being moved to comment from time to time on the roadworthiness and weatherproof qualities of the Humberette. The roads were covered with seas of water—it hardly ever stopped raining—yet we continued to average our 23 odd m.p.h. without forcing the car along.

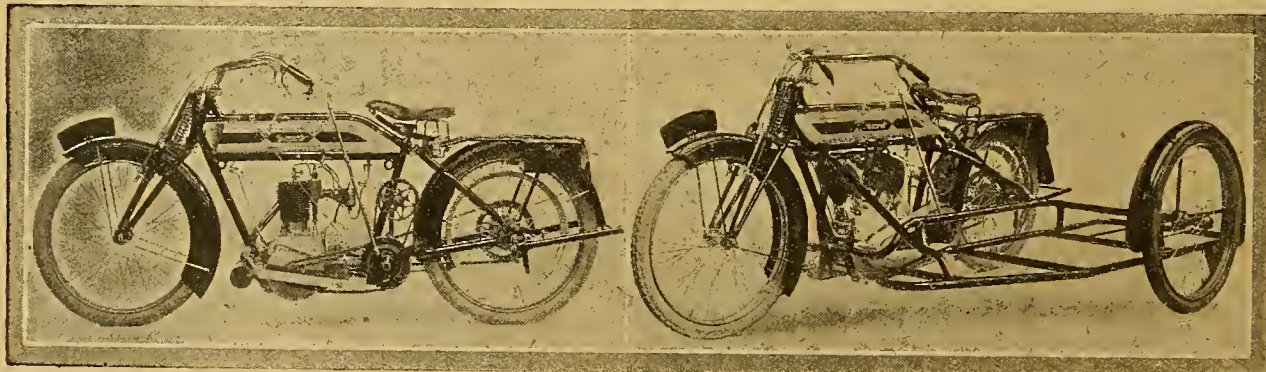
Half an hour was spent in Kendal obtaining re-

plenishments, and then we struck out for Lancaster and Preston in the inky darkness. No incident of note occurred, though we frequently ran over branches of trees beaten down by the heavy rain and strong winds blowing from the sea. Thunder and lightning near Preston caused us to alter our plans; neither of us relished the thoughts of an all night run with flashes of lightning dancing across our path. Continuing through Wigan over indescribable surfaces to Warrington, we stayed the night, and next morning got away at nine o'clock in improved weather. It still rained in showers, so we kept the hood up. Knutsford was our first stop, to change drivers, and



A deflated tyre at Coleshill—our only road stop.

we continued at a good 33 m.p.h. bat to Stone and Lichfield. The engine continued to run faultlessly, but nearing Coleshill we noticed an ominous "bump, bump"—front tyre down. Failing to find a puncture, we re-inflated the tyre, and it remained hard. Have not tyres peculiar temperaments? The road surface to Stonebridge vies with the worst that Lancashire can produce. We reached the city of the three spires without further incident at exactly one o'clock, the week-end run totalling nearly 500 miles. By the way, it would be interesting to know if this distance has been beaten on a cyclecar in two and a half days. The experience has left us with an excellent impression of the Humberette, and especially of its reliability, comfort, and weatherproofness. G.S.

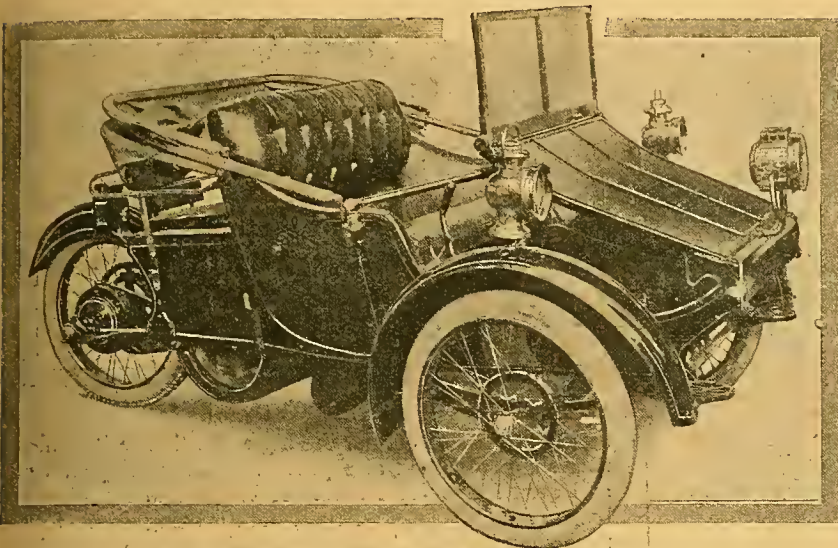


New  $4\frac{1}{2}$  h.p. single-cylinder model with chain drive and counter-shaft two-speed gear.

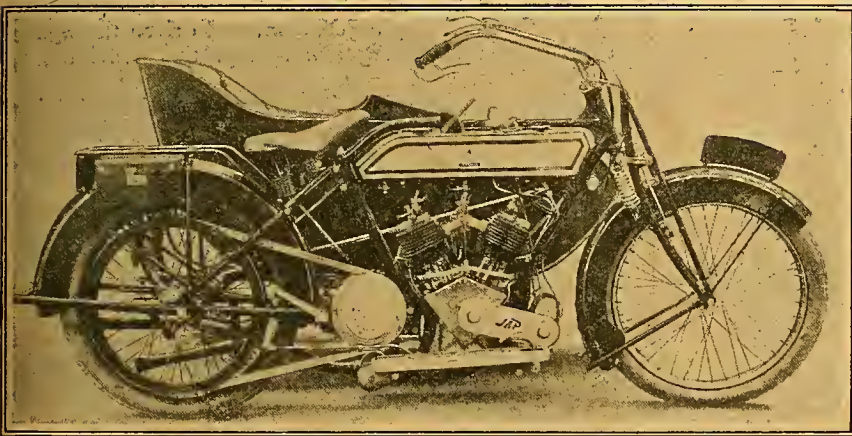
8-9 h.p. two-speed chain-driven Quadrant fitted with handle starter and Quadrant four-point suspension sidecar chassis.



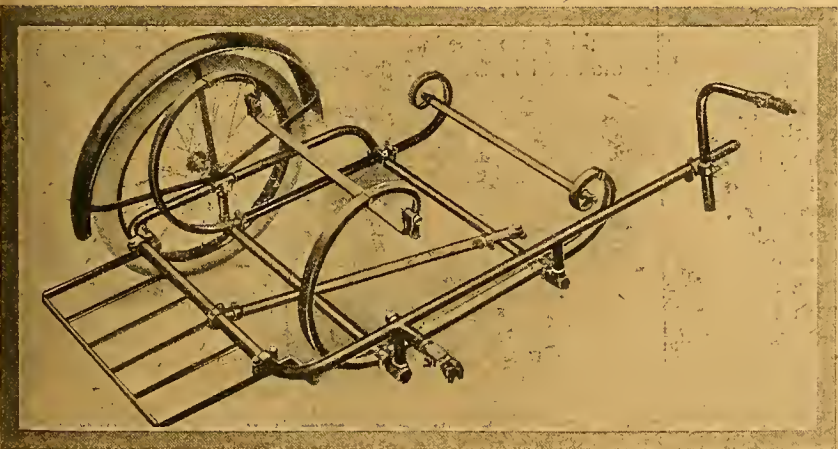
# Passenger Machines and Fittings at The Show.



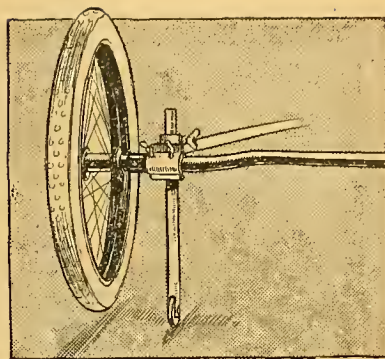
A.C. Sociable complete, fitted up with lamp, hood, and wind screen.



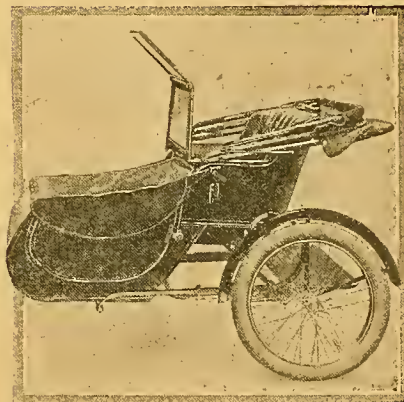
6 h.p. Sparkbrook sidecar model. This was described last week on page 1407 and is fitted with a twin-cylinder J.A.P. engine and the Sparkbrook two-speed gear. Note also kick-starter and combined belt and chain drive with large pulley on the counter-shaft. The machine has a most workmanlike appearance, and the sidecar, frame and attachments are particularly good.



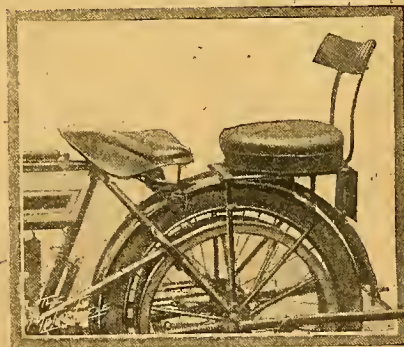
Chater-Lea 1913 model sidecar with dropped frame. The luggage grid is a new feature of this make of sidecar.



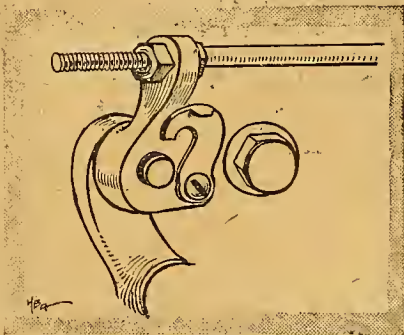
Burelto sidecar stand.



Coach-built sidecar fitted to the 8 h.p. No. 7 Chater-Lea.



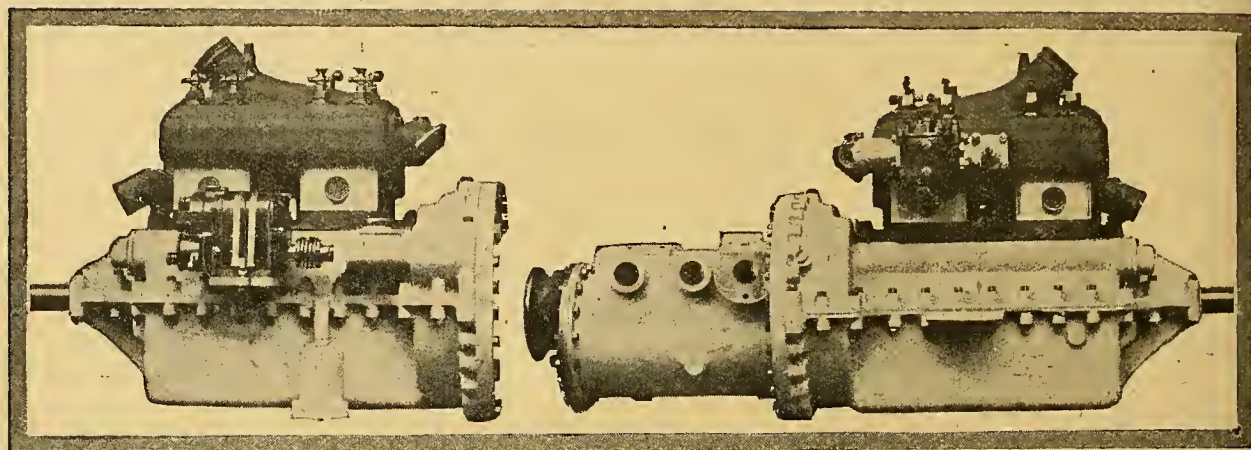
C. F. Mitchell & Co.'s V.M. tandem seat for fixing to the carrier.



Bat method of attaching brake connection.

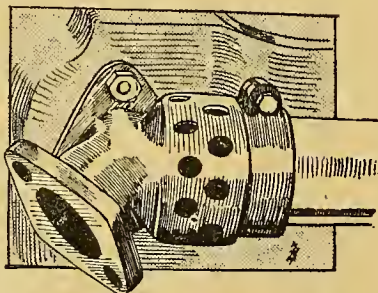


## Four-cylinder White and Poppe Unit.



Two aspects of the new White and Poppe four-cylinder water-cooled cyclecar engine, clutch and gear box unit.

THE well-known firm of Messrs. White and Poppe, Ltd., have lately turned their attention to the light car movement, and, as was to be expected, have produced a really beautiful piece of work, which takes the form of a power unit comprising engine clutch and gear box. The engine has four cylinders cast *en bloc* with a bore and stroke of 60 x 90 mm. respectively. The valves are disposed on either side of the cylinders, the exhaust on the near and the inlet on the offside. They are operated by separate camshafts through the medium of rollers and adjustable tappets, and the valve gear is enclosed in neat aluminium covers. Both inlet and exhaust manifolds are cast with the cylinders and give the engine a symmetrical appearance. Cooling is arranged on the thermo-syphon principle, the outlet being of large diameter and considerably sloped upward. A double intake pipe is fitted, so that the water may return from each side of the radiator.



Hot air intake from exhaust branch on White and Poppe cyclecar engine.

### Design of the Interior.

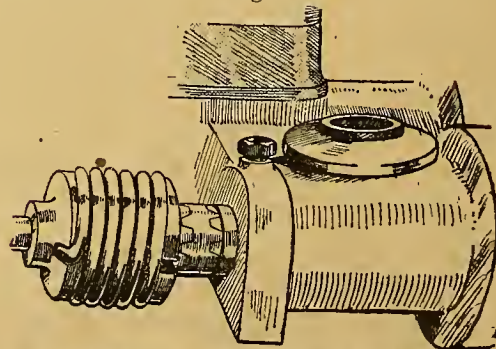
The crankshaft is supported by three main bearings, and throughout the ample bearing surfaces are particularly noticeable. The bottom half of the crank case serves as an oil well and sump, and may be detached without interfering with the rest of the unit. The camshafts are driven by gears from the rear end of the crankshaft, and the crank case is extended so as to form a cover for the flywheel. To this cover is bolted the gear box casting, which contains a train of gears providing three speeds and reverse with a direct drive on top. The clutch is of the multi-plate type, having thirty-six plates carried in an extension of the flywheel, and running in oil. The lubrication is ingenious, but at the present moment we are not allowed to say more than that the oil is raised by the flywheel

and led to troughs under the big ends, thence it returns to a sump. A lead also provides oil for the gear box and even for the rear axle. A White and Poppe carburetter supplies the mixture, hot air being drawn from the exhaust pipe. The magneto lies on the near side of the engine, and is driven from a gear wheel engaging with the exhaust camshaft wheel. It is provided with a simple timing adjustment, and driven through a short length of strong coil spring, this providing a flexible joint.

Behind the gear box is mounted a universal joint enclosed in a neat spherical casting.

This power unit is constructed specially for the Morris-Oxford light car.

The chassis is on car lines throughout, and has a 7ft. wheelbase and 3ft. 4in. track. The frame is of pressed steel, the side members being quite straight but providing ample steering lock. The front axle is of I section and mounted on semi-elliptical springs, the steering being by worm and wheel. The rear axle is driven by an overhead worm, and the rear suspension is by three-quarter elliptic springs. The propeller-shaft is enclosed in a tube which takes the torque, and all wheels are of the Sankey-detachable steel type, shod with 700 x 80 mm. tyres. Both brakes are internal expanding, and lie side by side in drums mounted on the rear wheels. The whole design follows the latest car practice, and the differential and driving shafts may be removed for inspection without even jacking up the wheels. A V-shaped radiator is mounted in front of the engine.



Magneto spring drive and oil filler on White and Poppe engine.



# QUESTIONS and REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Cracked Cylinder.

**?** I have a 1911  $3\frac{1}{2}$  h.p. Singer (new March, 1912), and it has just developed a crack across the exhaust valve seating. I have been advised to run the machine as it is, as this is said to be a common occurrence. Would you advise me to do so or should I have it welded? There is no loss of compression, and the machine will do nearly sixty.—F.E.P.

You say there is no loss of compression at the present time, but if this develops you had better have the cylinder examined by a welding expert and see if it can be repaired.

## Forks and Belt.

**?** (1.) I have purchased a back wheel from one of your advertisers, but find that my back stays are not wide enough to take the new hub, the width of stays being 5in. and of hub 6in. Can I reasonably expect the forks to "spring" this amount, or am I likely to damage the frame? (2.) Is it wise to use a  $\frac{3}{4}$ in. belt on a  $\frac{3}{4}$ in. rim?—L.H.D.

(1.) The forks must not be sprung to the extent mentioned. You had better take your machine to a good engineering firm, and have the forks set out  $\frac{1}{2}$ in. on each side. (2.) The  $\frac{3}{4}$ in. belt would run on a  $\frac{3}{4}$ in. rim in some cases quite satisfactorily. Provided not more than a  $\frac{1}{8}$ in. stands above the rim when driving, the belt will not be damaged.

## Two-speed Single v. Single-speed Twin.

**?** At present I possess a 1911 5 h.p. free engine Rex motor cycle, and I am thinking of disposing of this and purchasing a new 1912 4 h.p. two-speed Rex. Do you think I would get as good results or better from the 4 h.p. two-speed machine as I get from my present 5 h.p. single-speed? This is a very hilly district, and about one-third of my mileage will be with sidecar. Of course it will be necessary to take the same degree of engine tune as granted in each case.—A.E.J.

On the top gear you could not hope to get the same results with a 4 h.p. as with a 5 h.p., but with the two-speed gear you should get better. On the whole, what we should recommend is a twin with two-speed gear, and if you can manage to get one of these we should strongly recommend you to do so.

## Glasgow to Leicester.

**?** I see from *The Motor Cycle* that you give information to motor cycling correspondents regarding the best and shortest routes between certain places.

I should be very glad if you could give me your advice for riding from Glasgow to Leicester, and also from Glasgow to Stamford, for the middle of December. I ride a four-cylinder F.N. machine (1910 model), and want to avoid hills and towns as much as possible.—M.G.C.

Your best route would be as follows: Glasgow, Lanark, Peebles, Galashiels, Melrose, Coldstream, Wooler, Alnwick, Morpeth, Newcastle, Durham, Darlington, Northallerton, Boroughbridge, Wetherby, Aberford, Ferrybridge, Doncaster, Worksop, Mansfield, Nottingham, Loughborough to Leicester. To get to Stamford, instead of branching off at Doncaster go straight down the Great North Road, through Retford, Tuxford, Newark, Grantham, to Stamford. We have purposely given you a roundabout way, as you have asked us to avoid hills. The most direct way from Glasgow

to Leicester is to go through Hamilton, Beattock, Lockerbie, Longtown, Brampston, Alston, Middleton-in-Teesdale, Barnard Castle, Scotch Corner to Boroughbridge, and then as we have previously mentioned.

## Long and Short Stroke Engines.

**?** I should be glad of your opinion of the above engines, and also your answer to the following questions: (1.) Would you consider the  $3\frac{1}{2}$  h.p. long stroke 79×100 mm. suitable for sidecar? Is it not more inclined to knock than the 85×88 type? (2.) Would you say 79×100 gave more power than 85×88? It is supposed to be more flexible, I believe. Would you say that is correct? (3.) Is the Norton a clean engine? How about compression?—J.K.

(1.) Yes, the engine is suitable for sidecar work. It does not appear to knock more than an 85×88 engine. (2.) It is quite as powerful and flexible as an engine of 85×88 mm. (3.) The engine certainly keeps clean. The compression is moderate.



AN IMPRESSION OF THE MORGAN RUNABOUT AT SPEED.

H. F. S. Morgan travelling at a mile a minute speed during his hour record of 59 miles 1,123 yards.



Bentley (Hants.) to Blackheath.

?

I shall be very much obliged if you will kindly tell me the best route from Bentley, Hants., to Blackheath, avoiding traffic as far as possible.—D.H.C.

You, best route would be as follows: Bentley, Farnham, Hog's Back, Guildford, Shalford, Shere, Gomshall, Dorking, Reigate, Redhill, Westerham, up Westerham Hill, then through Hayes, Bromley, and thence to Blackheath. If you do not care to ascend Westerham Hill, you had better continue your journey a little further on till you reach Riverhead, north of Sevenoaks, where turn left.

#### Lamps and Burners.

?

I would be grateful for your valuable opinion on the following questions: (1.) Can a 1913 T.T. roadster Triumph safely carry a 6½ in. Rushmore headlight weighing, without bracket, 6½ lbs.? I notice a big F.R.S. set for the head of a machine weighs: Lamp 4½ lbs., generator 2 lbs., bracket 1½ lbs., so presumably, when in actual work, this strain would amount to approximately 9½ lbs. to 10 lbs. (2.) Would you recommend my fixing a Rushmore to the handle-bar stem in head or the girders of the front fork? In the latter position, would vibration be excessive? (3.) I have a 14 litre burner in my F.R.S. Does that mean I consume 14 litres of gas per hour? Is 14 litres an average burner? (4.) How many litres go to a cubic foot? (5.) I have a Sentinel generator which I find admirable. It is guaranteed to burn for five hours; probably it will do about four hours. Does that mean that a charge of carbide and water produces from 56 litres upwards of gas? (6.) A Rushmore 6½ in. lamp carries a 14 litre burner. Could I, consequently, burn this lamp as long as the F.R.S.? (7.) Does a consumption of 14 litres demand a given pressure being maintained? (8.) Does the area of the lamp affect the pressure demanded?—R.B.R.

(1.) We should say that the Rushmore lamp could be easily carried on this machine on one of the special brackets

supplied by the lamp makers. (2.) The most satisfactory fixing would be on the handle-bar stem, or round the handle-bar. The girder of the fork would be most unsuitable, as the lamp would be constantly changing its angle. (3.) A 14 litre burner means that it would consume 14 litres of gas per hour. This is the average size burner. (4.) There are just over 28 litres in a cubic foot. (5.) Assuming a 14 litre burner: 56 litres downwards as burner capacity represents maximum at normal pressure. (6.) Yes, you could burn the Rushmore as long as the other lamp mentioned. (7.) Naturally, it means that the gas is given off comfortably in the generator, and the flame must not be flaring. (8.) We do not think so.

#### Liabilities of Dog Owners.

?

Would you please inform me if I have any chance of obtaining compensation in the following case: In passing along a country road in the middle of the day with a motor cycle and sidecar at a speed of about 10 to 12 m.p.h., as to which I have two independent witnesses to prove, a dog rushes out of a gate in a field, striking the wheel of sidecar and breaking axle, throwing out passenger. The person with the dog was standing on the opposite side of the road, about thirty yards from gate from which the dog came, the gate being on the left-hand side of the road. Also has the owner of the dog any claim against me for injury to dog (if any)?—F.C.

Our legal adviser writes as follows: "Your correspondent has no claim against the owner of the dog unless he can show that the dog was of a vicious nature, and that it was customary for it to rush at motor cycles, and that the owner knew of its propensity. This does not seem to be the case, as the dog was evidently running across to its master, and had no evil intentions towards your correspondent or his cycle. On the other hand, the owner of the dog would have no claim against your correspondent, if, as would appear to be the case, he was not negligent in the way he was riding his machine."

#### Misfiring at Slow Speeds.

?

I have trouble with the starting of my 1912 2½ h.p. Humber, it only firing on the back cylinder until I get the engine working at about 15 m.p.h. This I have to do with the aid of the pedals, which is unpleasant. When I have got over this difficulty the machine is all one could desire. I should be very glad if you could give me a solution to this little difficulty. I am using a No. 28 jet and have had both cylinders down, but cannot find any defects in either, both having about the same compression.—A.H.T.

In the ordinary way we should imagine it was due to a defective or sooted plug in the front cylinder. Try a change. Also, the trouble is possibly due to the carbon brush conducting the high tension current to one of the cylinders sticking in its guide, or may be to the inlet valve sticking. Remove both magneto carbon brushes and wash them in petrol, also follow closely the working of the contact breaker, making sure that the platinum points are clean and flat.

#### Electric Lamps.

?

I am thinking of fitting my head light up for electricity, as I am tired of the constant trouble caused by acetylene. I propose using a 40 amp. accumulator, and a four or seven candle power Osram bulb. (1.) Will a metallic filament bulb withstand the vibration of a motor cycle? If not, can you advise me what sort of bulb to use to get the best light? (2.) Will the accumulator stand the vibration if placed somewhere in the region of the pannier bags on the carrier?—J.H.G.

(1.) A metallic filament bulb will withstand the vibration, but it is advisable not to switch on the current while the machine is on the move. (2.) The accumulator, if a good one, will stand the vibration; we have had one in use for nearly two years, and for short distances every evening much prefer it to acetylene. The accumulator is charged about once every month or five weeks (it is a 20 amp. hour, and the lamp consumes .6 amps).

#### READER'S REPLY.

##### Belt or Clutch Slip.

An excellent tip for distinguishing belt slip from clutch slip is to run the machine with the belt or clutch slipping for a hundred yards or so and then put the finger on the clutch. If clutch is hot or very warm the fault is there. The same test may be made with belt pulley. —OSCAR C. FRIED, Rekawinkel, Austria.

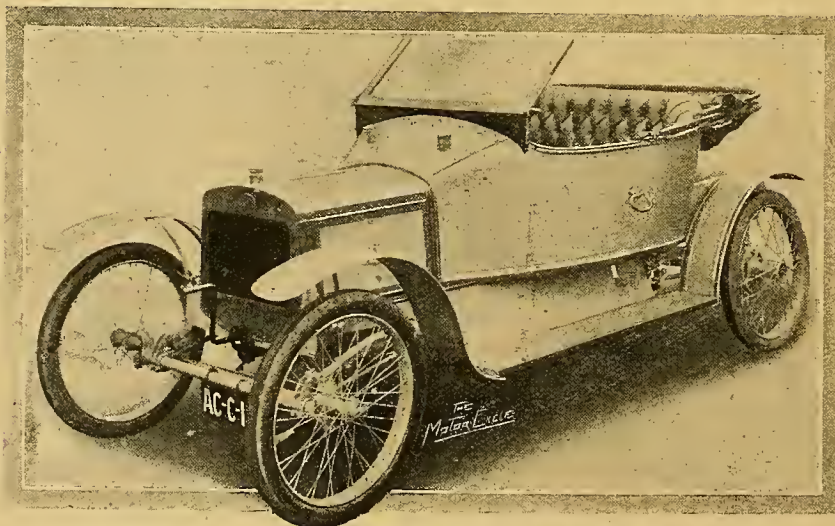
#### EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed to The Editor.

"Mac" (Crewe). Binks and Senspray carburettors on 3½ h.p. Premier.

"T.H." (Sydney, N.S.W.) Two and three-speed counter-shaft gears on 1912 Rover.

"W.F.A." (Godalming).—8 h.p. J.A.P. engine (1912) fitted with Lukin, S.P., and Senspray automatic carburetters, as to petrol consumption, speed, etc.



three-quarter front view of the Invicta. This machine was described in our issue of November 14th. It was used outside Olympia last week for trial trips and evoked great admiration.



# MOTOR Ladies

by Mrs McCooke



# CYCLES at Olympia

THERE is nothing in the motor cycling world so much looked forward to now-a-days as the Olympia Show. It is really one of the most wonderful sights imaginable to see the thousands of people arriving each evening by tube, car, and 'bus. The jollity and good feeling prevalent in the Hall make one feel that motor cycling is certainly one of the great joys of life.

This year more than ever the Show seems to have been a social event, and a very noticeable feature was the number of married couples of all ages who might have been seen walking round, criticising and testing the comfort of the different types of motor vehicles.

It has long been maintained that the success of motor cycling depends upon the participation of both sexes in the movement. This has been amply demonstrated by the enormous boom in sidecars and open frame machines during the present year. Never before in the history of the sport have so many ladies been seen on the open road, either as the occupants of sidecars or as riders of solo machines; in fact, they have rivalled their more favoured sisters who have attained to the luxury of the motor car.

## An Increasing Market.

I am told that one firm alone have turned out 300 ladies' machines this year, and hope to make 400 during 1913. Another firm have already booked orders for fifty. At present the fringe of the movement has only just been touched: another year or two will probably see great developments. The rising generation are enthusiasts on solo riding, leaving their parents to take up the sidecars and cyclecars.

Manufacturers now have so many models to show that it must have been a matter of difficulty to stage each one to the best advantage. In consequence, some of the open frame models were placed on high, rather inaccessible stands, which made it very difficult to examine some of the interesting points critically.

Ladies' machines have been greatly improved, and are much more interesting than those of any previous year. The designers of the several models are to be congratulated on the progress made. Frames have been re-designed and strengthened, mudguarding has received special attention (although in one or two cases there is still room for some improvement), starting devices have been fitted, and, lastly, makers have realised that ladies do not wish to stop every few miles to buy petrol, and have fitted larger tanks. This is in itself a boon.

The machines exhibited at Olympia place themselves naturally into three classes:

1. Single-cylinder machines.
2. Twin-cylinder machines.
3. Sidecar machines, which may be singles or twins.

The first-named claims the greatest number of models, the power ranging from 2 to 3½ h.p.

The 2 h.p. Motosacoche is almost identically the same as was exhibited last year, and for its purpose has no rival. It is light, very clean, and easily handled, and is, in fact, ideal for shopping and visiting.

## Single-cylinder Models.

The Hobart has been greatly improved, and looks much more workmanlike than before. The engine is now fitted vertically instead of inclined, and is slightly larger. All the moving parts are well enclosed by shields. A Sturmey-Archer three-speed gear is fitted.

The open frame Singer is a very smart-looking little mount, and simplicity is its keynote. It is fitted with the renowned 2½ h.p. Singer engine, and tucked away in the crank case is their excellent two-speed gear. The starting arrangement is good, and the clutch device is a marvellous piece of mechanism. This machine has a high turn of speed, and is altogether a most efficient and comfortable little mount. Some small improvements in the mudguarding would make it ideal for long or short distances.

A very interesting and handy-looking machine is the Veloce, which made its *début* at the Show. This model also is fitted with a 2½ h.p. engine, and has a two-speed gear in the crank case, as well as a free-engine arrangement and forced lubrication. Its method of oiling is quite unique and gives no trouble. An indicator rod passing up the side of the petrol tank keeps the rider informed as to the proper flow of oil. It will be interesting to know how this little machine performs on the road. We welcome it as a very promising looking mount, and congratulate the makers on their enterprise.

## A New Comer.

Another newcomer to the ranks is the Ivy-Precision. This name is so well-known in the motor cycle world that great things will be expected. Although this is only the second lady's machine made by the firm, the excellent design and finish are worthy of great praise. It is fitted with a 3½ h.p. engine, and a Sturmey-Archer three-speed gear.

A very noticeable feature is the kick starter, which is fitted on the right-hand side of the machine and slightly in front of the ordinary pedal position. To start the engine only a slight push forward is required. This appears more natural than a back kick.

The engine and carburetter are enclosed by easily removable shields clipped to the down tubes.

Although a good solo machine the Ivy is specially built for sidecar work. The frame, with its double down tubes, is remarkably strong, and extra large oil and petrol tanks have been fitted.



**Ladies' Motor Cycles at Olympia.—**

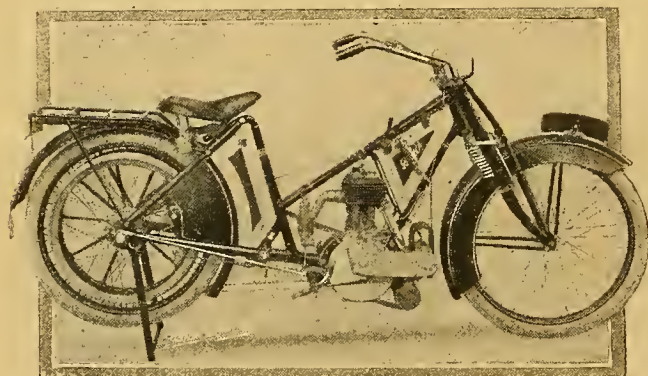
Another machine of this type is the  $3\frac{1}{2}$  h.p. Brough, which is absolutely bristling with good points. The frame is strengthened by means of duplex down tubes, which are exceedingly neat and graceful as well as strong. Of special note are the extra air-cooling arrangement, the easily detached front wheel, and the efficient guarding which all point to the practical mind of the designer. It is fitted with the Armstrong three-speed gear and handle starting, and would be an ideal sidecar machine for a lady.

An open frame machine on rather novel lines is provided in the Swan, which may be used by either sex. Generally speaking, however, it is not altogether suitable for a lady, the saddle position being rather high, and the saddle itself, although excellently sprung, not giving a feeling of absolute safety. The mud-guarding on both wheels, as well as under the engine, is very satisfactory: in fact, it ought to be one of the cleanest machines on the market.

**Twin-cylinder Types.**

For those ladies who prefer twin-cylinder machines four firms were showing models.

The  $2\frac{3}{4}$  h.p. Douglas holds pride of place in regard to popularity, and its suitability has been fully demon-



Valve side of the lady's model  $3\frac{1}{2}$  h.p. Brough exhibited at the Show.

strated in open competitions during the past season. The chief alteration for 1913 is in the mudguarding, which has been extended outwards on each side of the front wheel.

The Enfield Cycle Co. were showing a 3 h.p. twin in place of last year's single-cylinder. This machine possessed many smart features, notably the unique oiling arrangement which is operated mechanically from the engine. The shields are most cunningly fitted, being hinged from the top tubes and fastened down by means of twist clips. The gear levers and brake pedals are not mounted on the footrests, so that should the machine fall no damage to the former would result. The overhead inlet valves and plug terminals are fitted with very efficient protectors.

Two 6 h.p. models of ladies' machines were shown by the Rex Motor Manufacturing Co., one being attached to a sidecar. For this work it ought to be one of the best, but its use as a solo mount for a lady is questionable on account of its weight and starting arrangements. It would be safe to say these two machines had the most serviceable mudguards of any ladies' machine in the Show.

The remaining open frame machine goes into a class of its own. It is the  $3\frac{3}{4}$  h.p. Scott—a machine

scarcely to be recommended to a beginner, but eminently suitable for a lady with some little experience of the art of motor cycling. The riding position of this machine is perhaps the safest and most comfortable of any open frame machine on the market. The frame is remarkably low, and every part is well protected, including the driver.

**The Position of the Speed Gears.**

With one exception all models were fitted with two or three-speed gears and free engines. The hub gears seem to be the most popular, although perhaps the counter-shaft geared machine is the better balanced and the more comfortable to ride.

One of the essential points of a lady's machine is the simplicity and ease of starting. On the whole the Show machines had been well attended to in this respect, particularly the Singer and the Ivy-Precision.

The mudguarding is far in advance of last year (the past summer may account for this), but we lady riders are taking some little credit to ourselves for indirectly helping on the movement. A clean machine is a *sine qua non* for a lady. One point which seems to escape notice by makers is that just behind the saddle-pillar on both sides the mud thrown from the rear wheel reaches the rider's coat.

**Gear and Brake Levers.**

Owing to the general design of an open frame machine it seems to be the practice to mount the brake lever and speed-operating pedal on the footrests. After the slightest fall or mishap the footrests would probably be bent, and the back brake and gear mechanism would be rendered inoperative. Several of the Show models were mounted in this way.

In saddles, again, a great improvement was noticeable. The majority of the machines were fitted with very comfortable saddles, the XL-All seeming to be the favourite.

The greatest stumbling block to the popularity of motor cycling for ladies is the almost prohibitive price of motor bicycles, especially those with open frames. This is the outcry of all the girl cyclists one meets, and one cannot at the moment see any signs of a reduction.

I believe one Show model may be marketed at £45, and, if so, will be excellent value for the money, as it is fitted with speed gear and free engine.

**Dress and Equipment.**

The disappointing part of the Show was in the clothing. Ladies were practically uncatered for.

The Service Co. were showing a cape and detachable hood which would be of great service to sidecarists, but certainly not a thing of beauty.

The Express Rubber Co. had some rather nice silkproof coats in various colours, but it was difficult to get any information about them as to price, as they only supply the trade.

Messrs. Dunhill were showing some macintosh hoods.

These notes would be very incomplete without some reference to the wonderful little Auto-wheel. The simple method of attachment to any ordinary bicycle, and the whole idea of the thing being so self-evident, seemed to appeal very strongly to all cyclists, and we may expect to see several on the road in the near future. Locomotion by this means is a pleasure in store.

M.C.C.



# Avon Motor Cycle Tyres

Suitable for all climates.



## TRICAR.

24in., 26in., and 28in. diams.  
24in. ... 40/-  
26in. ... 42/6  
24in. to fit 24in. rim ... 45/-  
3in. to fit 24in. rim ... 50/-

## CYCLECAR.

Covers in this Pattern, 650x65, with voiturette beads ... 50/-



## SUNSTONE.

26in. only.  
24in. section, 45/-  
24in. ... 50/-  
Made by our new Electro-Hydraulic process, which ensures uniformity in casing and tread, and produces a superb finish.

## BICAR.

24in., 26in., and 28in. diams.  
24in. ... 32/6  
26in. to fit 24in. rim ... 34/3  
24in. rim ... 36/9  
3in. to fit 24in. rim ... 41/9  
Suitable for 3 1/2 in. to 5-6 h.p. machine.



## STONEHENGE.

24in., 26in., and 28in. diams.  
24in. ... 25/-  
26in. ... 26/9  
28in. ... 2 / 6  
24in. to fit 24in. rim ... 31/-  
Extra strong casing.

## TUBES (fitted with Motor Cycle Valves).

24in., 26in., and 28in. diameters.

AVON Quality (Red).		NOVA Quality (Red).	
1 1/2 in.	8/-	1 1/2 in.	6/9
2 in.	8/9	2 in.	7/6
2 1/2 in.	9/6	2 1/2 in.	8/3
2 1/2 in.	10/3	2 1/2 in.	9/-

All motorcycle tubes can be fitted with the Avon Dome Ends at 2/- each extra.

## DRUID.

24in., 26in., and 28in. diams.  
24in. ... 21/-  
26in. ... 22/9  
Also 26in. x 1 1/2 in. ... 19/3  
Suitable for 2 1/2 to 3 1/2 h.p. and Sidecar wheels.



## Lightweight A.

24in., 26in., and 28in. diams.  
24ins. ... 17/9  
26in. ... 19/-  
Also 26in. x 1 1/2 in. ... 16/9  
As a cheap cover this cannot be beaten.

## AVON DOME ENDS.



Easily fitted. Easily detached.  
Registered Nos. 572, 420.

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24in., 26in., and 28in. diams.  
24in. ... 15/6  
26in. ... 16/3  
Also 26in. x 1 1/2 in. ... 14/9  
A special grade at a special price.



## COMBINATION.

24in., 26in., and 28in. diams.  
24in. ... 42/3  
26in. ... 44/-  
28in. ... 45/9  
3in. ... 49/3  
Steel and rubber studs: an ideal all-weather non-skid.

## AVON MOTOR CYCLE BELTS.

5in. ...	1/4 per foot.	3in. ...	1/10 per foot.
7in. ...	1/7 " "	1in. ...	2/2 " "
1 1/2 in. ...	2/7 per foot.		

## RETREADING (any make of Cover).

26in. or 28in. x 2in., 2 1/2 in., or 3in.	
Extra heavy tread, Round Stud or 7-ridge pattern	12/6
Medium heavy tread, Round Stud or 7-ridge pattern	10/6
Combination tread	22/6
Steel-studded tread	28/-

## Steel-Studded.

24in., 26in., and 28in. diams.  
24in. ... 45/9  
26in. ... 47/9  
28in. ... 49/3  
3in. ... 52/9  
Specially constructed studs, large base.



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a***B.S.A.**


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*Perfect in every Part.*  
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and forms a comprehensive guide to all that is best in motor bicycle construction. As a book of reference it should be in the hands of everyone interested in motor cycling. Each B.S.A. Motor Bicycle is shown by a full page illustration printed in colours. The reader thus has the advantage of seeing at a glance how B.S.A. Motor Bicycles really appear, and is better able to appreciate the pleasing design and beautiful finish of these "Perfect in Every Part" machines. The many exclusive refinements and 1913 features of B.S.A. Motor Bicycles are illustrated and described, and useful information on the driving and care of motor bicycles is also included.

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**13, SMALL HEATH,**

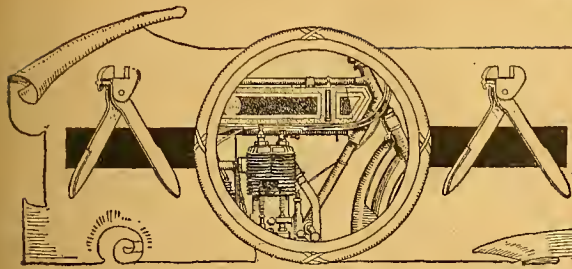
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 "Some Helpful Hints for Riders of B.S.A. Motor Bicycles."



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**BIRMINGHAM.**

Use only B.S.A. Cylinder Oil for your motor cycle.  
 It ensures a cool running engine!





## AT THE SHOW.

A Faddist among the Motor Bicycles

By B. H. DAVIES.

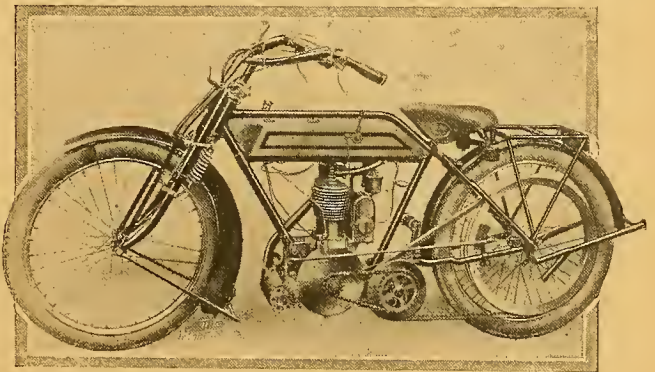
**T**HERE was a time when I carefully shepherded any youthful relative who went up to a motor cycle show with a doting parent's cheque burning his pocket. It was so easy to invest £50 in a manner likely to impale the tyro on the horns of a dilemma represented by disillusion or bankruptcy. But nowadays I pat young hopeful on the back, give him my blessing, and bid him call round in a week and tell me what he's bought; for I know he is sure to have a jolly season whatever bicycle takes his fancy. All machines are roadworthy. One may be more likely to damage a standard speedometer; one may require new engine bushes a month sooner than another; one may have softish valves, rings, and cylinders; but practically the entire exhibit may be compared to Charley's Aunt, Tennyson's brook, or any other symbol of perpetual motion. The greenest duffer can scarcely find a "dud jigger" in the entire exhibition. (P.S.—This judgment does not necessarily apply to all the cyclecars.)

An aged and *blasé* scorcher like myself is apt to visit a show in unduly critical mood; but criticism for once must have reference to what was not there, and ought to have been there, rather than to the actual exhibits staged. I wandered from stand to stand, and found on each a good engine, strong frame, sound ignition, improved carburation, excellent transmission, reliable brakes, etc., etc. Details show great ingenuity and refinement. The comparative absence of originality and genuine innovation was a thing to weep over; but the public are to blame for that. They will not buy unconventional articles; the manufacture of motor cycles is a trade, not a philanthropy;

capital is limited, and dividends are desirable. Hence a firm which comes to the Show knowing that double its 1913 output is easily saleable has small inducement to consider revolutionary possibilities.

### Straws and the Wind.

Things are moving fast in the transmission world. Only yesterday a few heretical engineers were coquetting timidly with variable gears—mostly heavy two-speed hubs or two-speed counter-shaft gears, seldom

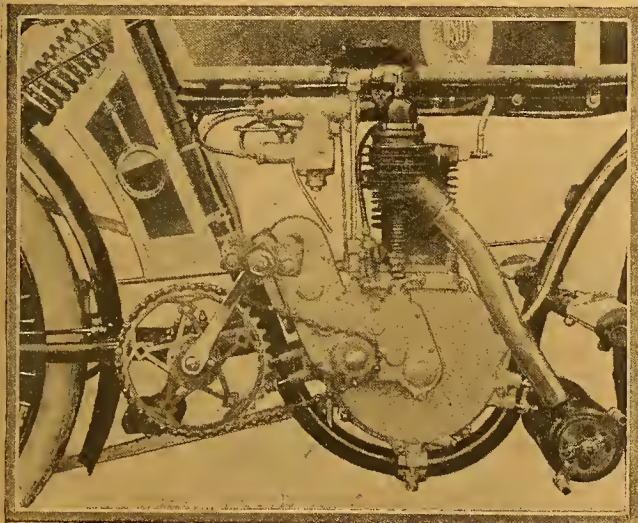


New 3½ h.p. Day-Leeds, on which combined belt and chain drive has been adopted.

free from serious technical flaws. To-day a cheap, light, reliable three-speed gear is listed by practically every exhibitor; and quite evidently within a short time the three-speed gear will "advance quick march" from the hub to the counter-shaft, a change which will enforce two-step drives on all roadsters. The battle royal between belt and chain will then have reached its Chatalja, and we shall see whether

- (a) enclosed chains,
- (b) enclosed chain and naked belt,
- (c) enclosed shaft and naked belt, or
- (d) enclosed gear and naked belt

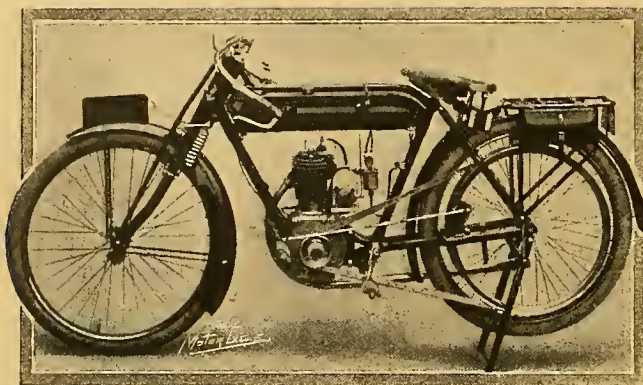
is likely to be the victor. Other combinations are, of course, possible. I doubt myself whether the fore chain will be permanent, since other rigid substitutes offer a prospect of neater aspect and less adjustment. I doubt also whether the secondary belt will ever be ousted, for it touches the zenith of simplicity and cheapness, it is satisfactory in use, and it leaves a truly accessible back wheel. I think that the 5 h.p. Hazlewood, with the counter-shaft three-speed hub, may prove to be as true a prophet as any. I cannot regard hub gears as final, yet, *per contra*, the three-speed hubs are too good to die; they are cheap, light, compact, efficient, and reliable. Nobody has yet evolved a counter-shaft three-speed half so attractive as a migrated hub would be.



A N.S.U. refinement. The pedal kick-starter added for 1913.



At the Show.—



2 1/2 h.p. Junior T.T. Calcott. The cylinder is offset.

**Wear of Bearings and Lubrication.**

We have heard a lot about short-lived engine bearings lately, and no wonder. Bearing pressures must have increased tremendously since 1903, the size of the bearings has rather been decreased than otherwise, lubrication has remained stationary for ten years, and thousands of duffers have entered a sport which was once the monopoly of mechanics. I did not realise what a makeshift splash lubrication is, whether operated by a hand pump or a pump and drip, until I heard the car owners commenting on the cyclecar lubrication systems. The motor cycle industry stands where the push-bicycle industry was when everybody with the necessary dibs bought a new pedal cycle roadster every spring. So long as this habit continues, makeshift lubrication and short-lived bearings will be tolerated. But to-day I ride a push-bicycle, I bought eight years ago; and a similar era is ahead in the motor cycling world. Consequently one may prophesy with confidence that such oiling systems as are to be seen on the 3 h.p. Enfield, the 3 1/2 h.p. W.D., the Veloce, and a few other machines show which way the wind must blow. They are vanes of progress.

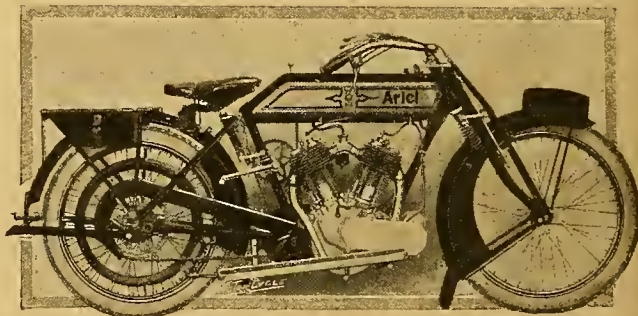
**Carburetters.**

The automatic and semi-automatic carburetters have swiftly entrenched themselves. Derided by croaking experts for years past, they have none the less got their teeth into the general public. I have tried most of them, and find them a tolerable compromise. You may sacrifice a few "revs." (with some examples),

you may sop up more petrol per century, you may find them tricky to tune to the finest limit; but you get an excellent average product of gas, and you get it without tap-twiddling. Cyclecars will aid their evolution vastly; the man who has a clutch and three gears does not want to be bothered by an air lever. But the problem is easier with a multi-cylinder engine.

**Engines.**

I found nothing to encourage a general departure from the side-by-side m.o.v. Valves in the cylinder head may give a shade more speed, but they do not ease the job of cleaning the cylinder or attending to the valves themselves. When we get oiling systems which lengthen out the periods between decarbonisations, overhead valves will have a better chance to show their merits. At present I am sure 95% of the buyers prefer side-by-side valves. The decompressor has come too late. It is an admirable fitment on a T.T. single gear, or to ease the shove of a kick starter; but a solo rider with a variable gear will not value it excessively, for the engine is so easy to start without it. I particularly liked the James notion of operating the magneto and decompressor by means of a standard two-lever carburetter control. Four years ago I would gladly have paid £5 for a good decompressor; this year I had one on my three-

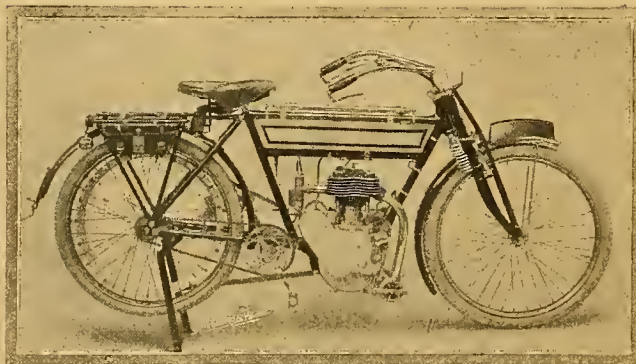


7 h.p. twin-cylinder Ariel, fitted with two-speed counter-shaft gear, chain drive, and handle starter.

speeder, and I never used it except for a wheel-pull engine start. Decompressors will be convenient, but scarcely as necessary as once they were.

**Mudguards.**

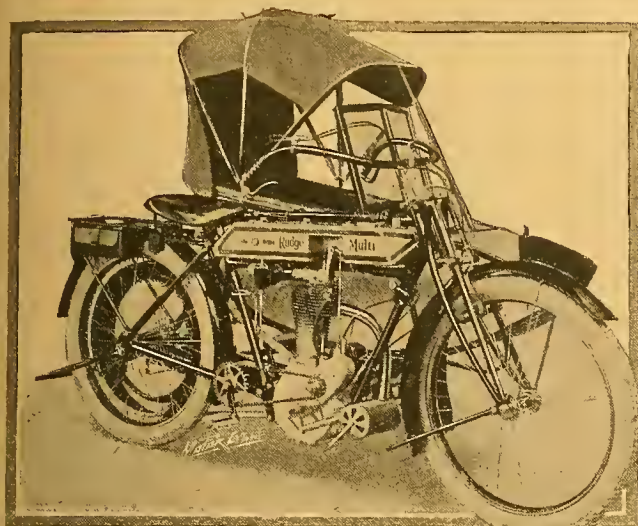
There will be much less mud-throwing next year, but it is easy to exaggerate the value of the new wheel-sheaths and broad footplates. Machines will still need cleaning from stem to stern after a day's mud-plugging, though the pile of scrapings should assume more modest dimensions. For consider, mud generally means rain, and even when it doesn't, no guards can intercept all the flying clogs. After a rough day on the road, the machine will be lightly filmed with mire (instead of heavily), oil will still exude with considerable freedom from most engines, rust will still hide amidst all the tiny bolted-on fittings. I have attacked the myriad little fancy chinks and cran- nies; the practical motor cyclist has no hopes of a machine which will never need cleaning, but he would give the world for a machine which is easy to clean. It does not matter how much you encase the wheels of a 30 m.p.h. two-wheeler, you cannot keep liquid mud off it. But a little thought would render the machine far, far easier to cleanse.



Valve side of a new 2 1/2 h.p. mount made by Components, Ltd.



At the Show.—



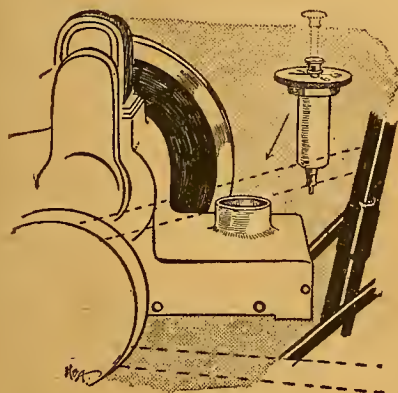
o.n.g. single-cylinder Rudge-multi sidecar combination. The bore and stroke of the engine are 85 x 132 mm. Note the cut away tank for the overhead inlet valve and tappet.

### Clean Design.

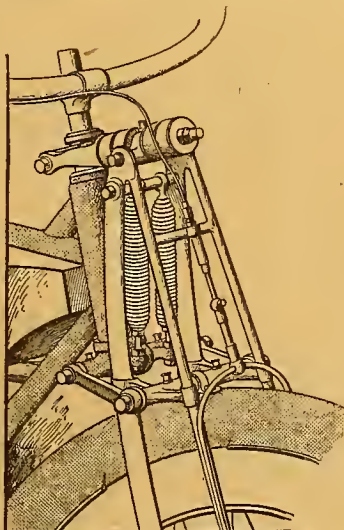
I notice how wisely car designers tackle this point, so grossly neglected by motor cycle engineers. A typical modern car engine resembles nothing more than an up-ended suit case. The under-works of the chassis have smooth cylindrical or spherical surfaces, devoid of excrescences. No small plated parts are to be found in the subterranean, mud-catching regions. The chassis is often a symphony in cubes and spheres, as smooth as a maiden's cheek. Now the Stellar machine with its unit construction gives a blurred idea of a distinct possibility. My prophetic eye peers ahead, and dimly discerns a machine which resembles these cars. All the details of its forks and brakework are blacked. It has disc wheels. The magneto is self-advancing. The automatic carburetter is controlled by a twisting grip and internal wire. The shape of the carburetter, magneto, gear box, and engine are not designed to grip their innards com-

pactly, but to afford smooth, hosiabable surfaces, cubical or spherical. The valves and tappets are encased, so are the sparking plugs and their cables. If water-cooled, the engine is merely a large oblong box to an exterior view; if air-cooled, its radiators are detachable, and are the only part with complex outlines. Imagine a four-cylinder *mono-bloc* car power unit seen through the wrong end of a field-glass and mounted in a motor cycle frame and you get my meaning. The transmission is similarly encased. The very toolbags consist of padded metal boxes. There is not a chink or a cranny from stem to stern, and an ostler can be left to hose the outfit down at his leisure. If one of our leading makers produced such a machine for the 1913 Show, without sacrificing any of his present model's merits, what a colossal vogue it would have. Wider mudguards, the trade's present solution, are only tiding over the difficulty. One of the machines which had about the best mudguards in the Show would take three hours to clean after a ride from London to Coventry on a typical November day. I notice that the *débutant* firms, like the Sunbeam and Lea Francis people, show a keen perception of this crying need, though they do not go much farther than the others towards a solution. Mere black enamel and chain cases cannot solve it. We want square engines, spherical gear boxes, cylindrical carburetters, and a scathing elision of all "twiddly bits." Otherwise we shall not rope in the fastidious doctor, the retired major, *et hoc genus omne*; nor yet any damsels of Victorian tendencies.

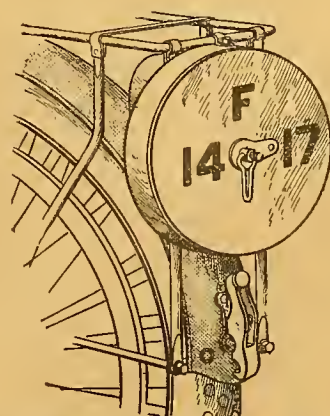
When discussion simmered down to the choice of a machine for next year's riding, I found the selection seemed to depend principally on a man's political opinions. We all had jolly good seasons on our 1912 mounts, and the 1913 editions of the same makers were obviously about 10% better. So such of us as were Conservatives and disliked change gave a repeat order, while those of us who are Radicals and prefer novelty transferred our patronage to the chief rivals of the firm whose mount we bestrode last summer; while the Socialists, well, I suppose that, pending the free provision of State motor cycles, they pressed for the largest obtainable discounts.



The oil sump and filler cap pump on the Wilkinson-Wooler horizontal two-stroke machine.



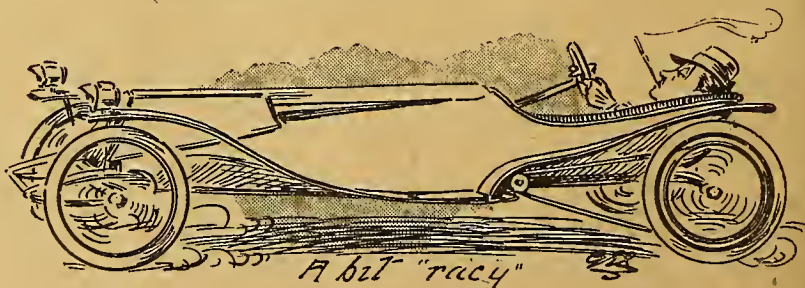
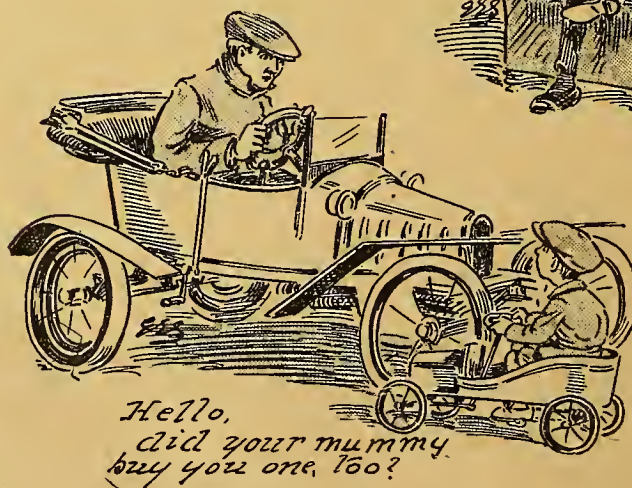
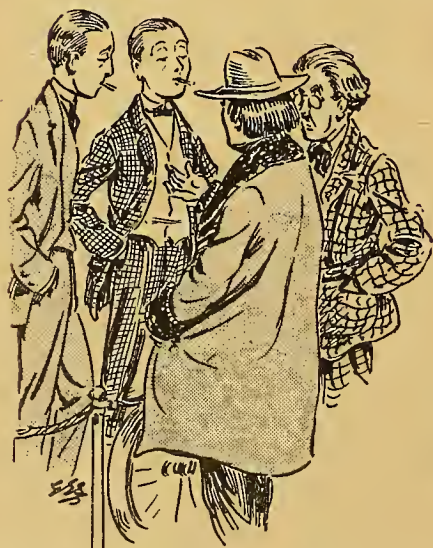
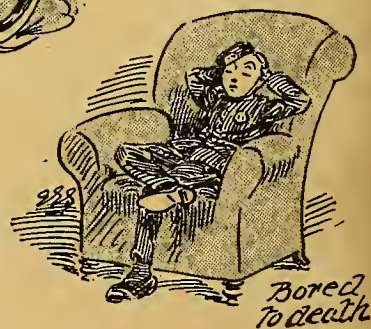
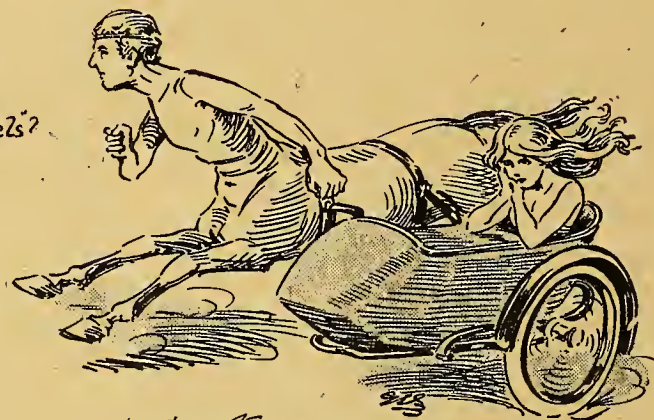
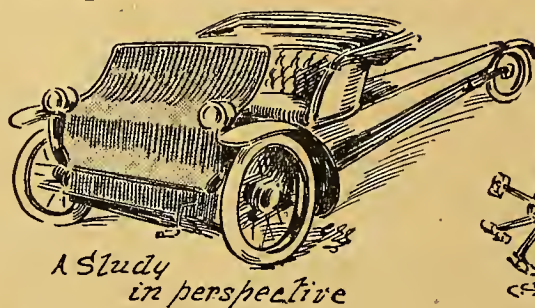
New spring fork with double spiral springs fitted to Ivy-Precision models.



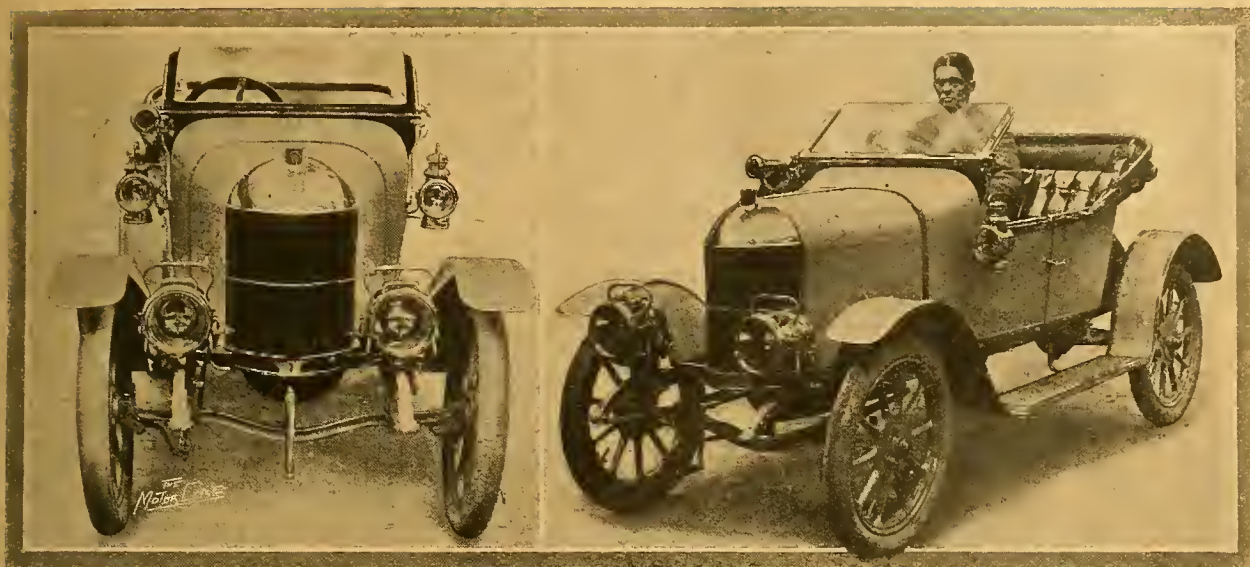
Kerry-Abingdon combined belt case and rear number plate, also showing spring catch to secure stand.



# Our Artist's Impressions of the Show.







Views of the new Morris-Oxford light car, fitted with the four-cylinder 60 x 90 mm. White & Poppe engine, described on page 1450. The frame is by Rubery Owen and Co., and the back axle by E. G. Wrigley. The designer, Mr. W. R. M. Morris, is seen at the wheel in one illustration. He will be remembered by old readers as the designer of the Morris motor bicycle of 1904.

## The Number of Motor Cycles at Olympia.

It is interesting to note how motor cycles were represented at the recent Olympia Show. We give below a few figures compiled by Harry Hewitt Griffin, F.S.S., M.J.I.

### SOLO MOTOR BICYCLES.

#### Transmission :

All belt	...	...	...	...	411.
All chain	...	...	...	...	162
Compound	...	...	...	...	51
Gears	...	...	...	...	13

#### TOTALS.

Sidecars ...	...	...	...	...	144
Solo mounts	...	...	...	...	493
					637

There were no sidecars and bicycles permanently forming part of each other.

### RUNABOUTS.

Of light complete motor cars (now called cycle cars) used for passenger—solo, double, or multi—service, there were:

Three-wheeled	...	...	...	...	8
Four-wheeled	...	...	...	...	54
					62

Of the latter, 9 were of the tandem-seated type. Including cars for goods delivery and chassis there were 110.

## THE NOISE OF MOTOR CYCLES.

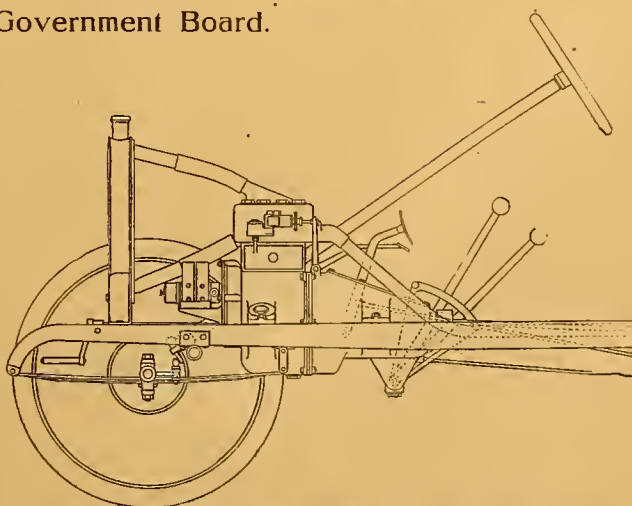
### Edict of the Local Government Board.

On March 31st, 1913, the new Local Government Board order concerning the use of cut-outs on motor cycles comes into force. It will be gathered that cut-outs fitted to the exhaust pipe will soon become illegal; the exhaust gases must first pass through an expansion chamber.

It is pleasing to be able to state that the open exhaust fiends will soon disappear from our roads.

For historical purposes we give below the reading of the Local Government Board Order:

"(7) He shall not use any cut-out, fitting, or other apparatus or device, which will allow the exhaust gases from the engine of the motor car to escape into the atmosphere without first passing through a silencer, expansion chamber, or other contrivance, suitable and sufficient for reducing as far as may reasonably be practicable the noise which would otherwise be caused by the escape of the said gases."



Front portion of the new Perry runabout, showing twin engine and gear box unit.



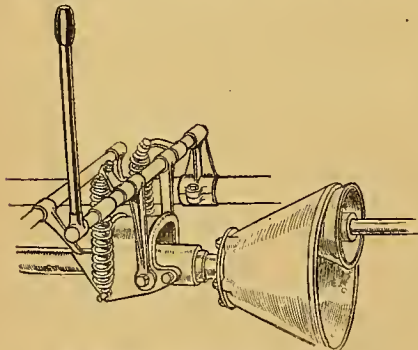
## SHOW MACHINES.

### Clyde.

The 8 h.p. Clyde sidcar machine was a late arrival on the stand of Messrs. Montgomery and Co. Its motive power is an 8 h.p. J.A.P. engine, 85 x 85 mm., 664 cnb. cm., driving by chains through a G. and H. counter-shaft two-speed gear. It will be noticed that a loop frame is employed, a feature which has been standard on Clyde machines during the last ten years. The frame also gives a very low-riding position. The lubrication is by crank case suction through an adjustable drip feed, while as a stand-by an ordinary oil pump is also supplied. The back wheel is fitted with Hoffmann cage type ball bearings, which render the wheel quickly detachable. The silencer is well designed, consisting of an expansion chamber of ample dimensions, which possesses a long exit pipe. The machine is well thought out, and shows the result of the long experience gained by its manufacturer, Mr. G. H. Wait, of Leicester.

### The Media Gear.

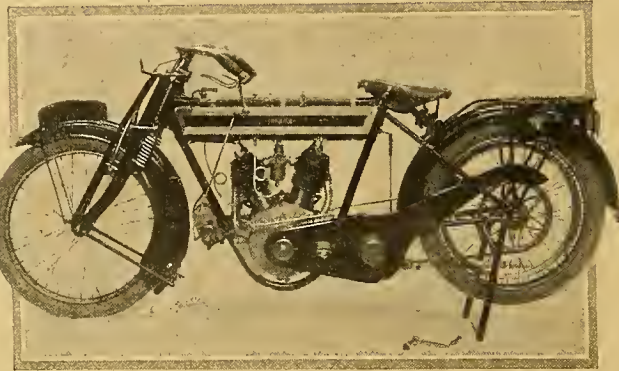
An infinitely variable gear (within limits) of very ingenious and quite practical design is employed in the Media cycle car chassis, shown by Mead and Deakin. The principle upon which it works is one of the oldest in the history of mechanics, viz., friction, but the application discloses several quite novel and interesting points, which are set out in the following description and the subjoined sketch. The latter does not portray all the details of the gear attachment—for instance, the near side frame tube is left out for the sake of clearness—but illustrates the essentials of the device.



An ingenious cone friction transmission.

The engine-shaft is continued rearwards (the crankshaft being longitudinal) to support a conical body of very much the same shape as an ordinary flower pot. This body, which is the driving member of the mechanism, is shod with a special kind of fibrous material. A

second but much larger fern-pot-shaped body, in this case the shell being of aluminium, is similarly lined, and is carried by the front end of the propeller-shaft. The journal bearing supporting the latter is very long, and is



8 h.p. twin-cylinder Clyde-Jap fitted with G. & H. two-speed gear, and chain drive.

swung upon two trunnions, which in turn are supported in a metal housing forming a tunnel over the shaft. This housing is pivoted upon a couple of cranks, and is extended rearwards to provide an anchorage for a couple of stout tension springs. The effect of these is, as will be at once seen from the sketch, to press the inner surface of the large cone upon the outer surface of the small one. The cranks supporting the journal are attached to a pivoted rod, which carries what may be described as the change speed lever.

The gear, as illustrated, is giving a low gear ratio of slightly more than two to one. If the gear lever be pushed to the left, the bottom pivots of the cranks, and the housing to which they are attached, will move to the right, and the large cone will move also in this direction, so that the small cone will be frictionally driving an outer cone of smaller diameter than before. As a consequence the gear is raised. By pushing the gear lever to the extreme left the small cone beds down into the base of the large one and forms practically a cone clutch, thus giving a direct drive and entirely cutting the frictional transmission out of action. It will be understood that the slope of the cones and the length of the cranks are so arranged that the larger cone moves in a direction parallel to the upper surface of the small cone. This means, in effect, that the contact between the two cones is always represented by a line of considerable length, so that the tendency for the cones to slip is reduced to a minimum. This is, of course, one of the great advantages of the gear.

### Free Engine.

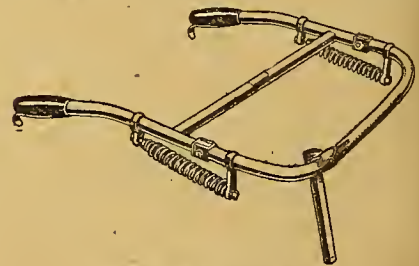
Referring again to the sketch: if the gear lever be moved to the right, the large cone is taken out of engagement with the smaller one, being both lifted from it and slid away from it; and this action provides a clutch effect giving a perfectly free engine position.

The behaviour of the Media gear on the road will undoubtedly be watched

with great interest, as it certainly appears to have several very desirable features—not the least of which is simplicity. It need, perhaps, hardly be pointed out that the propeller-shaft is furnished with a universal joint at its differential end in order to take up the change in angularity of the shaft, though this, owing to the length of the latter, is comparatively small. It will be observed, incidentally, that with this form of friction gear, no reverse is possible except by extraneous mechanism.

### A Spring Handle-bar.

We referred briefly to the Sphinx spring handle-bar in our last issue, and now illustrate this useful device. The chief disadvantage with some makes of spring handle-bars is that they are not sufficiently rigid laterally. The Sphinx handle-bar, instead of having the springing arrangement in the centre near to the stem, is provided with joints on each side, the two sprung portions of the bar being joined by a cross tube. The springs are adjustable, and the lateral

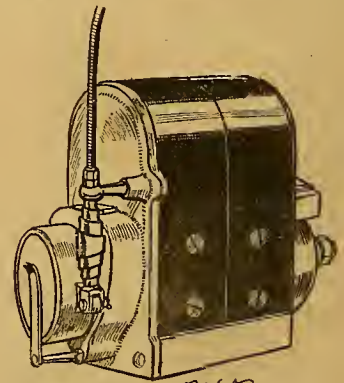


Sphinx spring handle-bar.

bearings are easily tightened. The total range of action is about six inches, and there is no difficulty in mounting, owing to the bars being depressed, as they depress to a stop and are thus rigid. Provided there is the same lateral rigidity as with an ordinary bar there is no question of doubt that the spring handle-bar is very effective in absorbing vibration. The standard size of stem is 7/8 in. It is made by the Sphinx Manufacturing Co.

### Popularity of Dunlops.

A census of the tyres and belts at Olympia showed that there were 45% of Dunlop belts and a large number of tyres.



New Bosch helical spring and stop controlling the advance and retard of the contact breaker.



## CYCLE CARS.

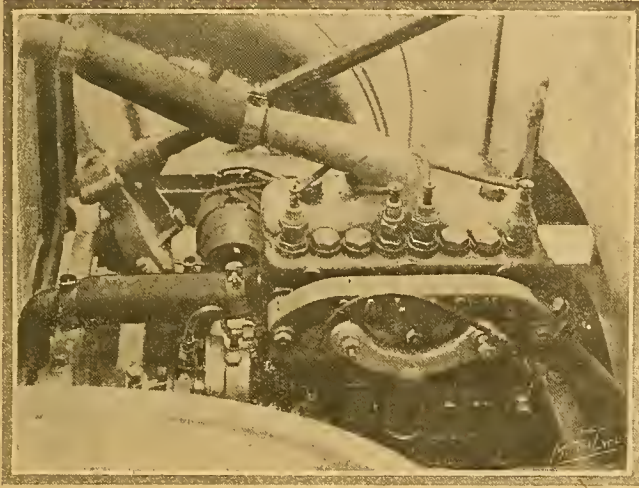
**Ace.**

The 8 h.p. Ace, made by the Salmon Motor Co., Ltd., Burton-on-Trent, was used for trial runs outside the Show last week. It is a vehicle which comes easily under the cubical capacity and weight limit of a cycle car. The frame is of pressed steel, suspended on quarter-elliptical springs at the rear and semi-elliptical in the front. The engine, which develops 8 h.p., has the cylinders, which are 56 x 76 mm., cast *en bloc*, while the valves are enclosed.

The circulation is arranged on the thermo-siphon system. The carburettor is a Binks. The camshaft is driven by skew gearing, which also drives the magneto. The latter is mounted transversely in the chassis, as is the oil pump, which delivers the oil under pressure to jets which squirt it on to the big ends on their downward path, thus preventing any excess of oil being carried upwards. The oil is also delivered into wells over the main bearings.

The clutch is of simple design and consists of two discs, one of steel attached to the main shaft and the other faced with Ferodo attached to the propeller-shaft, the two being kept in engagement by means of adjustable spiral springs. The gear box, which gives two speeds and reverse, contains a bevel-driven cross shaft, whence the drive is conveyed to the rear axle by means of a chain. A slightly more expensive model may be

purchased which has three speeds and worm drive. In the lower priced model the rear wheel brakes are of the internal expanding type, while the foot brake, which is of the shoe pattern, is applied to a drum on the cross shaft. The steering is of the geared type, and the control of the engine is by accelerator pedal. It appeared to be excellent value for £100.



Four-cylinder Ace power plant.

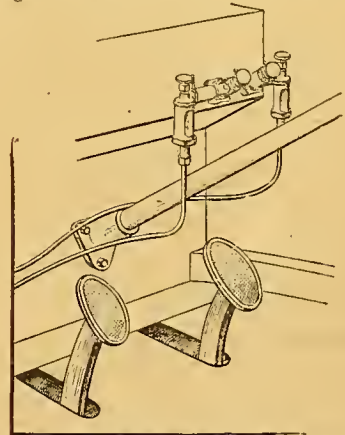
**Eagle.**

We have several times mentioned in these pages that the vehicle known as the cycle car is by no means a new introduction; in fact, it is as old as the motor movement itself. As a proof of our contention there arrived on Monday of last week, at Olympia, two Eagle runabouts which came by road from Manchester. One of these was an original 6 h.p. Eagle made ten years ago and bought for a mere song by the present company, tuned up, and fitted with a new body. This was fitted with a De Dion engine and the old expanding clutch gear and silent chain drive which was exhibited at the earlier

exhibitions at the Crystal Palace. The new type of 6 h.p. will be fitted with a water-cooled engine and the Ralph Jackson epicyclic gear, giving three speeds forward, or two speeds forward and reverse, according to the customer's requirements. The Eagle is, of course, a three-wheeler.

**Tinycar.**

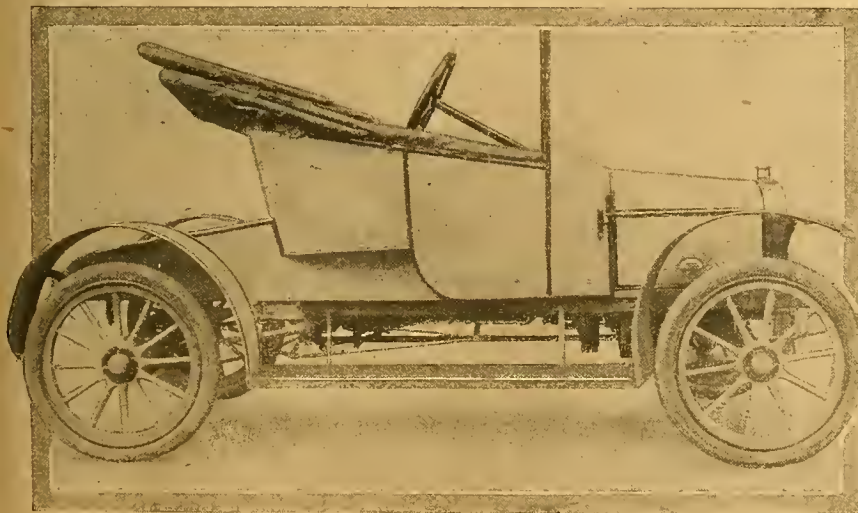
The Tinycar, made by Messrs. Nanson, Barker and Co., Asholt, Yorkshire, and which was only briefly referred to in our last issue, has a suitably stayed tubular frame, in which the engine is set longitudinally in front. The drive is by propeller-shaft to the three-speed gear box containing a cross shaft driven by bevel gearing, through which the drive is finally transmitted to the rear axle by single chain. A differentially geared axle is fitted. The clutch is of the leather-to-metal type and has a heavy rim giving an additional flywheel effect. The engine is the well-known 8 h.p. J.A.P., the carburettor is the Brown and Barlow, and the ignition is by Bosch high-tension magneto. The top gear ratio is 4 to 1. The differential previously referred to is provided with spur pinions, and the axle is supported on ball bearings. The lines on which this vehicle is constructed are quite sound. The following dimensions are interesting: Wheelbase 8ft. 6in., wheel track 3ft. 8in., over-all length 11ft., and over-all width 4ft. 4in. The chassis is suspended on semi-elliptical springs front and rear.



Dash of the Day-Leeds cycle car showing pedal controls and lubricators.

**New Hudson.**

The New Hudson cycle car was possibly more like a motor cycle than any other passenger vehicle in the Show. Mr. A. E. Wilson, the managing director of the firm, told us that he had no intention of enlarging the vehicle until it reached the dimensions and adjuncts of a small motor car. He said they intended to keep it as originally designed and exhibited, *i.e.*, a lightweight passenger vehicle weighing little more than a heavyweight motor bicycle and sidecar, and with the same methods of transmission, etc. Delivery will not be possible for some months, but we are promised a trial of it as soon as the makers are prepared to deliver.



Broadside view of the Ace four-cylinder, two-speed, chain-driven cycle car





#### TIME TO LIGHT LAMPS.

Dec. 5th	...	...	4.50 p.m.
" 7th	...	...	4.50 p.m.
" 9th	...	...	4.49 p.m.
" 11th	...	...	4.49 p.m.

#### Officially Observed Sidecar Trial.

The official information regarding the sidecar ride referred to elsewhere in this issue is that the ride was abandoned at 1,086 miles through the driver falling asleep.

#### Benzole as a Substitute for Petrol.

The Petrol Committee of the R.A.C. are desirous of obtaining information regarding the use of benzole on all types of motor vehicles. Letters sent to the editor, and marked "Benzole," will be forwarded to the right quarter.

#### Next Year's T.T. Races.

F. A. Applebee, jun., will, of course, defend his title to the Senior Tourist Trophy next year, and among other intending competitors may be mentioned O. C. Godfrey and Harry Reed. W. H. Bashall will also defend his title to the Junior Trophy, thus making, with his brothers, a total so far of six entries.

#### French Events.

The meeting of the newly formed F.I.C.M. in Paris on December 14th precedes the date on which the Auto Cycle Club de France will hold its hill-climb at Gometz-sur-le-Châtel. Those who attend the conference will therefore be able to witness the hill-climb and also the Motor Shows in the Grand and Petit Salons.

#### A.A. and M.U. Notes.

**CYCLE CAR MEMBERSHIP.**—Motor cyclist members contemplating the adoption of cycle cars for the next season in place of motor cycles will be interested in knowing that such a change will not effect their rates of subscription, i.e., 10s. 6d. per annum. To retain the benefit of this low subscription, however, it is necessary that the total cylinder capacity of the cycle car engine does not exceed 1,100 cubic centimetres, and the weight of the chassis must not exceed 6 cwt.

**SPECIAL WARNING.**—By request of the Chief Constable of the Exeter City Police, the Association warns members and motorists generally that unless they drive more carefully along the Alphington Road (Exeter-Dawlish and Chudleigh), between the tram terminus and railway bridge (about one mile from Exeter), also on the Exeter-Crediton-Tiverton Road, between the Buller Statue (Queen Street, Exeter) and Cowley Bridge (fork of Crediton and Tiverton Roads), he will be compelled to institute controls on these roads.

#### The Wily Salesman!

An amusing story is told of a cycle car provided with the usual dummy radiator, through the meshes of which an air-cooled engine could be dimly seen. Save for frame and engine, the vehicle was unfinished, and so evidently came into line with the "new simple and cheap motoring." An expert salesman was seen lifting up the back portion to show a customer how little it weighed!

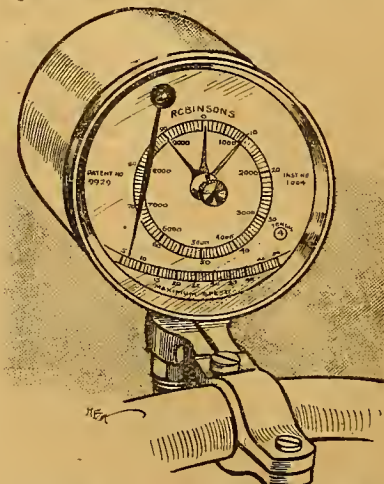
#### A.C.U. Silencer Tests.

The following firms have already entered for the tests: J. C. Lyell and Co., three silencers; A.B.C. Manufacturing Co., one silencer; J. Warley and Co., one silencer; and the Rover Co., Ltd., one complete motor bicycle with their own silencer.

The entry fees for the above tests are £2 2s. for the first silencer and £1 1s. for every additional silencer submitted by the same entrant. Entries close on December 31st, and should be sent to the Secretary of the Auto Cycle Union, 89, Pall Mall, S.W.

#### Non-stop Runs on the Road.

A month ago we were invited to observe an attempt to accomplish a twenty-four hour run on a sidecar without stopping the road wheels. We declined on the grounds that such an attempt would involve inconvenience to other road users, especially drivers of restive horses. We now understand that a similar application to the A.C.U. has elicited a reply in the negative, expressing the same views.



Dial of the Robinson indicator and mile recorder. A red hand (shown black) registers thousands, a black hand (shaded) hundreds, while a pointer (double line) registers the trip. The speed is recorded by the long hand on the left. It is handled by H. Taylor & Co.

#### SPECIAL FEATURES:

STATISTICS AND FEATURES OF SHOW MACHINES.

A NEAT TWO-SPEED GEAR.

A NOVEMBER TRIP ON A CYCLE CAR.

#### "The Motor Cycle" Show Report.

We have to thank readers for congratulations received respecting our report of the Olympia Show. The fact that the descriptions of machines were arranged in alphabetical order and under three separate headings was generally appreciated, as reference was rendered extremely easy.

#### Steel Cylinders for Record Work.

Is it true that Bailey attempted short-distance records last week on a Douglas fitted with steel cylinders? We are told by an eye witness that he was electrically timed by Major Lloyd. The engine had overhead valves, and was carefully kept from prying eyes.

#### Stolen Machines.

A 2 h.p. F.N., registration "LE 1116," was stolen from H. Douglas Leng, 164, Broadfield Road, Catford, S.E., on the 23rd ult.

A model G Douglas was stolen from the Berks County Council Offices, The Forebury, Reading, on Saturday last, the 30th ult. Registration BL 2,744, engine No. 6,619, frame No. 6,370. Particulars should be sent to E. O. Gerrard, Larkfield, Albert Road, Caversham.

#### Cut-outs on the Hammersmith Road.

It is astonishing that more discretion was not displayed by riders of motor cycles who used their machines to ride to and from Olympia. Some of them were attendants on the stands. Racing taxicabs on the Hammersmith Road between 10 and 11 p.m., with cut-outs wide open, may be fine sport, but it somewhat counteracts the good effects of a smart show. Some of the remarks passed by visitors leaving Olympia show that such conduct was not calculated to assist the movement.

#### Reliability Trials.

A cycle car reliability trial in Scotland is suggested by Mr. Massac Buist in *The Motor World*. Certainly a good idea, but was not a special passenger class set aside in connection with the Scottish Trials arranged by the Edinburgh M.C.C. last July, and is almost bound to be repeated in 1913? Furthermore, the A.C.U. Six Days' Trials last August drew entries for cycle cars, and a special class for these vehicles will certainly be included next year. Scottish roads may be traversed if the suggestion to combine the two events and extend the trial to ten days be adopted.



**British Motor Cycles at the French Show.**

The Williamson must be added to the list of British machines to be exhibited at the Paris Salon this month.

**Three-speed Counter-shaft Gears.**

"Ixon" predicts that the change-speed gear of the future will have three speeds and be located in the bottom bracket.

**Petrol Consumption Tests in New Zealand.**

In a recent petrol consumption test in New Zealand, the winner, J. Davies, is credited with covering the whole course of fifty-two miles on a  $3\frac{1}{2}$  h.p. B.S.A. roadster with a consumption of  $38\frac{1}{2}$  ounces of petrol, which works out at an average of 216 miles to the gallon.

**First Cycle Car Trial.**

A cycle car trial is being organised by the Sutton Coldfield and Mid-Warwickshire A.C. for Saturday, the 21st inst. It is open to members only. The course will be to Banbury and back, including Sunrising on the way out and Edge Hill on the journey home. Schedule speed, 18 m.p.h.

**Nice-La Turbie Hill Climb.**

Several entries have already been received for the Nice-La Turbie hill-climb, which will be held on the 15th inst. Among the machines which will be ridden are the Peugeot 5 and 6 h.p. twins. Moto-Réves, Magnat-Debon, Terrot, and two machines fitted with Moser engines, as illustrated in our issue of the 21st ult. Entries close on Sunday, December 8th, at midnight, and should be sent to the Nice Motor Club, Nice, France.

**Gometz Hill-climb.**

We have received an official communication from the Auto Club de France, 49, Rue Lepeltier, Paris, that the Gometz hill-climb will take place on Sunday, the 15th inst., the day after the International Conference of the F.I.C.M. at the Automobile Club de France. Machines will be divided into the usual classes, namely, up to 250 c.c., up to 350 c.c., and up to 500 c.c.; three-wheeled motor cycles (i.e., triars and sidecars) up to 350 c.c., 500 c.c., 750 c.c., and 1,000 c.c. All vehicles of this class must be fitted with a free engine clutch of some kind.

The voiturette or cycle car class will be open to vehicles with single, twin, and four-cylinder engines as follow: Singles, maximum bore 90 mm.; two cylinders, 85 mm.; four cylinders, 65 mm.; and belt-driven machines where the engine does not exceed the dimensions of the three first classes. The competition is confined to touring vehicles. To all competitors who are A.C.U. members taking part in this event the A.C.U. extends its valuable touring facilities.

Those who intend to compete should communicate at once with the secretary, 39, Pall Mall, S.W.

We have received a letter from the committee of the A.C.F., in which they ask us to transmit any entries received direct to them. Entries may therefore be addressed, The Editor, 20, Tudor Street, E.C.

The medals won by the English competitors in last year's event will be presented to them on this occasion.

FUTURE EVENTS	
Dec. 7.—M.C.C. Annual Dinner and Prize Distribution.	
" 11.—Herts. County A.C. Open Quarterly Trial.	
" 21.—Sutton Coldfield and Mid-Warwickshire A.C. first Cyclecar Trial.	
" 27-28.—M.C.C. Annual Winter Run.	
Jan. 1.—A.C.U. Open Silencer Trial.	
" 18.—North Middlesex M.C.C. Open Trial.	

**Show Attendance.**

On Wednesday of last week 6,000 more visitors passed through the turnstiles of Olympia than in any previous year of the Motor Cycle Show, the total number being 27,334.

**Returning to the Antipodes.**

S. L. Bailey is leaving for Sydney, Australia, on the 16th inst. Not long ago he wagered that he would have most of Class B records to his credit before leaving these shores, and by the aid of his little Douglas he has accomplished his ambition. Bailey will be greatly missed at Brooklands meetings.

**Death of Mr. J. W. Davis.**

We very much regret to report the death of Mr. J. W. Davis, late managing director of the Enfield Cycle Co., which occurred on Tuesday last week. The funeral took place on the 29th ult. at Redditch cemetery. Mr. Davis was only 39, and his long and severe illness and death are among the saddest things that have occurred in the history of the motor cycle industry. We offer our sincere condolences to his widow and family in their sad bereavement. Mr. Davis was well known throughout the trade and was respected by all; his loss will be severely felt.

**Paris Show.**

There will be an overflow exhibition near the Grand Salon, Paris, which will be known as the Petit Salon. This will open on the 14th inst. The big show opens next Saturday. A description will be published in our next issue.

**Lighting Byelaws.**

With reference to the lighting byelaws of the Glamorganshire County Council, recently referred to in an article in this journal, we wrote to the clerk to the Glamorganshire County Council pointing out the reasons why we considered there was nothing in the byelaw which required two red rear lamps to be carried on a motor cycle with sidecar attached, and have now received a reply stating that the matter has had further consideration, and the note endorsed on the byelaw now reads as follows: "And also a lamp or lamps showing a red light to the rear." This confirms our view that only one rear red light is necessary in this county.

**W. H. Bashall's Stud.**

We had an interesting chat with W. H. Bashall at the Show last week. He has mapped out a competition programme for next year which should keep him busy. He will defend his title as holder of the Junior T.T. on a Douglas, and will also ride in the Senior race, probably on a Triumph. Before that date he will compete in the M.C.C. London to Exeter Run at Christmas, and also in the Paris-Nice-Monte Carlo event next February, details of which were published last week. For private touring work, Harry Bashall has ordered a 1913 Phelon and Moore, believing that it is unwise to use special competition mounts on the road more than can be helped. His brothers, Aubrey and J. T. Bashall, will also compete in the Tourist Trophy Races.



A WINTRY SCENE IN THE PEAK DISTRICT.

An Enfield rider finds the snowy going somewhat difficult in Buxton.



## SHOW GOSSIP.

Business at the Show was excellent. Several firms will have the greatest difficulty to deliver all orders received during Show week before the 1913 Show comes round.

Are we to have a cycle car race in the Isle of Man next year? The suggestion was put forward in these columns some weeks ago, and we notice has been revived by a contemporary.

The general opinion of the cycle cars at Olympia was that half of them had not had a severe enough testing on the road. Some of the features came in for much criticism. It is common knowledge that a number exhibited last week had not had a proper testing on the road.

Quite a smart idea was that of the Rudge Co., who had a shorthand writer jotting down the criticisms of Show visitors regarding their cycle car. These opinions should prove of great service and guidance to the designers.

It will be illegal to use one or two of the cycle cars which were shown at Olympia on the road, as they possess no reverse and are over the weight allowed without one.

There is no hiding the fact that many who a week or two ago had intended ordering sidecars at the Show were unsettled in their minds by the number of cycle cars. We encountered many such, who, however, were afraid to take the plunge and speculate in a cycle car, so they are waiting.

Old hands at the game freely expressed the opinion that some of the hurried examples of cycle cars will give their owners trouble before the touring season commences.

Mr. F. W. Barnes told us that there were two or three glaring copies of his patented Gradua gear, and he was commencing proceedings.

Despite the waverers who withheld their orders, sidecar makers experienced a large demand, and many are booked up for months ahead. Our statement last week that there will be a great many more sidecars on the road in 1913 will be fully borne out. It is far from being replaced by the cycle car, as some would have us believe. The low first cost and economical running expenses are bound to appeal to many for some time to come.

There were important meetings at Olympia practically every day.

Mr. W. E. Brough was in the best of spirits on Saturday, having taken over five hundred orders, though half that number represented his most sanguine expectations when the Show opened.

The Singer, as we predicted when first dealing with the cycle car in these columns, was a centre of attraction. Mr. Bullock, the works manager, told us that so many orders were taken that a special meeting was held to consider whether all could be executed in view of the work already in hand.

Norman Longfield, the one-time amateur rider of a Scott, has joined the Scott Engineering Co., and attended at the firm's stand at Olympia.

The Perry and Swift cycle cars were giving trial runs for the first time on the road, and were much admired.

In two cases—at least the prices of cycle cars were advanced on the opening day of the Show.

The number of true cycle cars in the Show could be counted on the fingers. The others are better termed miniature cars, though everyone will agree they are no worse for that—probably better at the present stage.

Another twelve months will do the runabout movement a great deal of good.

Clyno, Enfield, and A.J.S. sidecars will be difficult to obtain at once. All three firms have large contracts in hand.

The demonstration four-wheelers certainly scored last week. When it commenced to rain, up went the hood, and both passenger and driver were protected from the elements. This is a point that weighs considerably in the sidecar *versus* cycle car controversy, though, of course, one has to pay dearly for such an advantage.

The B.S.A. Co. will pursue an active competition programme in 1913, we understand, entering a team of riders in the more important events. F. W. Applebee is booked to ride a B.S.A. next year, including the Tourist Trophy Race. This event is the one the veteran rider is most looking forward

*The Motor Cycle* circulation last week, certified by our chartered accountant, was 83,081.

We notice that one firm has adopted the title "The Rolls Royce of Cycle Cars" for its new production. Strangely enough, this is just the type of machine some correspondents have declared they do not want. They may change their opinions before long.

The "amateur" question has been settled by a decision to classify competition riders as "novices" and "experts." Some years ago we suggested in a leaderette classifying riders as "maidens," "juniors," and "seniors," as in rowing. Mr. Loughborough, the A.C.U. secretary, must be given the credit for carrying the scheme through.

Trial runs were greatly appreciated. The engines of some of the cars were hardly stopped, for, as one stepped out, there was usually another ready to occupy the vacant seat.

The Motosacoche Co., who exhibited last week a new twin 750 c.c. engine, will shortly be marketing a Motosacoche sidecar machine with chain drive and two speeds to which the above engine will be fitted.

Presumably, as a reply to an article published in *The Daily Mail* of last Wednesday, which conveyed the impression that both three-wheeled and four-wheeled cycle cars were an absolute novelty, Auto-Carriers displayed a big sign on their stand on Thursday which read, "Alone in 1907, foremost ever since."

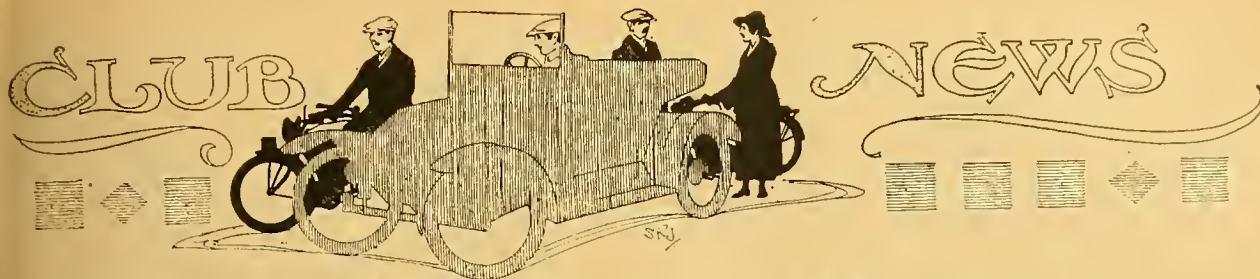
Once again so-called "stand to stand show reports" included machines not in the Show at all. *The Motor Cycle* report was, as usual, written in the Show, and supplies of the number were on sale at Olympia on Tuesday evening.

The A.C.U. did excellent business at its stand at Olympia. The three R.A.C. guides were never idle, and in the week enrolled over 250 new members and sold many of the handsome new badges, which can now be obtained for 3s. Secretary Loughborough moved his office from Pall Mall to Olympia for the whole week, and put in a very busy time with general work and numerous committees and conferences. The Prince's Rooms were much used and greatly appreciated.



Each day of last week at the Hammersmith road entrance to Olympia a busy and animated scene was presented. Here the cycle cars were awaiting visitors who desired trial trips. The runs were made around the adjacent roads and streets.



**Bury and District M.C.C.**

A meeting will be held at the Royal Hotel, Silver Street, Bury, this evening (Thursday) with the object of forming a club with the above title.

**Manchester Amateur M.C.C.**

The club dinner and distribution of prizes will be held at Ingham's Hotel, Chorlton Street, on December 12th at 7 p.m. followed by a smoker.

**Streatham and District M.C.C.**

The next three items on the winter programme are: Saturday, December 7th, club supper at headquarters, 8.15 p.m.; Friday, December 15th, there will be a discussion at headquarters on "Which will survive, the cyclecar or the sidecar?" at 8.30 p.m.; Friday, December 20th, there will be a lecture at headquarters at 8.15 p.m.

**The Cycle Car Club.**

The general meeting of the above club was held in the Pillar Hall, Olympia, on Friday evening last, and was attended by about forty-five persons. Mr. Glyn Rowden presided and explained to those present the aims and objects of the club. The business of the meeting consisted of adopting the rules, deciding to affiliate to the Auto-Cycle Union, and to get out a suitable badge. The first meet of the club will take place at The Hut, Wisley, at 1 p.m. on Saturday next, the 7th inst. Thirty-nine founder members were enrolled at Olympia.

**Mersey (Liverpool) M.C.**

This club had a most successful gathering on the 22nd ult. at headquarters, St. George's Restaurant, Redcross Street, Liverpool, about seventy members being present. At the conclusion of the dinner the report of the year's working was read by the hon. secretary, Mr. S. W. Carty, who stated that the membership of the club is now 130. Membership includes affiliation to the A.C.U. and association to the R.A.C., and to show that this was no empty honour, the Hon. Secretary mentioned that five members had received free legal assistance during the season, with the result that in three cases the charges were dismissed, and in the other two only nominal fines were imposed. Fifteen competitions took place, of which four were open trials, a record for any club. Officers for 1913 were elected as follows: President, Mr. F. Rees; captain, Mr. V. Horsman; hon. treasurer, Mr. F. Smith; hon. secretary, Mr. S. W. Carty. A proposal was brought forward to change the name of the club, and after considerable discussion it was agreed to alter it to Mersey (Liverpool) Motor Club. The evening was concluded by the prize distribution and a smoking concert.

**Sheffield and Hallamshire M.C.C.**

The annual dinner and prize distribution will take place at the King's Head Hotel this evening (the 5th inst.), at 7.30.

**Tyldesley and District M.C.C.**

It is proposed to form a motor cycling club in the district. Riders wishing to join are requested to be present at a hot-pot and smoker to be held at the Star and Garter Hotel, Tyldesley, on December 11th, at 7 p.m.

**Birmingham M.C.C.**

The annual Christmas reliability run, Birmingham to York and back, will be held on Saturday, December 26th, starting about 6 a.m. and finishing about 9 p.m. the same day. Full particulars are obtainable from the trials hon. secretary, Mr. S. C. Perryman, 67, Wood End Lane, Erdington, Birmingham.

**York County M.C.C.**

Speed trials were held on the 23rd ult. on a secluded road near Harrogate. The event was run on handicap, and results are as follows: 1. H. Waterman (6 h.p. Bat), gold medal; 2. J. C. Bennett Mitchell (Douglas), silver medal. Fastest time, J. A. Prendergast (3½ h.p. Ivy-Precision), silver medal. The annual dinner will be held at headquarters on the 13th inst.

**Cambs. M.C.C. v. C.U.M.C.C.**

On Thursday, November 21st, a reliability trial was held between the Cambridge University M.C.C. and the Cambridge M.C.C. The teams consisted of seven a side—five solo and two passenger machines. The result was a win for the Cambridge M.C.C. by the narrow margin of one mark. The route was as follows: Cambridge, Barton, Haslingfield, Barrington Hill, Orwell, Wimpole (check), along the Old North Road to Gamlingay via Croydon Hill (secret check), Potton, Biggleswade, Baldock (check), Ashwell Station Road (check), Royston, along the road to Newmarket (secret check two miles from Royston), turning through Whittlesford and Shelford, and home to Cambridge. The distance was fifty-nine and a half miles. Marks were deducted as follow: One mark for each half-minute early or late at check, ten marks each tyre stop, twenty marks each mechanical stop. The use of speedometers was prohibited, but watches were allowed. Specially good performances were made by the three Morgan runabouts (driven by C. W. Wilson, M. B. Stewart, and F. T. Cox), B. L. Peters (Rover), M. E. Wright (Scott), I. H. McClure (7 Indian), and P. V. Smith (Rover).

R. Holt (Singer) lost twenty marks through a skid, and H. V. Simpson (3½ Premier) failed on Croydon Hill.

**BRITISH SIDECARS IN CANADA.**

Toronto sidecarists who took part in the first organised sidecar run ever held in Canada. Naturally the procession caused considerable stir in the villages through which it passed. All the machines are British made—Triumph motor bicycles and Millard sidecars.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the "Editor, The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### Tyre Wear.

Sir,—“An Old Reader” asks for suggestions for obviating the wear on the bead of his tyre. I had constant trouble of that kind with one wheel till I discovered that the rim was faulty (the two grips were unequal) and got it replaced with a standard rim. Of course any rim that is allowed to get rusty will rot the bead. S

#### Wear of Big End Bearings.

Sir,—I should like to invite your readers' opinions upon the subject of the wear upon big end bearings. I have, of course, read with great interest your articles on this and kindred subjects, but an ounce of practical experience is worth a whole page of theory.

In my own case, I had the big end bearing of my motor cycle taken up last June, and have since done about 3,000 miles. On taking the cylinders down to remove carbon, I find the big end bearings again show considerable wear. This, in the face of being continually told that I was over-oiling, seems excessive.

I trust this will be of sufficient interest to induce other readers to give their experiences and opinions. N.H.

#### Evolution of Cycle Cars.

Sir,—With regard to your article on “Evolution of Cycle Cars” and the letter written by H. W. Bartleet in the last issue, I have by me at the present time a small Decauville which was bought about twelve years ago. I believe it took part in the London to Brighton event. It was fitted with a twin-cylinder air-cooled 5 h.p. engine and three-speed gear, with accommodation for three passengers, total weight about 5 cwt. This came well within the range of cycle cars. It is now going through the mill for a three-wheeled cycle car. I am fitting a De Dion engine with a two-speed gear, chain and belt drive, and water-cooling. I have cut away the whole of rear frame, lengthened the main chassis tubes, built up a back wheel on an old hub from a De Dion car, taking a 700×85 mm. tyre, two bucket seats fitted with Brooks springs; when completed I will send photographs of both. E. A. JOHNS.

#### A Show Grievance.

Sir,—I have one grievance to ventilate on the subject of the Show, which applies to the majority of stands I visited. I was only able to be there for a short three hours on Monday morning, and, only visited about twenty stands (accessories about ten). I was unable to get catalogues from more than one-third of these; in fact, I could mention one stand in particular, showing an accessory which will probably become the rage as regards lighting, where there was absolutely nothing done at eleven o'clock. At half-past twelve their articles were laid out, but there was nobody to tell one anything, nor was a printed leaflet of any description available. I do think, seeing that there must have been many people like myself—up for the week-end and only able to spend a couple of hours at the Show—that firms should have everything that might possibly be wanted ready to the tick of 10 a.m. E.C.

#### A Family Coach.

Sir,—Enclosed is a photograph of my 7 h.p. Bat and Phoenix sidecar. The machine has now run its fourth season, and I have travelled on it thousands of miles with my wife and child.

The sidecar, which is fitted with a Chater-Lea spring wheel, is the acme of comfort. Of the two I prefer the sidecar, but my wife likes the saddle best, and she thinks it delightful to sit over a big engine and to be able to make it do almost what she likes, while the spring-frame Bat causes no discomfort even to a lady rider.

I have the sidecar on the right-hand side because I can get at the clutch, carburetter, and belt, and I have also fitted a starting arrangement, which consists of an extended back axle nut on which slips a bicycle chain wheel and crank. At the other end is a free-wheel sprocket screwed on the end of the Millennium Fit-all gear. The two are connected by a bicycle chain of suitable length, and starting is quite an easy matter. The Fit-all gear has been in use three seasons.

The additional cross arm which is fixed to the handle-bars by means of clips extends to the front of the sidecar seat, and the control levers can be fixed on it when I want to drive solus from the sidecar seat, as I often do.

The Whittle belt of lin. section is the same as supplied when the machine was new, and it is protected by a patent leather shield (home-made) which runs round over the back tyre and along the underside from the bottom of the mud-



A 7 h.p. Bat and sidecar, illustrating the letter signed T. Enderby.

guard to the crank case. The cover on the front wheel is the original one. The back wheel, however, has demolished a host of tyres, but the substitution of a 2½ in. flat base rim (voiturette) and a 650 × 65 mm. Shamrock Excelsior combination cover, seems to have ended my troubles there, for after 1,400 miles running with full load all the time there is hardly any perceptible wear upon it.

Wishing good luck to *The Motor Cycle*, and thanking you for the energetic part you took in regard to the recent attempt to impose additional taxation upon us.

T. ENDERBY.



**The Transmission Question.**

Sir,—I have read with interest the letters appearing in your paper re wear of small twin engines and transmission. In April last, as I could not obtain another well-known 2½ twin at the moment, I was induced by the agent to take a 2½ two-speed Royal Enfield. I was suspicious of the chain drive at the time, having only owned a belt-driven machine previously, but since the month mentioned I have done between four and five thousand miles, and still have the original chains in use, and they do not yet show signs of wear. The engine has not required any new parts and no attention beyond valve grinding three times.

I have had four nails in the back tyre, which are my only stops. The original Dunlop covers are still in use, although the back one will soon require renewal.

I ride for business purposes all over the South of England (including Devonshire), and have never found any hill too stiff for my machine to tackle.

**CHAIN DRIVE CONVERT.**

Sir,—In your issue of the 21st ult. I notice that you make mention of the different forms of drive in the following order: Belt alone, chain alone, and then combined belt and chain. Now I am greatly puzzled to know why makers do not go in for the belt drive with under-geared pulley, especially for lightweights. The advantages of this device are: (1) Large belt pulley; (2) the pull of the belt is taken off the crankshaft bearing and is taken up on a bearing which can be made the full width of the engine if necessary; (3) the transmission wheels, which of course are on the side of the engine remote from the belt, are enclosed and run in oil, and practically require no special attention.

Now, while the combined drive gives a large belt pulley, still the introduction of the chain means the introduction of something else liable to go wrong—either to break, stretch, or get dirty if not enclosed. It also means, as a rule, a shorter belt drive, which is not an advantage.

I may say that my own mount is fitted with an under-geared pulley and is most satisfactory, and I consider the arrangement worthy of more general adoption, especially as the usual design of engine would seem to lend itself quite readily to the device, most engines having already some kind of geared shaft to actuate valves, etc.

**UNDER-GEARED.****The Wear of Small Engines.**

Sir,—I notice Mr. Claude Middleton in your issue of November 14th desires the experiences of riders of 1912 Douglas machines.

My Douglas was new at Whitsuntide and has since covered 3,900 miles (by speedometer) with only two involuntary stops. These were caused by a broken belt-fastener and exhaust valve rocker arm; both happened in the first 200 miles, and the broken parts were replaced free by the Colmore depot. In the case of the valve rocker, I did thirty miles quite comfortably on the front cylinder only. I have had no punctures, but as the back tyre began to go at the beads, it was replaced by a new one at the end of 1,800 miles, the makers allowing me half-price for the old one. The front tyre still has the centre row of studs, and the new tyre which I put on the back shows practically no signs of wear. Nothing on the machine beyond those points mentioned has required replacement, and I cannot detect any signs of wear in the engine; the compression is better now than when new. The original Lyso belt, beyond cracking across the grooves on top, looks almost as good as new. My total petrol consumption, including that used for cleaning and lost by evaporation, etc., works out at 125 miles per gallon. I beg to add the usual disclaimer.

E. P. LUCKING.

**Power for Sidecar Work.**

Sir,—I have been a regular reader of your excellent paper for many years, and this is the first time I have ventured to trespass upon your valuable space. My reason for so doing is to say a few words about my combination which may be of interest to your readers. A great deal has been said for and against the 3½ h.p. as a sidecar machine, and I do not think that the climbing of freak hills with a dozen passengers has helped in any way to convince the prospective and incredulous buyer.

I shall be classed as a "potterer," for I never care to average more than the speed limit, unless in open country

and pressed for time between services, which sometimes happens. My machine is a 3½ h.p. T.T. Triumph, N.S.U. two-speed gear, and a sidecar made by the Gosford Engineering Co., Coventry. I cannot, of course, relate such experiences as appear in the two letters of your issue of the 21st ult., for I do not wish to figure in the police court on the charge of cruelty to engines. I have driven a sidecar (wicker) for some years; but a few months ago you illustrated what seemed to me one of the soundest constructions of sidecar that I had seen, a patent of the above company. I wrote the firm, and they advised a coach-built body with hood and screen. After a thorough test I am more than satisfied with the combination: the machine does not appear to mind the weight, which is not excessive—just over 90 lbs.—owing to the light, yet exceptionally strong, chassis, which is of channel steel and in one piece. There are no brazed joints or weak points; the springs are full elliptic, like a car; indeed, it is a miniature car. In former years I have gone in fear of an accident on bad roads, but not now. I have not had to change down yet for any main road hill, my low gear being used only for corners and traffic, but the feeling of safety is to me the great factor, as good people are very scarce! The steering is very easy, owing, I think, to its semi-flexibility—universal joints—which prevents any jar and yet is sufficiently rigid to prevent sideslip. For lightness, comfort, ease of steering, and safety it will be hard to beat.

(Rev.) T.W.

**'Shape of Combustion Chamber.**

Sir,—I fear "Magneto" is not to be congratulated on the simple explanation of the main point of his recent article. He sets out to prove that the combustion chamber presenting the minimum surface—the spherical—may be efficient but is not suited to hill-climbing, but fails because he cannot distinguish between heat abstracted from the charge and heat dissipated from the cylinder walls. The combustion chamber with the greatest area plainly absorbs the most heat, which is quite different from dissipating it.

Supposing we take some figures to show the matter clearly. Two cylinders, say, have a combustion chamber surface of 200 and 400 sq. cm. respectively. Take the temperature of the gases on the firing stroke at 1,500°. Then the heat absorbed by the two cylinders will be in the ratio of 300,000 and 600,000 respectively; that is, the cylinder with the largest surface will hold twice the heat and will require twice the radiating surface if the temperature is to be equal.

If "Magneto" thinks a moment he must realise that the coolest cylinder is the one that presents the least surface to the charge and the greatest surface to the air. The spherical combustion chamber gives the former, and the latter is a question of radiating surfaces.

GEO. H. CUTBUSH, A.M.I.A.E.

**Proposed A.C.U. 1913 'Ten Days' Trials.**

Sir,—I see that it is suggested that these trials would be held next year at Kendal, and I would like to put forward one or two criticisms and suggestions thereon.

Holding a six or ten days' trial from one headquarters inevitably means that some of the days are employed in simply making up mileage over flat uninteresting roads that form no test of the machine, and are dreadfully monotonous to the rider: such days this year as the ride to Bournemouth and back and the return from Gloucester.

I would suggest that next year the trials should be held from several headquarters, having, say, two days in Devonshire, so as to include Porlock, Lynmouth, Beggar's Roost, and the best of the remaining hills; two days in North Wales, including Pen-y-bal and other notorious hills with unspellable names; two days in Cumberland, like the recent A.C.U. Quarterly Trial; and the remaining time essaying some of the Scottish pumplees. Hill-climbing is the only thing that breaks the monotony of those long rides, and such a trial as I have outlined would not only be saved from monotony, but would form a real test of the machines, and none but the very best would gain gold medals.

An additional advantage in spreading the trial over several districts is that it arouses interest among so many more people, and it would be less tax upon the local clubs in arranging and marking out the courses.

I do not agree with a recent writer to your paper that a thousand miles run over main roads forms a real test of a



machine. A machine that will not stand that is not worth looking at, but a machine that will stand such a strain as this year's Six Days, or the A.C.U. Quarterly, or the Liverpool One Day Trial is a machine to be relied upon, and you can be sure of getting value for your money.

I am afraid that increasing the trial to ten days will mean eliminating amateurs from the competition, as very few will be able to spare so much time, or if they could spare the time will not be able to afford the heavy cost. This might to a large extent be mitigated and amateurs encouraged by dividing the trial into two parts of five days each at a reduced entrance fee, awarding the usual medals to those successful in either of the five days and special prizes to those successful in the ten days.

I hope that the intending entrants, including some of the trade riders, will write and give their views on the trials and these suggestions.

DENARIUS.

### Silencers

Sir,—The L.G.B. have now issued their regulation prohibiting cut-outs on motor cycles after March 1st. The daily papers, in commenting upon it, congratulate the community on the fact that it will stop the practice of careering about with open exhausts, so dear to the hearts of certain young idiots. This is true, but it does not seem to me that it prohibits the standard cut-out as fixed to the majority of machines, which merely opens extra holes in the silencer. The noise made by a roadster single is very slight when throttled down, even with the so-called cut-out open, and if that is so, and the gases pass through a silencer, the regulation is complied with. This point is of considerable interest to the very large number of riders who will not be able to buy 1913 machines. My 1912 single, of very famous make, will not climb a gradient of 1 in 12 with the cut-out closed, but will fly up when it is open. What is to prevent me taking off the cut-out fitment and having the extra holes permanently open? I can then say I have no cut-out, and as the noise is very slight at 15 to 20 m.p.h. the police could not interfere.

H. C. WYLEY.

Sir,—In the commentary of "Red Wheels" on the compulsory silence question, may I point-out a few misstatements that have been made by him?

In the first instance, the noise made by the exhaust of the majority of motor cycles has become an intolerable nuisance both to the ordinary user of the roads and to people whose houses adjoin them. Whatever "Red Wheels" may say to the contrary, very few motor cyclists close the cut-out of their machines when driving in town or village; in fact, that is just the opportunity for the fraternity of the dropped handlebars and weird attire to distinguish themselves.

"Red Wheels" next asserts that "the motor cyclist must have efficiency," but may I remind him that efficiency and noise are not synonymous terms. Experiments have proved that the increase of horse-power developed by an engine with an open exhaust over one fitted with a good silencer is barely if at all perceptible.

The next statement of your contributor, "That the silencer of 1913 will be neither free nor silent, but just sufficiently silent to escape trouble with the police," is, I think, a rather unfortunate statement to make, as if he and others of similar views intend to exercise their ingenuity in discovering the limit of the forbearance of the local authorities, the foolishness of any such procedure is obvious. For if these motor cyclists get so perilously close to the edge of what is considered reasonable in districts where the police view the matter leniently, they will probably find themselves in trouble if they pass through places where the regulations are stringently enforced.

If we accept "Red Wheels's" concluding statement that "a silent machine constitutes itself a danger to the public," why close the cut-out in a town or village where it is most required and open it in the deserted country places? If a machine is such a menace to public safety that it is necessary to herald its approach with a noise like a gatling gun, then it has no right to be on the road at all.

I fail to see that the advent of the silent motor car has engendered an epidemic of accidents because of its silent running, and if the motor cycle is fitted with efficient brakes, and is driven with the consideration due to others, I cannot

believe that the new regulation will convert it into a modern Juggernaut.

I do not wish to defend the Local Government Board, but we must remember that it is the irresponsible members of our own ranks who have brought this draft into being. The public think the noise of motor cycle exhausts is excessive, and as we are such a small minority of the community surely the great majority have a right to place some restriction on what they consider a nuisance. Motor cyclists have been warned time and time again through your editorial columns that unless the noises were abated the Government would take the matter in hand, but little notice was taken of your timely advice.

I give "Red Wheels" every credit for his good intentions, but am afraid he displays more zeal than perspicacity in his handling of the subject, and must warn him that if he makes dogmatic assertions which he cannot support then his opinions degenerate to fatuity. Because others do not see eye to eye with us, it is rather unwise to presume they lack intelligence. I think it would be as well to avoid calling any further unpleasant attention upon ourselves by flouting the Government regulations.

I hope this will be a lesson to motor cyclists, and that in future the advice of *The Motor Cycle* will receive the respect due to its intimate acquaintance with the trend of things.

As regards "Red Wheels'" insinuation that at present manufacturers cannot make an efficient silencer, I will leave those manufacturers who claim silence and efficiency to defend their claim against that. The L.G.B. demand the silence, and for the other *dum spiro spero*.

L. J. AUSTIN.

[Expressions of opinion can hardly be characterised as mis-statements. The authorities already have full powers if they care to use them.—ED.]

### M.C.C. London-Exeter Run.

Sir,—With reference to the London-Exeter run, would it not be much fairer to put all lightweights into a separate class? Take the case of an amateur rider of a 2 h.p. machine over a course of, say, 200 miles. The set speed is 20 m.p.h., and his little machine is expected to adhere to this as closely as a big twin of four times its power.

I would suggest that in future winter trials lightweights be put into a separate class, with a set speed of 15 m.p.h., or, if lightweights and heavyweights are to be run under equal conditions, that an award should be given to every lightweight completing the course.

CECIL PEERS.

### The Care of Tyres.

Sir,—I have noticed a lot of comment in *The Motor Cycle* lately as to the wear of tyres on motor cycles, but I have looked in vain for any statement as to the care riders give to their tyres.

I have a rather heavy tricar with a compressed tread Rom cover on driving wheel, which has done over 1,000 miles, and the diagonal bars are only very slightly worn in the centre as yet, and it is otherwise unscratched, and I do not think it has had the pump used on it but once since it was put on, although the Dunlop inner tube is some years old.

After every two or three rides I wash the covers with a damp cloth and carefully look round for any small pieces of flint, etc., and if I find any extract them, and if the hole is large enough ram in a little tyre stopping. I think the life of the tyre is considerably prolonged by this practice, besides giving the wheels an improved appearance.

F. VALLIS.

### SUMMARY OF CORRESPONDENCE.

Will W. A. Hallsworth, designer of the hand-starting device for the four-cylinder F.N., kindly communicate with us as we have several enquiries waiting for him?

### NOTICE.

The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscript, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed for the purpose.



# THE INTERNATIONAL FEDERATION.

Luncheon at the R.A.C. and Conference at Olympia.

As announced in our last issue, the delegates representing France, Italy, Denmark, Holland, America, Canada, and England, met together in London last week, and on Thursday were received at the Royal Automobile Club by the Hon. Arthur Stanley, M.P., Mr. J. W. Orde (Secretary R.A.C.), Colonel H. C. L. Holden, R.A., F.R.S., Messrs. Robert Todd (Chairman), T. W. Loughborough (Secretary A.C.U.), Otto Thomas, G. F. Sharp, L. M. Meyrick-Jones, J. R. Nisbet, and E. M. P. Boileau (Chairman of the International and Relations Committee of the A.C.U.) Only one delegate (the Vice-president of the Danish M.C.) was absent, but Danish interests were ally represented by M. Mathiesen.

After the reception in the Great Hall of the R.A.C., the company adjourned to lunch in the private luncheon

The Chairman, speaking in French, then pointed out that such affairs must be discussed in French, and M. Tontlemonde bade adieu to Mr. Stanley and withdrew. Mr. R. toe Laer (Holland) then asked if anyone objected to the members of the A.C.F. representing France, which question the chairman put and no objection was offered.

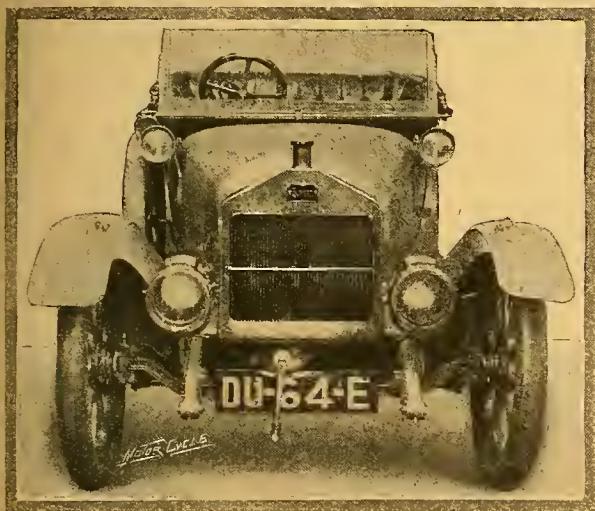
The meeting then proceeded to the election of delegates, and the following representatives of the different countries were duly elected: MM. E. Beukelar, Fagard, and Michaut, members of the Commission Mixte de du R.A.C. Belge (Belgium); Mr. W. H. Wells, the Canadian Motor Cyclists' Association (Canada) and the Federation of American Motor Cyclists (America); M. Mathiesen (Denmark); Messrs. E. M. P. Boileau, T. W. Loughborough, L. M. Meyrick-Jones, and G. F. Sharp (England); MM. Longuemare and Fenton, sen. (France); M. toe Laer, Dutch M.C.C. (Holland); and il Dottore Oreste Togni, Presidente del Moto Club d'Italia (Italy).

On the proposition of Mr. E. M. P. Boileau, seconded by Mr. R. toe Laer, the Marquis de Mouzilly St. Mars was elected patron of the International Federation; and, on the proposition of M. Longuemare, seconded by Mr. Wells, the Hon. Arthur Stanley, M.P., was elected president, while it was decided that each club should nominate its own vice-president in its own country.

Colonel Holden then made the following proposal, which was duly carried:

"That those representatives present who were members of the F.I.C.M. in the past should undertake to renew their support, and those delegates present who represented other countries should undertake to persuade the bodies which they represented to join the new Federation."

M. Longuemare then invited the delegates to meet in Paris on December 14th to discuss the rules.



Front view of the improved Singer cyclecar, from which it will be noticed that the radiator has been slightly enlarged.

room. The Hon. A. Stanley presided, M. Longuemare sitting on his right and the Dottore Togni (representing the Motor Club d'Italia) on his left. After luncheon the delegates were shown over the R.A.C., and were then conveyed in cars to Olympia, where, after a short interval, during which they viewed some of the exhibits, the party adjourned to the Pillar Hall, where the conference was held.

The Hon. Arthur Stanley, who was in the chair, welcomed those who had responded to the Auto Cycle Union's invitation. He said he ought to explain that the Federation was already in existence. It originally consisted of clubs representing France, Germany, Austria, and England. The three former clubs dissolved or resigned and England alone was left. He proposed that the Federation should be resuscitated in preference to founding a new body, as the latter procedure would involve the loss of the funds the surviving body still possessed.

There then ensued a brief discussion, which took place in French, between M. Tontlemonde, representing the newly-formed Federation of (Provincial) Motor Cycle Clubs in France, and Messieurs Fenton and Longuemare, representing the Competitions Committee of the Automobile Club of France.



Delegates from all parts of Europe at the Meeting of the International Federation of Motor Cycle Clubs. Our photograph was taken at Olympia where the delegates were entertained to tea. Reading from the left,—1st Row—(seated) Col. Holden, Messrs. Mathiesen, R. toe Laer, O. Guillot, Hon. Arthur Stanley, Messrs. G. Fenton Senr., G. Longuemare, and Robert Todd.—2nd Row—Messrs. J. R. Nisbet, S. T. Tessier, J. W. Orde, W. Pratt, G. F. Sharp, A. Michaut, Dr. O. Togni, T. W. Loughborough, W. H. Wells, L. M. Meyrick-Jones.—3rd Row—E. M. P. Boileau, G. Fenton, Jur., Otto Thomas, G. Sweerts,—Neher, H. Fagard.



## ROAD ACCIDENTS.

A SECTION of the daily press is constantly publishing articles intended to stir up interest in road accidents of all kinds, among which motor cycle and motor car accidents are not the least prominent. It is really difficult to see what advantage is gained by giving these unfortunate accidents so much publicity. The amount of road traffic, motor and otherwise, is now enormous, and human nature being what it is, some accidents are bound to occur.

We do not for a moment pretend that many of the accidents could not be avoided by care on the part of the driver, but in nine cases out of ten the cause of an accident might quite well be through carelessness on the part of a pedestrian, cyclist, horse driver, or the driver of any other vehicle. It usually takes two to cause an accident, and it appears that those who report these unfortunate incidents seem to lose sight of this fact altogether. Times out of number a man gets run down by a motor cycle simply because he suddenly steps off the pavement without looking where he is going, and then the accident, but not the real cause of it, is given the fullest publicity in the daily and evening papers. By this means the man in the street is badly scared, local magistrates become panic stricken, and persecution of motorists which is totally undeserved is bound to follow. In cases where negligence is proved the authorities are often not half

strict enough, but instead they wreak their vengeance in a totally unfair way by setting traps and catching the first individual who exceeds the limit, irrespective of there being any traffic on the road or not.

We know that carelessness on the part of some motor cyclists does exist; and we urge most strongly that the greatest care should be exercised at all dangerous points. Motor cyclists, particularly in London and other large cities, cannot be too careful. Now that change-speed machines have become general, a low gear should be always used at dangerous corners and cross-roads, which in many cases should be taken at an absolute crawl. All classes of vehicles, taxicabs particularly, turn out of street corners where least expected, and against one of these heavier vehicles a motor cycle stands a very poor chance. No less care should be taken at dangerous spots on open country roads, not only on account of oneself and one's own machine, but also for the sake of others.

While on this subject we should like to urge on all motor car drivers, amateur and professional, the importance of giving sidecarists as much room as possible. A sidecar is a pleasant vehicle to drive, except on heavily cambered roads; if the sidecarist be "bored" to the side, the sidecar wheel may hit the grass edging, when it is much more easily overturned than a four-wheeled vehicle of heavier construction.

## An Official Long Distance Sidecar Ride.

DURING the Show we had a talk with J. T. Gibbon, who recently accomplished the first A.C.U. observed trial on a  $3\frac{1}{2}$  h.p. motor cycle and sidecar. As announced in our last week's issue Gibbon started on Wednesday, November 20th, on a  $3\frac{1}{2}$  h.p. Alldays and sidecar, from the General Post Office, at 12.40 a.m., and proceeded to Great Yarmouth *via* Chelmsford, Colchester, Ipswich, and Lowestoft, and back *via* Norwich and Newmarket. Beyond lamp troubles the journey was covered without incident, and after covering 260 miles on the first day, he took a short rest and restarted at 7.30 a.m. The second day was covered without trouble. On the third day, which he started at 11 a.m., he had an excellent run to Yarmouth. But after reaching Norwich he experienced gear trouble, which, together with further lamp troubles, caused a serious delay, and were such as to prevent him obtaining any more sleep until the six days had expired. He duly arrived in London at 2 a.m. On the fourth day he started at 6 p.m., and shortly after he had to pull up so sharply at Stratford, when a motor omnibus turned round suddenly in front of him, that he pulled the back tyre off the rim. Owing to the appalling condition of the roads the machine was completely clogged with mud. Troubles were not done with, and at Brentwood the gear control quadrant broke and took ten hours to repair. Thereafter there ensued a good run to Yarmouth, but near that town the gear control rod stripped its thread and he drove on second speed into Norwich, where he arrived at 2.30 p.m.

### A new use for Sandwiches.

After effecting repairs he started at six o'clock the next morning. These repairs included straightening the spindle, filing the bronze discs in the clutch, and repairing or refitting control rod collar and clutch nipple. Four miles from the garage, after the restart, the clutch began slipping owing to the severe head wind and heavy roads. Near Newmarket Gibbon had again to stop, and took out the back wheel and adjusted the clutch in one hour. During the ride the roads were appalling, and although he wore two suits of overalls on more than one occasion he was completely wet through. The run was started with plenty of food on board, but the first night when Gibbon and the

observer felt the pangs of hunger it was found that the latter had been using the sandwiches as a footstool. Altogether in the six days during which he was running 1,076 miles were covered, and Gibbon only obtained fifteen hours' sleep.

We may mention that the gear, though of well-known make, was an old pattern. Only one adjustment was made to the engine, namely, the replacement of an exhaust valve.



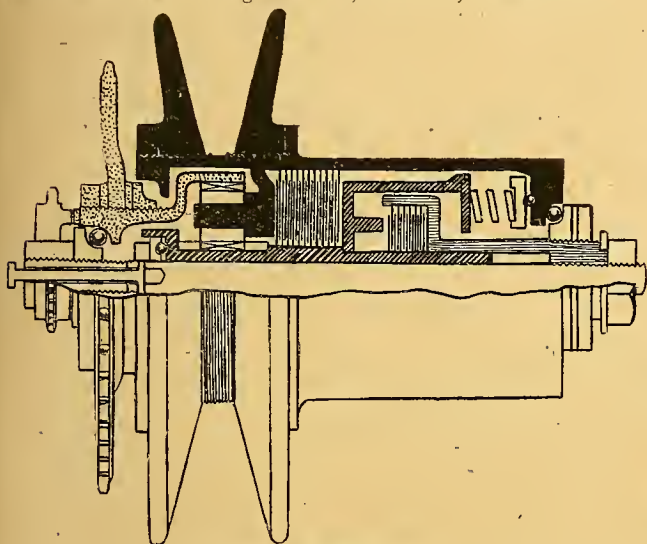
J. T. Gibbon's ( $3\frac{1}{2}$  h.p. Alldays and sidecar.) This rider has lately accomplished an officially observed six days' ride. The machine just as it finished the ride was on the Alldays' stand.



# THE ALBION TWO-SPEED GEAR.

A Revolving Counter-shaft Gear giving a 40 % Reduction. Free Engine and Kick Starter included.

ONE of the neatest motor cycle gears which we have ever seen is the Albion two-speed counter-shaft gear, which Messrs. Harris and Sons, Ltd., of Upper Highgate Street, Birmingham, have just introduced. Originally intended for adaptation to low-powered light-weights, the gear has under test shown itself more than capable of doing all the work imposed upon it by a  $3\frac{1}{2}$  h.p. single-cylinder and sidecar. The gear has the important characteristic that it has no permanently fixed gear box, but instead the whole affair revolves in almost exactly the same manner as a hub gear. This, of course, constitutes a



Part section of the Albion gear.

very great advantage on ordinary counter-shaft gears, because in the Albion directly the top gear is engaged there are no gear wheels revolving, and the entire gear is running just as if it were a solid counter-shaft. Consequently there is the least possible loss of power. Further important points are the weight, namely, 7 lbs., which makes it probably the lightest two-speed gear on the market, and the price, which is so reasonable that anyone who can afford to motor cycle at all is well catered for.

## Belt and Chain Drive.

The *modus operandi* of the gear will be clear from the accompanying description and diagrammatic half-section. The engine drives through a short chain a large sprocket on the left-hand side of the device, and in order to avoid any possibility of confusion this sprocket and the part to which it is permanently fixed is shaded with a number of

dots. The sprocket is screwed on to a belled ring, the end of which is cut to form an internally toothed pinion. This meshes with a pinion, or rather a series of four planetary pinions (left unshaded), which are free to revolve on spindles supported by a second ring (shown black), which forms part and parcel of the gearshaft and the belt pulley flanges which are screwed on to it. The planet pinions also mesh with a sun pinion which is integral with a long hollow sleeve (shaded diagonally), which is provided with two squared portions adapted to carry the alternate plates of two quite distinct and independent multiple disc clutches. At the right-hand side of the gear is a bell-shaped body which is rigidly attached to the fixed spindle upon which the whole rotates. The function of the two clutches is to connect the sun pinion either to the outer shell or to the fixed spindle. In the latter case it will be seen that rotation of the chain sprocket causes the planet pinions to walk round the fixed sun pinion and carry their pin-spindles and the belt pulley with them; this gives a gear reduction of 40%. The low gear is put in by pushing the small plunger at the left-hand end of the spindle to the right. This forces the diagonally shaded cup against the plates of the right-hand clutch, and locks it accordingly to the hub spindle so that the sun pinion is held stationary.

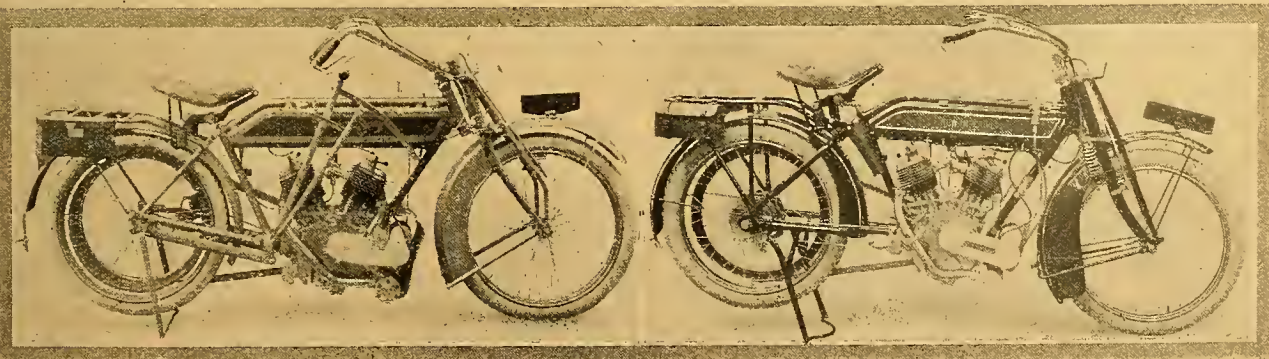
## The Free Engine.

Free engine is obtained by sliding the small plunger slightly to the left and so disengaging the clutch. Top gear is actuated by a further movement in the same direction. This brings the diagonally shaded bell piece against the larger right hand clutch which engages with the clutch plates fixed to the black portion in the diagram. The whole gear is now locked up and runs solid. For sliding the plunger, which it will be observed works with a small ball bearing thrust collar, a quick thread thimble is used, whilst a double ended position pedal is used for the control of the gears. The larger size and number of the ball bearings upon which the Albion counter-shaft gear runs is clearly shown in the drawing, and is certainly notable.

## The Advantage of Correct Alignment of the Belt.

One of the great advantages of the gear will require no pointing out to the initiated, namely, that since both belt pulley flanges are screwed and held in position by lock nuts, the belt drive gear can easily be altered, and at the same time the belt line perfectly adjusted for alignment—a most important point if belt life is considered worthy of attention.

To make the gear quite complete a kick-starter is embodied and is arranged at the left hand end of the spindle. It is of the free-wheel type, in which the undercut teeth of the ratchet upon the starting chain sprocket are forced into engagement with the similar teeth upon the main engine chain sprocket by a small position cam which comes into action immediately the starting pedal is pushed down.



8 h.p. Matchless, with Gradua gear.

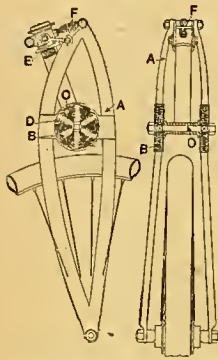
TWO OLYMPIA SHOW MODELS.

New Imperial twin-cylinder two-speed machine.



### A Spring Fork.

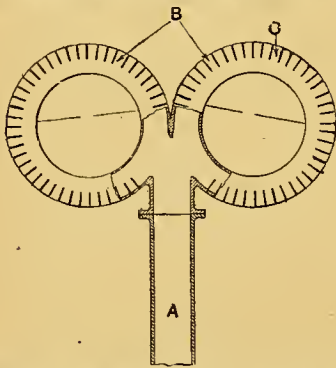
This fork has a compound action, enabling it to yield to shocks, both vertical and longitudinal. The fork girders A have built into them on either side a



modified form is described, in which blocks of rubber take the place of the springs C.—J. R. Hannam, No. 27, 1912.

### Silencing the Exhaust.

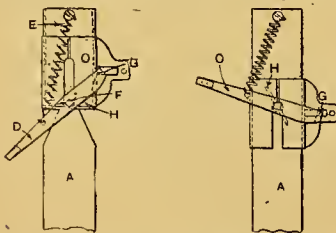
The exhaust gases pass along the pipe A into a chamber B of double ring formation giving a circulating motion to the



gases. The rings B are provided with slots C through which the gases escape.—H. Clarke, No. 12,647, 1912.

### An Exhaust Whistle.

In this device the pipe A is provided with a whistle orifice B, over which slides a sleeve C movable by a lever D against the action of a spring E. The lever D is pivoted at F, and engages the sleeve at G. Also upon the pivot F is a throttle disc H, which moves with the sleeve and partially closes the pipe A, deflecting the exhaust

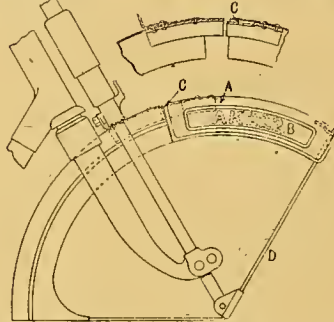


gases on to the whistle orifices in the desired manner. The illustrations show the whistle in the open and closed positions respectively.—H. H. Lanman, No. 12,395, 1911.



### Front Mudguards.

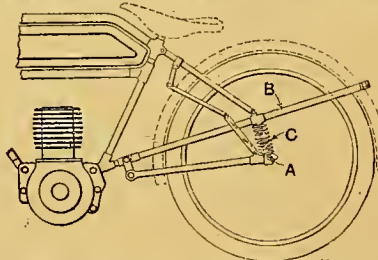
The forward part A of the front mudguard has side pieces B which act as number plates. The portion A is easily



detachable, being provided with a box joint C as illustrated at the rear end and being held at the front by a spring stay D.—A. A. Scott, No. 22,695, 1911.

### Rear Springing.

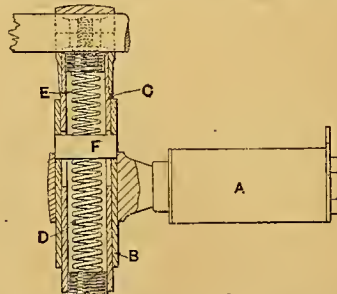
The drawing illustrates the link system employed. It will be seen that the rear wheel spindle A is carried at the rearmost



point of the links, the weight of the main frame B being taken by the springs C.—L. Chambers, No. 27,980, 1911.

### Spring Footrests.

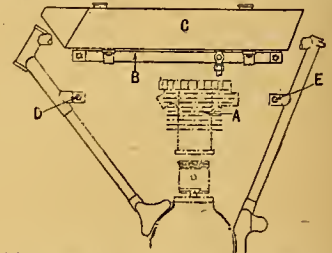
Each rest A is carried by a tube B surrounding a second tube C secured to the frame. Within the tube C are springs D and E, D normally taking the weight



and E taking the recoil. An abutment F carried by the tube B engages the springs D, E and prevents the rest A from twisting around the tube C.—S. J. Heaney, No. 4,980, 1912.

### A Frame Improvement.

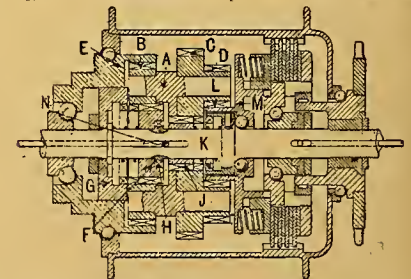
To facilitate removal of the cylinder A, the lower horizontal frame member B which carries the tank C is made detachable. The tube is provided at either end with lugs of half circular form, engaging corresponding lugs D, E to which they are secured by bolts. By removal



of this tube and the tank carried by it, a clear space is left, enabling the cylinder to be lifted vertically clear of the piston.—C. T. B. Sangster, No. 25,566, 1911.

### A Three-speed Hub.

In this hub the high gear is direct, two reductions being provided through gear trains. The pinion carrier A carries three sets of pinions B, C, D. The pinions B engage on the one hand an annulus E, which carries the driving member of the hub, such as a pulley or chain sprocket, and on the other hand a sun pinion F, which can be slid to engage either a rotatable clutch member G, which engages with the annulus E, or fixed clutch dogs H on the wheel spindle. The pinion C engages a sun pinion J, which can be slid so as also to engage either teeth on the carrier A or another clutch member K fixed to the spindle, whilst the pinion D engages a further sun pinion L, carried by one member of a plate clutch device,



which operates in the usual manner to transmit the drive to the hub shell. The operation of the gear is effected through a sliding rod and key N, and for the direct drive the sun pinion F engages the rotatable clutch member G, and the pinion J engages the carrier A. Thus the mechanism rotates solid. For the first reduction the sun pinion F is moved to engage the fixed clutch H, being thus held stationary. The sun pinion J is still in engagement with the carrier A, so that the reduction is through one train of gears. For the low gear the pinion J is moved to engage the clutch K, and disengage the carrier A. The sun pinion F is still in engagement with the clutch H, so that both sun pinions are anchored, and all the pinions B, C, D free on their carrier. Consequently, a reduced drive through both gear trains is transmitted to the sun pinion L, plate clutch M, and hub shell.—A. H. Reilly, No. 28,925, 1911.





## SILENCER TOPICS.

THE recent outcry concerning the noise of motor cycles and the promised Local Government Board regulation will eventually lead to the really silent machine if rigorously observed. The causes which have made this step necessary are various. I think, in a measure, the T.T. races have had some influence. The T.T. races seem to have a bad effect on some of the younger and more foolish riders; they cannot ride in the races themselves, but must needs ride machines of the racing type which are supposed to give the general public impressions of untold power and speed, and make them admire and worship, in a manner only found in comic opera, the bravery and dare-devilry of the heroes who bestride them. I believe this rowdy section of the motor cycling world has been labelled the "K-nut," and in some mysterious manner the word at once describes the breed. The particular feature of the K-nasty K-nut seems to be an inordinate love for a K-noisy machine; it always opens its cut-out if going through a busy city thoroughfare. Even as I write one goes by riding a twin, very noisy, and not in very good tune. This, I may say, is another peculiarity; it cannot keep an engine in tune for—I was almost going to say knuts. These gentlemen (?) are indirectly those whom we have to thank for the recent outcry, I think.

### Silencer Construction.

The question arises, are manufacturers on the right track as they at present construct silencers? It is hard to say. The general rule is to follow car practice, but are there many really silent cars on the road to-day? The big four and six-cylinder cars are the quietest, but their quietness is nothing like silence—it is a continuity of noise which gives us the impression of comparative quietness. Notice one of these cars when it is misfiring. It is not often one hears such a thing, but perhaps a friendly car owner will short-circuit a plug or two if very nicely asked. If he will so oblige he will probably be very much surprised himself at the noise his pet engine is capable of. The noise is no greater than when running properly—rather less—but, being intermittent, it is much more apparent to the human ear. Consider also the small one and two cylinder cars; they are not so quiet as their bigger brothers. This is not a theory of my own, but is now generally recognised by those who have studied the problem. The degree of quietness already reached on large cars is quite satisfactory—I have never heard one grumbled at yet—but to reach thus far on the motor cycle is going to take some doing, with present methods at any rate. Having as a rule only one cylinder, the problem is correspondingly difficult, and we are also restricted as to the size of the silencer. A car, however small, has plenty of room for a very large silencer or series of silencers,

and it is in this manner that the problem has been treated in the car. Also on the car there is much more chance for the exhaust gases to cool down before discharging into the atmosphere, and it is the degree of cooling obtained that gives us the silence. Turning our attention more particularly to motor cycles, let us glance at some of the quietest machines we have on the road to-day.

### Some Silent Machines.

Very few singles are anything like quiet, but some of the  $3\frac{1}{2}$  h.p. Humbers and Rovers run as quietly as any I know. If we look at them, we find that a large silencer is used for the size of the engine compared with other  $3\frac{1}{2}$  h.p. single cylinders. Of the twins, the Clyno could travel far before it met a quieter machine than itself, and here again is car practice, a fairly large silencer and a pipe leading aft, with the result that the exhaust is very cool when it leaves the pipe. Of the lightweighters, we must give the Enfield the palm. It is always a source of wonder to me how such a tiny silencer can do so well. A machine which I must mention is the Scott; with its two two-stroke cylinders we get quite the effect of a four-cylinder car, and it is wonderfully quiet. The same is true of the four-cylinder F.N.

### The Principle of Expansion.

One principle which I should not be surprised to see partly adopted is this: when a gas under pressure is allowed to expand suddenly through a small orifice, a very rapid reduction in temperature takes place. This action is accumulative; that is to say, if the gases so cooled are allowed to escape round the outside of the pipe or vessel containing the hot gases, these hot gases are cooled a little, and the issuing gas becomes a little cooler still, and so it goes on, the issuing gas getting cooler and cooler. This principle is used commercially in the production of liquid air, and, as I have said, I should not be very surprised to hear of experiments being made in this direction. The difficulty will be, of course, to apply the principle without causing back pressure, and I confess I do not see how it could be done in its entirety, although it may be, and I think will be, partly used. If only the principle could be carried out as it stands! What a vista such a proposition opens up! Higher compression and hence greater efficiency, and yet no overheating and conking. No burnt valves, and yet perhaps we might have trouble in this direction, as the gases would be got rid of earlier, and therefore while hotter, but probably an auxiliary valve or extra cylinder ports would overcome the difficulty. All this, of course, is only conjecture, but the principle I have mentioned is sound, and has stood the test of commercial use. Perhaps my conjecture may be old and stale in a few months. Who knows?

A.G.D.C.



### Indian Expert in London.

Mr. Charles Gustafson, sen., chief of the experimental department of the Hendee Manufacturing Co., visited Olympia last week. He will also visit his Swedish home at a later date.

### A Successful Year.

The seventeenth annual report and accounts of the Self-sealing Rubber Co., Ltd., for the year ended August 31st last shows a total nett profit of £2,329 10s. 7d. A dividend of 10% and a bonus of 2½% free of income tax is recommended by the directors.

### Presentation to a Designer.

Mr. Cecil T. Bayliss, son of the director of the Perry Motor Co., Ltd., Tyseley, Birmingham, has been presented by Mr. J. Martyn Smith (the chairman) with a gold chronometer bearing the following inscription: "From the chairman of the Perry Motor Co., Ltd. (Mr. J. Martyn Smith), to Cecil T. Bayliss, age 20, the designer of the Perry motor car, November 25th, 1912." The chassis exhibited at the Show reflects the greatest credit on so youthful an engineer.

### J.A.P. Successes in 1912.

We have received from Messrs. J. A. Prestwich and Co. a list detailing the successes gained on J.A.P. motors during 1912. So numerous have been the successes of machines fitted with this engine that the booklet contains no fewer than fifty pages. From the summary of awards we observe that 259 firsts have been gained, 162 seconds, and 82 thirds. Surely this is an easy record!

### Insurance.

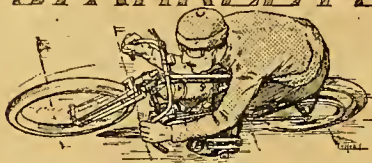
We have received particulars of the new A.C.U. unlimited policy for motor cyclists, which includes touring membership of the A.C.U. The premiums are now based on horse-power only, and run from £2 5s. for a machine not exceeding 3 h.p. to £3 10s. for a machine not exceeding 8 h.p. The premiums quoted here cover all indemnities, including sidecar. Cyclecars can be insured by payment of 50% extra of the premium charged for motor cycles; 25% extra is charged if the machine be used for business purposes. Continental risks can be covered by payment of an extra 25%, provided the insured pays the first £0s. of any claim arising on the Continent.

### Catalogues Received.

We are in receipt of the latest catalogues of Messrs. Chater-Lea, Ltd., 74 84, Banner Street (Golden Lane), E.C. Of these, one refers to the Chater-Lea cyclecar. The other catalogue is that of the Chater-Lea No. 7 sidecar combination, which is so well-known that only a passing reference is needed. The catalogue is well got up and deals in detail with this interesting machine.

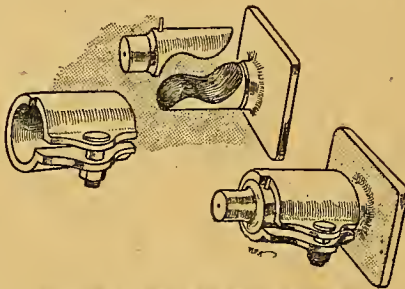
Harrods, Ltd., Brompton Road, S.W., have published a most interesting catalogue of cyclecars for 1913. In this particular catalogue no fewer than seventeen different machines are described and illustrated. The details and information given are the fullest possible. Anyone anticipating the purchase of a passenger motor cycle vehicle should make a point of studying this catalogue.

## SPARKLETS



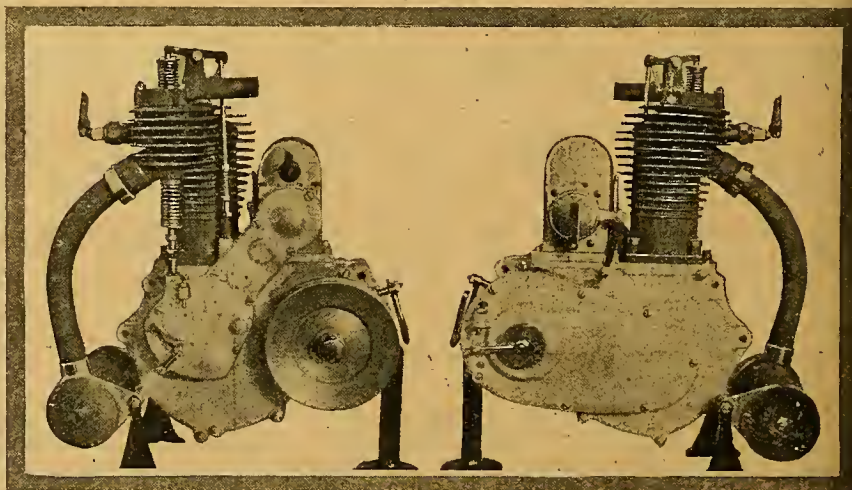
Readers who are interested in carburation should not fail to obtain the latest booklet of the Senspray carburetter, issued by C. H. Pugh, Ltd., Whitworth Works, Birmingham. This is an excellently got up booklet, describing the action of the Senspray principle. It is illustrated with sectional, line, and half-tone illustrations.

"Rudge Motor Bicycles" is the title of the 1913 Rudge-Whitworth motor cycle catalogue. This contains illustrations and specifications of the complete machines, a list of 1912 successes, also particulars and illustrations of some of the constructional details of the Rudge



New design quickly detachable sidecar clips.

engine, multi gear and other parts. A page is devoted to handle-bar patterns. The handle-bars are shown in plan and elevation, so that when specifying a machine a handlebar can be ordered to suit any particular requirements. Spare parts are illustrated by line sketches, each part having price and specification number under it. There are also several pages devoted to moderately priced accessories suitable for these machines.



Valve side of the new 2½ h.p. single-cylinder Villiers engine and change-speed gear, showing timing gear which is on the left hand.

The catalogue of the Connaught two stroke motor cycle has just reached us. The machine is made by the Bordesley Eng. Co., Ltd., New Bond Street, Birmingham. The machine created quite a favourable impression at the Show, and those who failed to obtain a catalogue there will be able to do so if they write to the firm direct.

### Business Announcement.

A report of the annual meeting of the Armstrong Three Speed Gear Co., Ltd., has just reached us. The 1912 profits will produce a dividend of twelve and a half per cent. on the ordinary shares, and sufficient has been carried forward to pay a further dividend of ten per cent. and to write off debit balance from the previous year in addition to providing for all charges and current expenses. The capacity of the works is 15,000 motor cycle hub gears per annum.

B. Alan Hill advises us that he will not after all be connected with the firm of Parsons and Hill, Romford, but will carry on business on his own account at the Woodford Wells Motor Works, Essex.

### Cyclecars.

A firm which has been making steady progress in the building of cyclecars is A. W. Wall, Ltd., Hay Mills, Birmingham. This firm has found markets for its machines in several foreign countries and the colonies. The Wall tri-carriage is fitted with a sociable two-seated body, and was on view at the Show. Incidentally, the increased output has justified the firm in marketing its 1913 models at somewhat lower prices, a policy which cannot fail further to increase their popularity.

### Shameful Treatment.

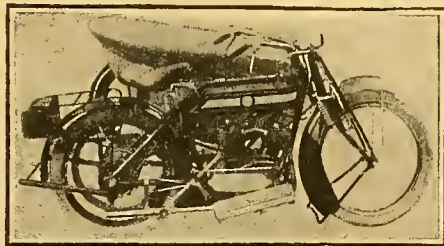
Can readers wonder that garage proprietors and others are not always ready to open at unearthly hours in the morning to supply petrol? F. E. Bailey, of 22a, Stanstead Road, Forest Hill, S.E., informs us that a person rang him up at 1.30 a.m. on the 22nd ult. and asked for petrol, and explained the tank had run dry fifty yards away from the shop. He was given two gallons with which to replenish and said he would return, but neither rider nor can was seen again by Mr. Bailey.





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¶ The 1913 preliminary catalogue fully describing the many improvements and refinements on the new models is now ready, may we send you a copy?

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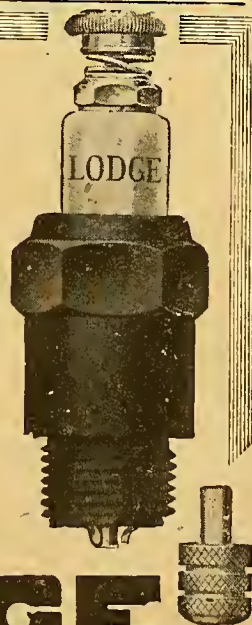
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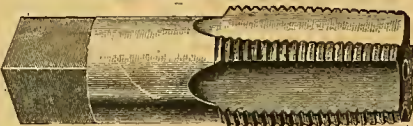
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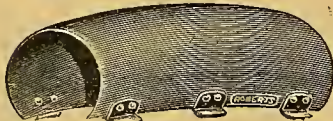
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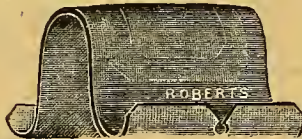
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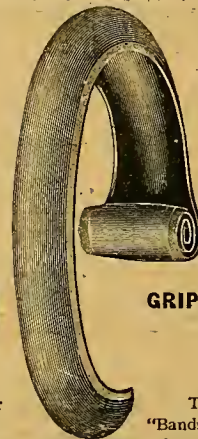
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Made on the same principle as our  
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Can be used in Cover after Cover  
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10/6 each.ALFRED ROBERTS  
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## Acetylene Burner for Headlights

Gives, from a single gasway only, an  
atmospheric flat flame which cannot become  
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The Burner is of the air-injecting type—it will  
not carbonise.

It is now fitted with a Pressure Check, which  
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Send for descriptive booklet of the "Bray" Burner to

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## BEACON OILSKINS

keep you dry anywhere—always.

No clumsiness—no stickiness. See the smart practical look of the  
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Yellow. 17/6. Tan or Grey-green. 17/3. Le gings. Black or  
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Only Way," our new Beacon Catalogue. Send for it now . . . .  
before you get wet again

BARBOUR'S, The Store for Wet Weather Wear SO. SHIELDS.  
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# SELFRIDGE'S

Will supply the Motor Cyclist with all his Accessories at the lowest possible prices. Good quality always.

Write for Is the "Agros" Motor Cycle Suit in your Outfit?

Suits sent on approval

The "Agros" Motor Cycle Suit (as illustrated) is made from our well-known "Agrosette" cloth, and is porous yet waterproof.

No rubber is used in the manufacture of this suit. It is made easy fitting, and the wearer is doubly protected from cold winds, etc., by having a large underflap neatly arranged in front of jacket. This underflap is invisible. The jacket is lined with warm fleece and is of an extra length to give good protection on the saddle.

This Overall is not seatless, but made on the principle of trousers, here again giving extra protection on the saddle.

It is made with inverted pleats at the sides, has strong leather straps to fasten under the boots, and is finished with a belt round the waist.

It is an admirable suit, and much in demand by Motor Cyclists.

All sizes, 75/-

A Cheaper quality Weatherproof, 60/-

SELFRIDGE & CO., LTD., OXFORD STREET, W.

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This Cap is exceedingly suitable for the Motor Cyclist, inasmuch as it can be worn either as an ordinary cap, or as shown in the illustration.

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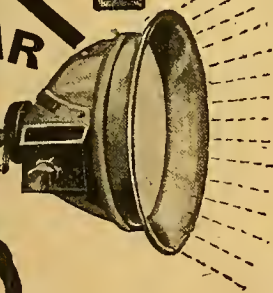
We invite you to call and inspect our representative stock of Motor Cycles and choose yours. In the majority of makes we charge only 2½% on the balance after deposit has been paid.

As we are now booking orders for the 1913 season, you will benefit by making early application.

MOTOR CYCLE  
SIDE CAR  
LAMP

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Complete Outfit, comprising Lantern Flexible Conducting Cord, Metal Filament Bulb Switch, 5½-volt Giant Volex Battery, ready for use. Can be fitted in a few minutes.

PRICE £1 1 0.

Full particulars of useful Electric Accessories for the Motor Cycle. See our M. & E. Catalogue on application.

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**1913**  
**Literature**  
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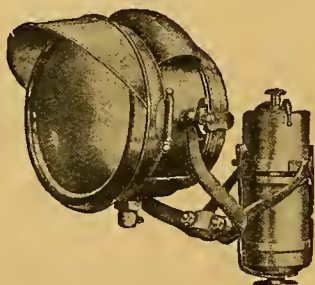
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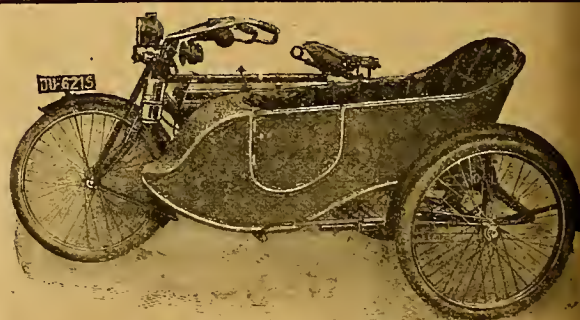
**SPECIAL AGENTS** { Service Co., High Holborn, W.C.  
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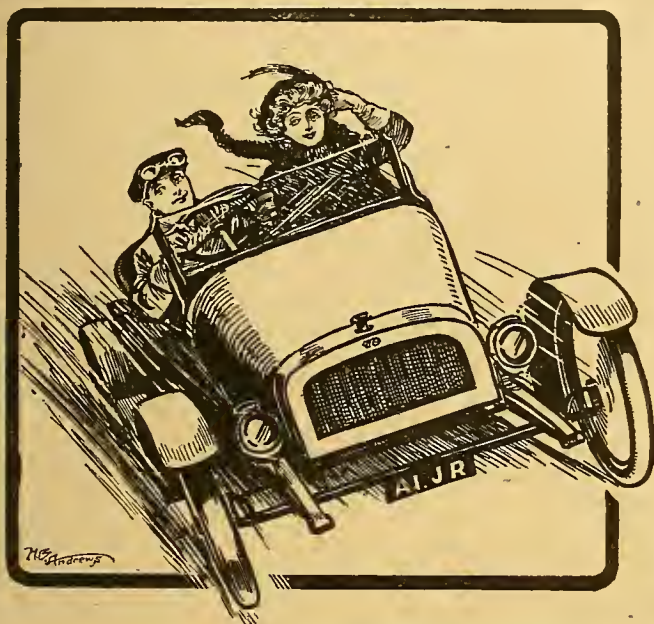
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**DON'T SPOIL  
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by giving a ride in  
an unreliable ~ ~  
**CYCLECAR**

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**"CROUCH"  
or "WALL" at  
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## ABRIDGED SPECIFICATIONS.

### CROUCH.

8-10 h.p. Twin-cylinder, water-cooled, ENGINE	.. .. .	4½-5 h.p. single-cylinder air-cooled.
80 x 90 mm.		
Drip feed and hand pump	.. .. .	LUBRICATION .. .. Hand pump.
Eisemann H.T. magneto	.. .. .	IGNITION .. .. Bosch H.T. magneto.
Amac or B. & B.	.. .. .	CARBURETTER .. .. Amac.
2½ gallons	.. .. .	PETROL CAPACITY 2½ gallons.
One short chain through differential	.. .. .	TRANSMISSION .. .. Cardan shaft through differential.
3-speed (direct on top) and reverse	.. .. .	GEARS .. .. 2-speed epicyclic.
14in. wheel and Ackermann	.. .. .	STEERING .. .. Spring Tiller.
Usual car type of elliptic	.. .. .	SPRINGS .. .. Special Cee.
Foot and hand, internal expanding	.. .. .	BRAKES .. .. Foot and hand.
Armoured ash	.. .. .	CHASSIS .. .. Large tubular.
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650 x 65 mm. car	.. .. .	TYRES .. .. 26 x 2½.
Best coach built	.. .. .	BODY .. .. Best coach built.
Four to forty m.p.h.	.. .. .	SPEED .. .. Four to forty-five m.p.h.
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ADVERTISEMENTS in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

### SECTION II.

York and Lancashire.

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

### SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembrokeshire.

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

### SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

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FOR SATISFACTORY  
MACHINES AT  
SATISFACTORY  
PRICES



CANNOT BE  
BEATEN.

Whether you are looking for the latest and best Models of the most famous Motor Cycles, the smartest introductions in Sidecars of the newest patterns for the 1913 Season, or some of the most interesting Cyclecars which were such an attractive feature of the Olympia Show

YOU CAN GET THEM  
ALL AT WAUCHOPE'S.

If you want 1912 Models, new or second-hand, or only slightly used, and in practically new condition, at most advantageous prices in the trade

YOU CAN GET THEM  
ALL AT WAUCHOPE'S.

Or should you be looking for a second-hand Motor Bicycle, thoroughly sound and satisfactory in every detail, overhauled, renovated, and repaired, ready for the road, just make up your mind as to the particular manufacture you would prefer, and call and make your selection, for

YOU CAN GET THEM  
ALL AT WAUCHOPE'S.

We hold the largest stock of Motor Cycles, Sidecars and Cyclecars in the Trade, comprising an immense variety of 1913, 1912, and new and second-hand machines of every make, all in the most satisfactory condition guaranteed, and certain to give satisfactory service. All machines offered at prices that cannot be beaten for value—the most satisfactory bargains in the trade.

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**WAUCHOPE'S**  
9, Shoe Lane Fleet Street,  
LONDON, E.C.

'Phone: Holborn 5777.  
Wires: "Opifcer, London."

## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" C. When this is desired, 2d. will be charged for registration and three stamped and addressed envelopes must be provided for forwarding replies. Only the number will appear on the advertisement. Replies should be addressed, "000, c/o 'The Motor Cycle,' Coventry"; or if "Local" is added to the address, then to the number given, "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown parties may deal in perfect safety by availing themselves of the Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of goods is three days, and if a sale is effected we remit amount to the seller, but if not we return the amount to the depositor, and each party to the transaction carries one way. For all transactions exceeding £1 value, a deposit fee of 2s. 6d. is charged, when under £1 the fee is 1s. All deposit matters are dealt with by "The Motor Cycle," Coventry, and cheques and money orders should be made payable to Little & Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive answer to their enquiries are requested to regard this as an indication that the goods advertised have already been disposed of. Advertisers often receive many enquiries that it is quite impossible to reply to one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

3 1/2 h.p. for sale, 2-speed, free engine, like new; 2 years' use, offer refused.—Fish Shop, Ship Rd., Blaydon-on-Tyne. [X37]

TRIUMPH, 1912, F.E., new last June, been fully used and condition guaranteed as new; 2—Avery, Wetheral, Carlisle. [X37]

DOUGLAS, Xmas, 1910, excellent running order, tyres practically new, replete, all accessories; 2—Smith, 51, Victoria Rd., Darlington. [X37]

1913 Douglas Zenith, New Hudson, Rover, Smith Precision motors—send orders now for early delivery.—C. W. Smith, Northgate, Darlington. [X37]

2 1/2 h.p. 1912 Model, forced induction, Amag & Co. 22 trolled mag., automatic and pump lubricated, adjustable pulley; £25; buying car.—Cotton, 14, Barnard St., Sunderland. [X37]

1912 Zenith, 5-6 h.p., excellent condition, with large Lucas lamp, spare belt and tube and belt can new heavy Kempsall on back; £52, or nearest offer. Wilson, 39, Stanhope Rd., Darlington. [X37]

INDIAN, 1912, 7 h.p., free engine, only done 2,000 miles, original tyres still fitted, enamel and plating perfect; price £42, complete with lamp, horn, etc.—Forster, Douglas Crescent, Bishop Auckland. [X37]

### SECTION II.

York and Lancashire.

L.

HITCHINGS', Ltd.,

LIVERPOOL, 74, Bold St.

TRIUMPH, Matchless, and James motor cycles, and Swift cyclecars; sole agents; courteous service and absolute satisfaction guaranteed. Your enquiry invited by Hitchings', Ltd., 74, Bold St., the pioneers of motor cycling in the north. (Established 55 years ago. No connection with any other firm.) [X17]

6 h.p. Matchless, speedometer, F.R.S. lamp and horn 248.

3 1/2 h.p. Triumph, F.E., speedometer, lamp, and horn 244.

2 1/2 h.p. Singer; £35.

ALL 1912, condition as new; nearest offers.

MUST Sell to make room for 1913 models; Triumph already being booked.

HICKS, Motor Works, Sherburn, York. [X766]

3 1/2 h.p. Bradbury, good condition, powerful, good tyres; trial; £23.—G. Barker, Grassington, Skipton. [X322]



# THE MOTOR CYCLE

ESTABLISHED IN 1903

AND FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

FIVE HUNDRED AND SEVENTH CONSECUTIVE ISSUE.

Subscription Rates : Home, 6s. 6d. ; Canada, 8s. 8d. ; Foreign, 17s. 4d. per annum.

UNITED STATES.—The International News Agency, New York.  
 AUSTRALIA.—Gordon and Gotch, Ltd.; Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania).  
 NEW ZEALAND.—Gordon and Gotch, Ltd.; Wellington, Auckland, Christchurch, and Dunedin.  
 SOUTH AFRICA.—Central News Agency, Ltd.  
 CANADA.—Gordon and Gotch, Ltd., 132, Bay Street, Toronto.  
 PARIS.—Smith's English Library, 248, Rue Rivoli.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

## The Paris Show.

THE Paris Salon, which opened its doors on Saturday last, was rather disappointing from a motor cyclist's point of view. This was partly due to the fact that the largest French firms making motor cycles had signed a bond not to exhibit this year. When we say that the names of such well-known firms as Clement-Gladiator, Peugeot, Alcyon, Clifton, and La Française were not in evidence, it will be understood that the Show was by no means representative. The absence of these firms does not allow us to criticise the whole of the French motor cycle industry, but those makes which were in evidence do not compare at all favourably with the British motor cycle exhibits in the same exhibition, and no comparison whatever can be made between the Salon and Olympia. At the latter exhibition practically every stand was of interest, whereas at Paris the search for novelties of interest to motor cyclists was tedious in the extreme. There may be more motor cycles shown at the Petit Salon, which will open next Saturday, and probably there will be also some representative cycle cars there, but the Salon proper is practically devoid of cycle cars. Descriptions of those present would be only a repetition of the last few issues of *The Motor Cycle*, as all the principal French manufacturers have been dealt with in our pages.

French firms still devote more attention to the engines and power units of their machines than they do to detail work of frames and fittings, a failing they have always had. This may be partly due to the price question, as most French machines are lower priced than well-known British makes.

As a spectacle the French Salon is unequalled; it has always led in decorative effect, and the lighting of the interior and exterior of the building is a wonderful sight. We refer here to the main hall, which is given up wholly to motor car exhibits. This domination of the best positions by large motor car concerns of previous shows is what partly induced the large cycle makers to refrain from making any display at all this year. At the last Show motor cycles were relegated to an obscure corner, so this year many firms are absent altogether.

It is particularly gratifying to British makers to hear the opinion of some of the French exhibitors, who make no secret of the fact that they are modelling their 1913 machines on the lines of the best English designs.

British riders have shown the pre-eminence of our machines in open competitions held in France during this year, and it is no idle boast to say that, were it not for prohibitive tariffs which the French Government impose on all foreign made motor cycles, British motor cycle makers would be able to do a very large amount of business during the next year or so. French riders recognise the reliable quality and easy control of our best motor cycles and covet them, but the business to be done is comparatively small owing to tariff walls. A first-class French machine can be obtained at about £10 less than a best grade British mount when duty, freight, and other charges are added. During our visit to Paris for the Show we did not see one single motor bicycle being ridden in the streets of Paris or in the vicinity of the Salon, and only a few cycle cars were in evidence—a contrast to the conditions prevailing at home.

## The High Price of Petrol.

THE meeting convened by the Royal Automobile Club to enquire into the cause of the unduly high price of petrol, and to discuss the possibilities of permanently reducing this price, showed that there was no real reason why the price should be so high. It is, of course, much easier to decide that the price is too high than to discover any practical means of reducing it. It has been suggested in *The Autocar* that the R.A.C. and the A.A. and M.U. should combine to buy petrol in bulk, as is done by the great omnibus and cab companies, at a reasonable price and retail it to their members. The difficulties of such a scheme seem to be that a large amount of capital would be locked up in it which could be usefully employed in other directions, and that very complicated arrangements would be necessary to cope with the distribution, as depots would have to be established all over the country.

The great petrol companies seem to think that they are justified in obtaining as large a profit as possible, and as the petrol trade is in the hands of three companies only, it does not seem probable that competition between them will result in any very considerable reduction of price, if any at all.

The necessity of a home-made fuel becomes more and more apparent, and it seems evident that the time has arrived for a reconsideration of the heavy tax on alcohol for industrial purposes and the further experimenting with such fuels as benzol.



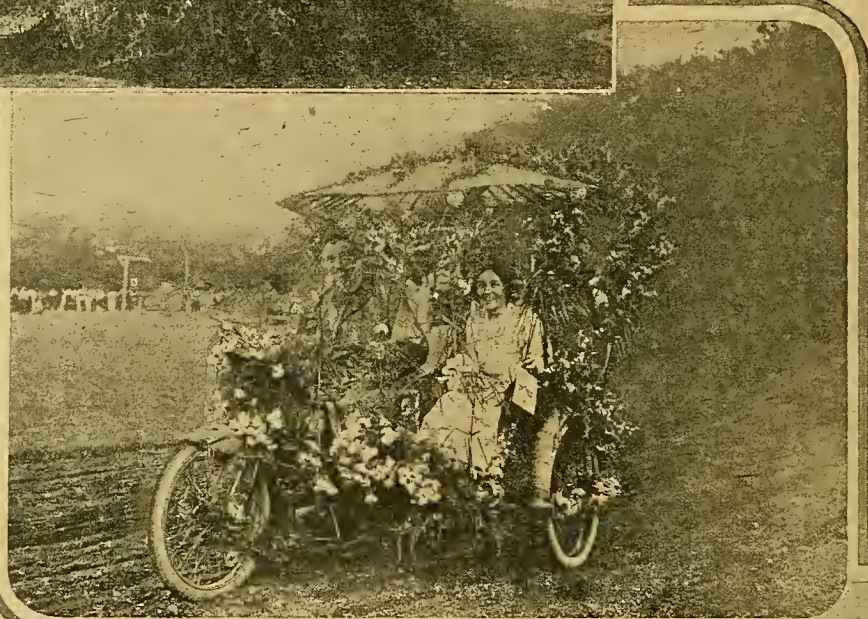
# Decorated Sidecars at a Fête



AT A HOSPITAL FETE IN CAPE TOWN LAST MONTH ONE OF THE GREATEST ATTRACTIONS WAS THE COMPETITION FOR DECORATED MOTOR CYCLES.

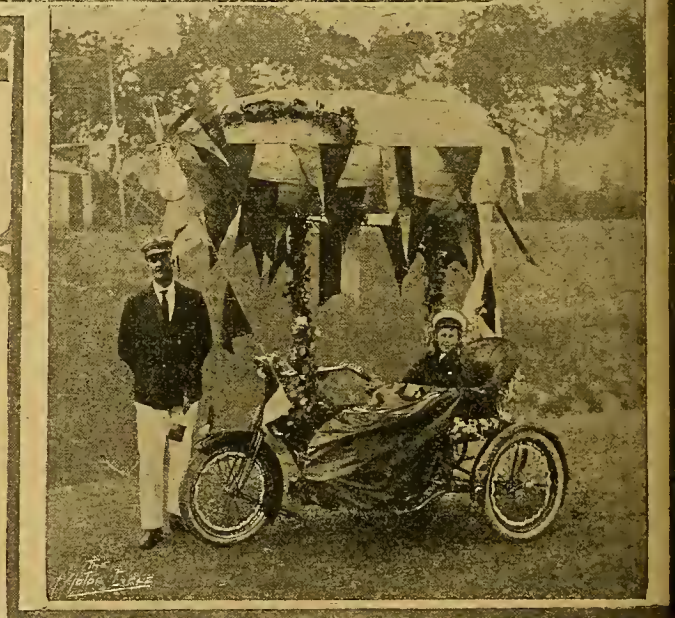
Our photographs show:

- (1) The winner, B. Spilhans (6 h.p. Enfield).
- (2) M. Crenery (3½ h.p. P. & M).
- (3) F. Barling (6 h.p. Enfield).



## London Gloucester Run.

On Boxing Day the N.-W. London M.C.C. will hold an open winter run to Gloucester and back, starting from Jack Straw's Castle, Hampstead. The route will be *via* Watford, Wendover, up undeclared hill in Risborough district, Dashwood, Cirencester. Return *via* Birdlip, and then same route as outward journey, climbing undeclared hill in Aston Rowant district. Distance about 235 miles. To qualify for a silver cup a competitor must on the outward journey (a) climb Aston Hill, the undeclared hill, and Dashwood Hill at the first attempt; (b) make a non-stop run from the start to top of Aston Hill; (c) lose not more than ten marks. On the return journey, (a) climb Birdlip Hill and the undeclared hill at the first attempt; (b) make a non-stop run from Gloucester to Cirencester; (c) lose not more than ten marks. The trials sec. is Mr. H. E. Taylor, 17, Taviton Street, Gordon Square, W.C.





## OCCASIONAL COMMENTS.

By "IXION."

**Show Hustling.**

Though the crowds at the Olympia Motor Cycle Show did not quite equal those at the car exhibition, the hustling rendered a close inspection of the more popular exhibits a very difficult business. It is eminently desirable that on one day at least of the next Show admission should be limited to people who are more or less potential buyers. This should be easy to arrange, if the promoters would limit admission to a midweek date to persons holding membership tickets of recognised motor cycle clubs, who might pay an increased entrance fee in return for the privilege.

I set aside one afternoon for a precise study of several original mounts which I had not previously been able to overhaul as closely as I wished, but the crowd made it practically impossible to scrutinise them at all in detail. Finally, in sheer despair I wandered up into the gallery: and there the squashes were even worse. The narrow gangways will not hold the crowd of stand devotees and a double stream of pambulating enthusiasts.

**Wanted, Better Springing.**

The real disappointment of the Show was the closeness with which designers treat the springing problem. The last few years have been practically barren in this most important respect. I admit that the problem is difficult, but when we consider the number of first-class brains connected with the industry, the lack of originality in this respect is little short of amazing. Springing has to be cheap to manufacture, neat of aspect, and to possess such lateral rigidity that it will not interfere with balance. If I can assure the trade that the motor bicycle can never attain its full popularity until it is better insulated from road shocks.

Extensions of the market must include a majority of weakly and elderly individuals. These recruits will desire to ride moderately lengthy distances; and they cannot do it on the existing rigid frames, on which the main dithers and jerks are only modified by springing the front wheel and using spring-suspended saddles. The ache across the wrists, the ache across the back, and a weariness at nightfall are all inseparable concomitants of a prolonged ride for many men over forty years of age on existing machines.

If we were certain that motor cycle makers were honestly devoting their best energies to the problem, we would hold our tongues and make the best of things. That may be true of the American industry (where the roads are worse), but it is not true of ours. The average British manufacturer knows he can sell many machines as he can make, and he devotes himself somewhat cynically to perfecting his present design, as if any departure from it must spell bankruptcy.

In a year or two, when established makers are fighting hard for a slice of the steady, week-in, week-out supply, those makers who—other things being equal—supply the best springing will have a gigantic scoop. Surely every maker might make a beginning by insulating the saddle-pillar from the rigid frame?

Surely every maker might set one man to experiment with a rear spring fork? Are the possibilities of air springs exhausted? Would not bigger tyres pay on the "cob" types of machine, at any rate? Will some large firm of reputation take up the matter seriously and be for ever after blessed by motor cyclists generally? Even the most rabid and youthful scorcher would thank them, for he would be able to travel faster with less fatigue.

**Cleaning and Springing.**

I could only reflect sadly that if a tithe of the ingenuity shown in carburetter and engine production had been devoted to springing and to making a machine rust and mudproof, motor bicycles would be far more suitable for all-the-year-round road work than they are. The real fact is that the racing factors have dominated the industry during the last two years; the track and the hill-climb have been the two features on which most makers have glued their eyes. The industry and the pastime could do with a rest from all speed work for twelve months.

The healthiest object lesson any manufacturer could have to-day would be a *clientèle* consisting exclusively of very dropsical elderly men whose anatomies were excessively tender, whose business compelled a daily journey of a prolonged character, and whose temperament forbade them either to ride a rigid or shabby machine, and to clean it themselves. If I were a petrol king or a Rothschild I would unearth 5,000 individuals answering this description, and provide them each with motor bicycles drawn from ten leading factories. Their vitriolic correspondence with the makers and in *The Motor Cycle* during the next twelve months would procure sundry urgently needed reforms.



Mrs. S. Robinson, an enthusiastic Northamptonshire motor cyclist who, a month or two ago, completed a 700 mile tour alone to Scotland and back on a lightweight fitted with a 2½ h.p. J.A.P. engine. The machine is fitted with an Armstrong three-speed gear and is efficiently dress-guarded. 100 m.p.g. is the average consumption.



# THE CONNAUGHT TWO-STROKE.

Two-stroke engine details are always interesting, and we are now enabled to publish a detailed description of the Connaught single-cylinder engine made by the Bordesley Engineering Co., Ltd., Birmingham, and shown on the stand of

the Service Co. at the Olympia Motor Cycle Show. The cylinder is of the three-port type, and one of the most notable points is that the ports are situated only in the front and rear walls, so that the side pressure of the piston, due to the angularity of the connecting rod, is utilised to keep the piston tight over the ports in spite of any wear. To this end the inlet and exhaust ports are arranged one immediately over the other, and this is shown clearly in the appended diagrammatic section

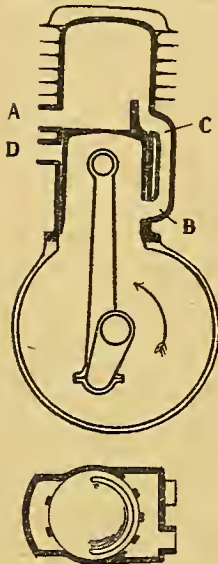


Fig. 1.—Elevation and plan section of the Connaught engine.

tion of the complete engine. The piston is shown nearing the bottom of the stroke, having already opened the exhaust port A. A second port B, which acts as a transfer port in conjunction with the third port C, has also been opened by means of a port which is cut in the wall of the piston.

The vacuum or suction in the crank case induces the fresh gas, and this occurs when the piston rises and uncovers the inlet port D, thus bringing the carburettor into communication with the crank case. Immediately the piston descends on the power stroke, the inlet port is closed.



Fig. 2.

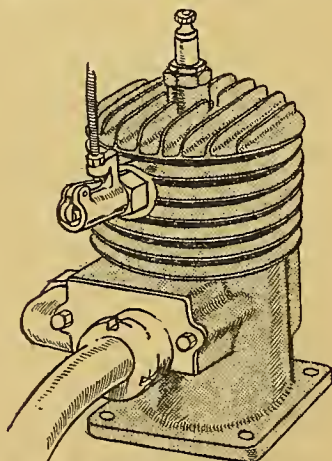


Fig. 3.—Connaught cylinder, showing exhaust pipe and compression release.

It will be at once realised that a great benefit accrues from the close juxtaposition of the inlet and exhaust ports, which are, in fact, contained in the same box cast on to the side of the cylinder, since the cool incoming gas tends to keep the temperature down in the neighbourhood of the exhaust. It will be noticed that the piston is furnished with the

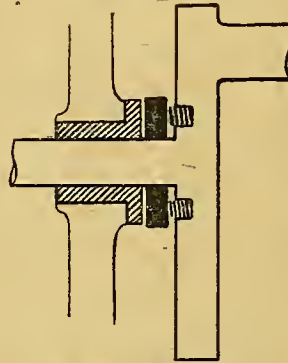


Fig. 4.—The special crankshaft bearing and hardened steel ring to render the crank chamber gas tight.

usual deflector head, which extends semi-circularly round the piston as indicated. The sketch also shows the extreme width of the ports, this giving a very rapid cut-off, and at the same time providing very large apertures for the gas to pass through.

The second illustration shows how the ports are arranged so as to lie close underneath one another, whilst the third sketch shows clearly the cylinder and port box, and the attachment of the exhaust pipe, the inlet pipe being placed at the side. From this sketch it will be noticed that the sparking plug is placed in the centre of the cylinder head, and that the compression release valve, which is operated by a Bowden lever from the handle-bar, is at the side.



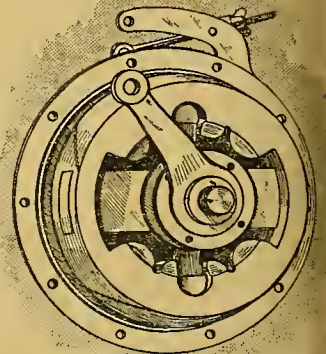
Fig. 5.—The oil measure for lubrication.

by a circle of small springs let into the crank webs. A large outside flywheel is fitted, and enables the engine to revolve at very slow speeds. The method of lubrication adopted is simplicity itself, and follows the practice which has now become standard on two-stroke engines in the United States, viz., the admixture of a suitable quantity of oil with the petrol. The oil is kept in a separate compartment of the petrol tank, and the correct quantity is measured into the petrol

when the latter is replenished, with aid of a small cup, which is screwed to a specially made tap on the oil (see sketch). The proportion of oil is one-sixteenth of a pint to every gallon of petrol. The cylinder is of cast iron.

## H. & B. GEAR.

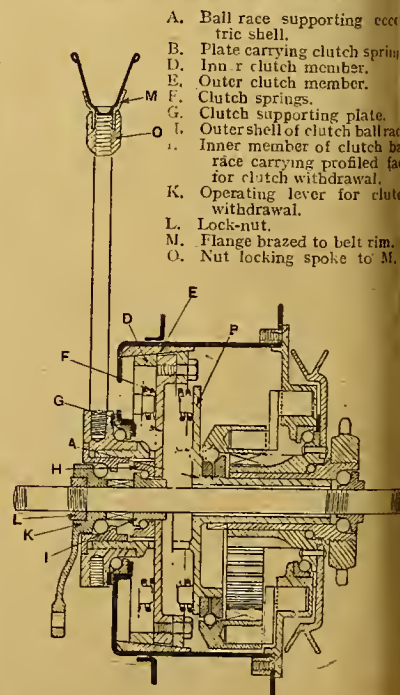
The H. and B. gear remains the same all its essential features, in that it has only two gear wheels, the outer, which is internally cut, being mounted eccentrically and driving by means of crank levers. The expanding clutch, however, has been replaced by a cast iron clutch, which is operated by means



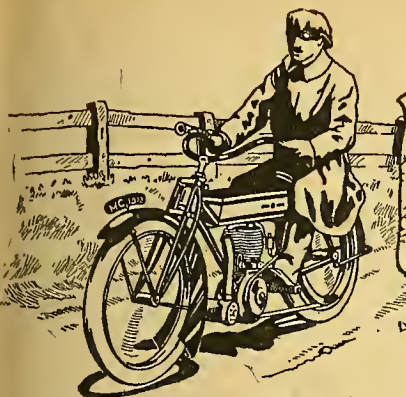
Hingston and Brown two-speed gear, manufactured by R. T. Shelley Ltd., with hub she removed showing new cone clutch.

a pair of cam faces. Another new feature lies in the belt rim, which is fixed to the driving portion by tubular spokes. The rim is held to the spokes by nuts, which screw on to lugs brazed to the rim. The gear has the merit of simplicity.

### Sectional elevation of the H. & B. gear.







## MUDGUARDING.

Devices for Mudproofing Rider and Machine.

LAST year I was permitted to air my grievances on mudguarding in the pages of *The Motor Cycle*, and in the hope that they will be of interest to winter riders, I am venturing once more on a few remarks about the same subject. The notes from which this article is written were taken at the recent Olympia Motor Cycle Show, and, owing to the limited time and unlimited crowds, it is probable that I passed over more than one clever mudguarding device. If this is the case, I offer my apologies to the manufacturer of such device, and beg to point out that where I have mentioned the names of any firms, I have done so merely to give examples, and have not attempted to give a full list of machines fitted in any particular manner. First of all, the thanks of all of us who are mudpluggers, by inclination or

Quite a large number of firms were showing machines having front guards with side flaps extended for their whole length, and a few were shown with useful mud-splashes either attached to the lower extremity of the front guard or to the front wheel stand.

More attention has been given to the protection of the front wheel brake gear, but it is little short of marvellous how many machines there were in the Show fitted with side flaps to their front guards and stopped off just behind the spring forks. Thus the springs and shackles constantly need cleaning and the brake gear jams, necessitating a dismount after every few applications of the front brake, to free the shoes from the rim.

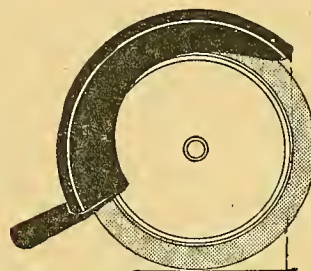
It is true that certain types of fork carry their springs above the guard, where they are in little need of protection, but this is no excuse for not properly protecting the rider.

A good front guard should have side flaps for its entire length. These should increase in depth as they approach the bottom of the guard, and should also be somewhat splayed outwards, a large mud splasher being fitted at the bottom. The guard should also extend forward at least as far as the outside of the wheel rim. Even this does not fully protect a sidecar passenger from mud thrown by the wheel.

### Protecting the Belt.

Turning to rear guards and belt guards, things are disappointingly unaltered, and were it not for the ray of hope which emanates from such far-sighted firms as the Rex, Bradbury, Rex-Jap, and New Hudson, the outlook would, indeed, be misty. All these firms have paid attention to the belt-guarding question, and though I am an enthusiastic

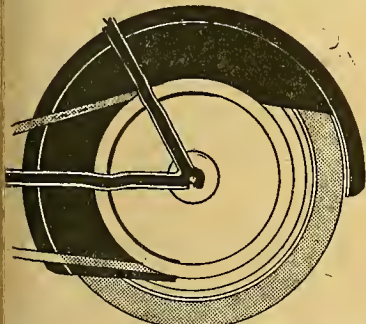
supporter of belt drive (for solo work at any rate), I fully realise its shortcomings as a winter transmission. During the past year, however, I have been riding a machine fitted with a special belt guard, and although the driving pulley was a very small one, no signs of slip have been noticeable even in the worst weather.



A good front mudguard should extend at least as far forward as the wheel rim and have wide side wings and a mud splasher.

This proves that a belt can be properly guarded, and there is no possible doubt that the subject should be at once taken up by the manufacturer. Several firms are fitting guards round the engine pulley, and amongst the neatest is the aluminium casting on the Premier. This machine also has the distinction of being fitted with what is probably the widest rear guard on the market. It is of the domed type and measures approximately 7in. across the chord.

Failing a complete belt guard such as is fitted by the firms previously mentioned, why, oh why, does the manufacturer finish off his rear guards just at the very worst point, i.e., just above the bottom length of belt? When finished in this place, all the mud and water

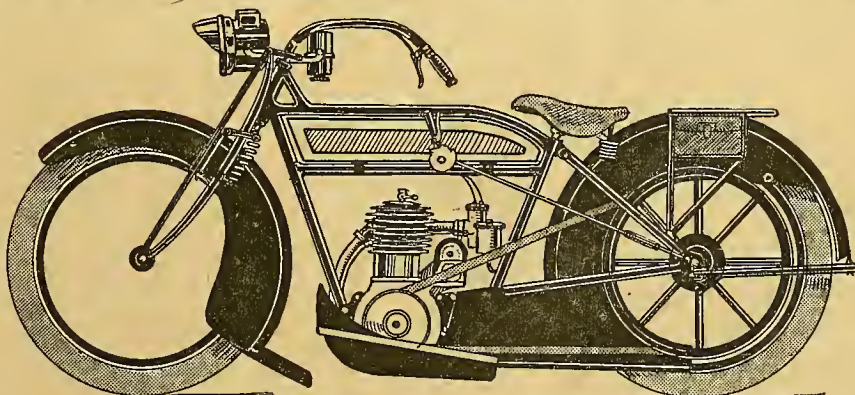


Showing how rear guard on belt driven machines should extend below the belt and when possible inside the belt rim.

necessity, are due to the manufacturer not giving us better front mudguards. There are many really fine examples of front wheel guarding, among which the wide side wings fitted to the Douglas, Etti, and Williamson machines deserve special notice.

### Widely-spread Front Guards.

I have heard it said that they are both unsightly and wind jammers, but I cannot agree with either of these statements. In the first place, people are much too apt to label anything they are not used to as unsightly, and, in the second, the guards are no wider than the rider's legs which they protect. In any case they are well worth the fitting, for they will save not only the rider and working parts, but also the enamel, and thus the machine will retain its smart appearance for a longer period.

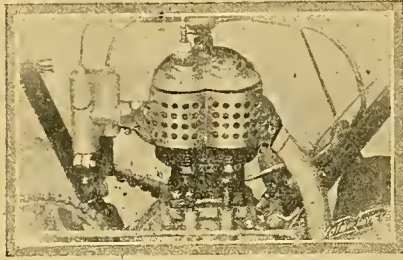


The writer's notion of a weather-proof machine. It has an all-black finish and guards as described in the accompanying article.



### Mudguarding.—

picked up by the rear tyre is flung round the guard and on to the belt in a continuous stream. The correct way to protect the belt is to continue the guard to a point just below the belt, and to fit a side flap from the guard to just inside



Holt's trouser guard, for which the Service Co. are agents.

the belt rim (as shown in accompanying sketch). In the case of a fixed geared machine it is impossible to bring the flap so near the centre, but it will be found quite efficient if brought to within  $\frac{1}{2}$  in. of the belt rim. This remark applies equally to machines having a countershaft gear with a belt as a secondary means of transmission.

The usual extension over the belt and brake rims, and even side flaps carried right round, unless brought round to the points above mentioned, do not save the belt, though they protect the rider, and for this purpose are admirable. The Humber and Centaur Co.'s fit a neat guard of the latter type, and as it is brought very close to the belt rim it probably protects the belt to a limited degree, but not sufficiently for real mud-plugging. On reading the above remarks, I can almost hear chain drive enthusiasts chuckle, but after riding a chain-driven machine hard for a considerable period I have a few remarks to make on this subject also.

### The Guarding of Chains.

Chain guarding appears to have received a great deal of attention during the year—a fact which no doubt accounts chiefly for the growing popularity of this type of drive. The A.J.S., Sunbeam, Clyno, and Lea-Francis are fine examples of how guarding should be carried out, and deserve much praise for their ingenuity.

The first point to be mentioned against entirely enclosed chain drive is usually inaccessibility, but with the coming of detachable wheels this point is easily disposed of, and a little thought has rendered the machines with fixed wheels at least as accessible as belt-driven machines with hub gears. Unless, however, the chains are enclosed, mud and grit soon ruin them, and also the sprockets, necessitating constant adjustment and spoiling the pitch, with consequent noise and loss of efficiency. It is possible to run exposed chains over dry roads for quite long periods without any very serious effects, but even then any grease or oil on the chains immediately collects dust and forms an excellent grinding paste.

Judging from the progress made during the past year, I am tempted to repeat more emphatically than last

year that absolutely oil-tight chain cases could be fitted which would not interfere with accessibility, and chains running in oil in combination with a good spring drive or slipping clutch should form an almost ideal drive.

### Weather-proof Machines.

With the exception of three machines—the Scott, Swan, and Lea-Francis—I searched the Show in vain for an undershield, and yet I feel sure that anyone who has once tried a well carried out device of this kind would refuse to be without one. It saves the rider, the working parts, and the cleaning brush, and consequently, given an oil-tight engine, one can go out in any weather and return with a spotless crank case. The mud can easily be scraped off a smooth undershield, or even washed off with a hose.

While on the subject of weather-proofing, it is a welcome change to see so many all-black machines in the Show, but here again there are only a few instances in which it is carried far enough. With the possible exception of tank fittings, which are easily cleaned, there is no necessity for any plating on the machine at all, and if each manufacturer was to turn out one really all-black model, it seems certain that it would find a ready sale among the regular winter riders. I fear that there are only four or five machines in the Show which can claim to be really thoroughly weather-proof, and there are points even on these which are open to improvement.

Mudguarding of motor cycles is progressing, but progressing very slowly, and in the meantime it is well to remember that there are several firms of repute who make special devices which may be attached to almost any make of machine for the purpose of keeping it and its rider clean and dry.

These firms are too numerous to mention, and their goods are mostly too well-known to need it. Two devices, however, the efficiency of which the writer has personally tested, are the Miller mudshield and the College screen. In conclusion, motor cycle manufacturers have got to wake up and attend to their

weather-proofing, unless they wish to see their clients leaving them for the protection afforded by a cycle car. It was not my intention to mention this form of locomotion in this article, but cycle car manufacturers would do well to take note of the experience gained by car manufacturers, for there were several light three and four-wheelers at the Show fitted with guards which will vibrate off and give very little protection to the driver and passenger.

UNIQUE.

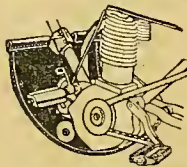
### A CLEAN DESIGN.

Mr. B. H. Davies's suggestions in our issue of December 5th have prompted a contributor to send us a suggested design (reproduced below) which embodies:

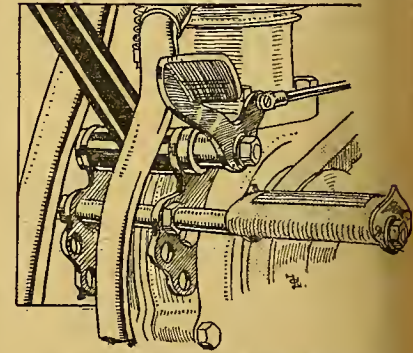
A two-cylinder water-cooled engine with valves on opposite sides and enclosed leads.

A three-speed gear box cast with the crank case, and the final drive by belt.

The machine is well mudguarded and has a smooth surface wherever possible



A "Semi" shield made by Beard-Brown & Co., Northampton.



Adjustable footrests are provided on the new Premier, the engine plates having three sets of holes to receive the footrest bar.

so that the whole may be swilled down.

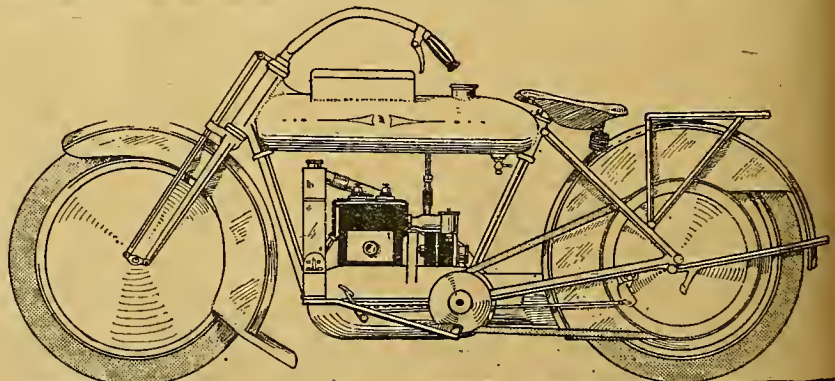
The tank is cast with the frame lugs (which practice is used by a well-known American firm), and with it is cast a tool box.

The front forks have enclosed springs, and the magneto is placed high up behind the cylinders.

All frame tubes are straight and a large silencer occupies the space between the bevel box and the rear mudguard.

Disc wheels are shown.

The design is novel and should be particularly easy to keep clean.



A CLEAN DESIGN, PROMPTED BY A SUGGESTION IN THESE COLUMNS.

(See paragraph above.)



## PASSENGER MACHINES AT THE SHOW.

By "IXION."

I DID not consider that the average cycle car exhibit was too encouraging. Symptoms indicated that the boom had caught the bulk of the trade napping. Some of the exhibits had obviously never been on the road at all. A reluctance to exhibit naked chassis is not a good sign: on several stands coachwork was tightly bolted down to cover all the mechanism, and as the presence of the coachwork made important details inaccessible or even invisible, except by crawling underneath, obviously the coachwork was intended to limit inspection, or, alternatively, the whole machine was experimental.

One cycle car is said to have received its finishing coat of varnish in the railway van *en route* from the Midlands. Another had such tiny brakes that it plainly had not covered 500 miles. Others had very long chains, with rather crude and limited adjusters. In fact, quite a number of the newer cycle cars will need a great deal of re-designing before they can face a six days' trial.

The average three-wheeled chassis was well designed on the whole; the difficulties of obtaining an accessible back wheel has been admirably handled in most instances. The passenger market of 1913 will without doubt fall into the hands of the sidecar, the established 1911-12 cycle cars, and a few select representatives of the newly-designed cycle cars.

### Genuine Cycle Cars.

The genuine cycle car, as opposed to the miniature automobile de luxe, has scarcely come into existence. The Morgan chassis, weighing  $2\frac{1}{2}$  cwts., with an 8 h.p. engine, has few rivals either in lightness, price,

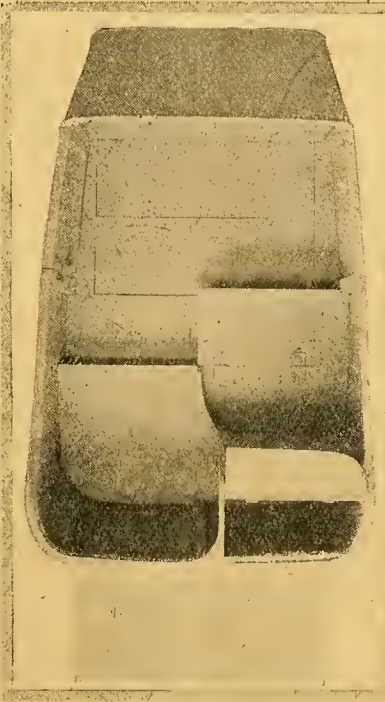
or general efficiency. Together with some of the belt-driven four-wheelers, it points to the ideal of a light machine, with air-cooled engine and simple transmission. If such a machine be eventually produced in quantities at a really low price, it will have a tremendous market, for it can compete with the sidecars. At present the lighter and simpler cycle cars are more costly than a typical sidecar outfit, and their road capabilities are comparatively unknown.

### Will Belt Drive Survive?

There is considerable controversy as to whether any belt drive is really desirable on cycle cars; and I should say that the Morgan transmission (bevel gear and two chains) and the A.C. all chain are the greatest arguments against the survival of the belt. If a rigid transmission be practicable on one of the lightest and cheapest machines now manufactured, the future of the belt is certainly problematical. On the other hand, big belts on big pulleys stand up excellently in sidecar work with medium-powered engines. Small belts and small pulleys are responsible for 95% of our belt troubles.

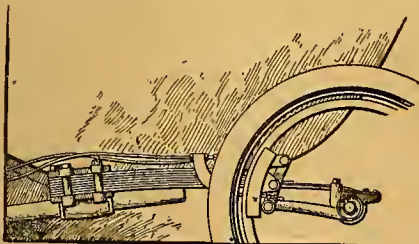
The advantages procurable in two-wheeler work by changing a 4in. for a 6in. pulley, and a  $\frac{3}{4}$ in. belt of inferior make for a 1in. belt

of good make are simply incredible; and I hope the lightweight enthusiasts will persevere with the belt for a year or two at least. The main merit of the belt is that it makes a large range of gear ratios possible on a light machine. A cheap chain-driven cycle car cannot very well have more than two speeds, or three at most; a cheap belt-driven one may easily have eight or nine.

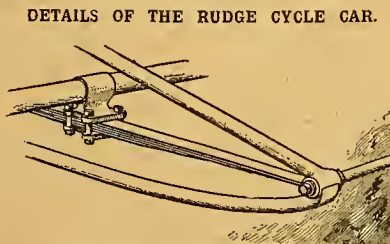


The body width of cycle cars is an important point. In some designs the driver is placed slightly in front of the passenger to give more elbow room, as in the case of the Swift body illustrated. Observe the compartment behind the driver's seat.

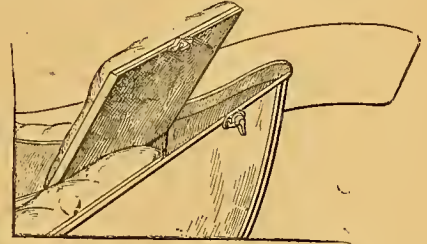
### DETAILS OF THE RUDGE CYCLE CAR.



Rear springing, showing belt rim brake



The framework and front springing.



A useful tool-box is arranged at the back of the driver's seat.



### Passenger Machines at the Show.—

The New Hudson chassis is interesting in this connection. Presumably a four-speed epicyclic hub type of gear could be cheaply made, and with anti-shock devices incorporated, might stand up under chain drive. But we cannot expect a machined four-speed sliding gear on a low-priced model. The smaller the engine, the greater the number of gears desirable.

I still fancy that there are great possibilities in the direction of a medium sized air-cooled engine, with a transmission consisting of large belts running over large pulleys, and gearing composed either of expanding pulleys or epicyclic hubs, used as counter-shafts.

### Tandem and Sociable Seats.

It is obvious that the public do not like tandem seating. This prejudice will retard the advent of the light, cheap cycle car, for a broad two-seater is a great wind stopper, especially when it has a screen and hood, and power will have to be piled on to push these outfits in the teeth of a gale. Some of the makers narrow down their side-by-side seats to 34 in. or so: this will never do. Some of the miniature automobile-de-luxe types are wonderful value for the money, though I should not be surprised to see the prices rise as the models are perfected, and large deliveries commence.

On one single chassis I spotted eight points which struck me as urgently demanding alteration, and I was told that the price of that machine had already been raised three times since it was first planned. The pioneer cycle cars which possessed any refinement of design or fulness of specification have mostly been listed close up to small car prices.

### Notes on Trial Runs.

Trial runs in the Hammersmith district were very interesting. It was obvious that many of the new types were clamouring urgently for better balanced engines, more flexible carburetters, and improved

silencers. The 50° type of V engine, with small enclosed flywheels, cannot be run so slowly as a 90° twin with large outside flywheel; it is questionable whether the best carburetters can make such engines really pleasant when running light; and I expect to see them all gradually ousted by 90° twins or small *monobloc* four-cylinders, both with large outside flywheels; probably the former, since they will be cheaper and more efficient.

There are already one or two good engines on the market, with 90° cylinders and good sized outside flywheels; but there has not been time for their makers to give deliveries.

Where there is but a small reserve of power, the cross drives and shafts requisitioned by setting the crankshaft longitudinally with the frame are far from ideal; and if the crankshaft be set across, the chassis is too short; in one or two cases these engines were mounted on stubby chassis, and the rear cylinder was not specially accessible.

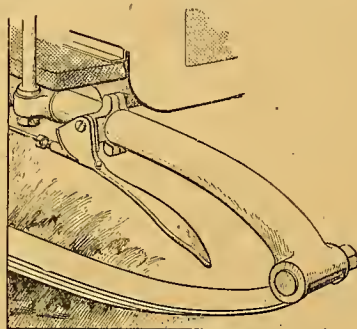
The commonest criticism of the demonstration machines outside the Show was that their engines were unpleasant when running free. I was agreeably surprised with the springing, which was much better than I had expected; but, of course, touring speeds were not attempted in the Kensington traffic. The next year will show a wholesale advance in design and construction.

### Sidecars.

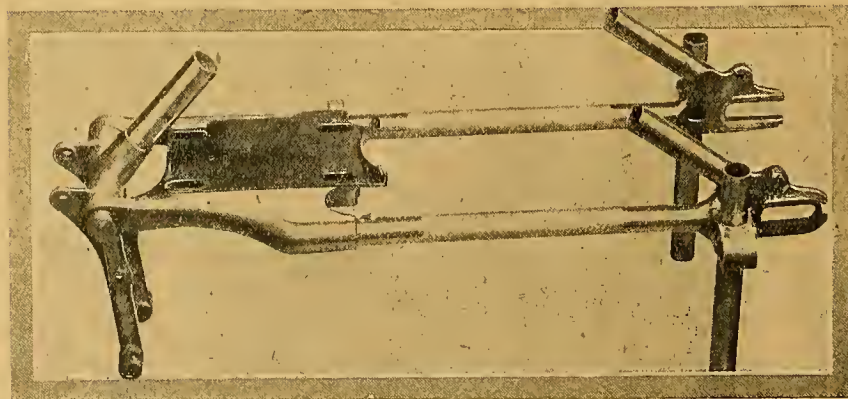
Turning to the sidecar, which promises to enjoy the bulk of the passenger trade for at least another twelve months, we saw that practically every maker supplies a bicycle well adapted for pulling a sidecar. J. R. Haswell, Hugh Gibson, the Rev. P. W. Bischoff, and others have demonstrated that a skilfully handled 3½ h.p. change-speed bicycle is capable of hauling a passenger and sidecar round some of the most exacting routes in the British Isles; and from this we may make the obvious deduction that the average duffer may expect excellent results with similar outfits in ordinary country.

The 8 h.p. three-speeded type of sidecar hauler is now a luxury, rather than a necessity, provided one is content with a hoodless, screenless wicker chair. Of course, if a heavy coachbuilt sidecar with full automobile fittings be selected, the engine power should be in proportion.

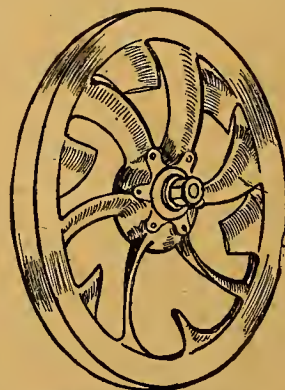
Since tyre troubles are unduly prominent with such powerful outfits, the Clyno detachable wheels are ex-



Exhaust valve filter on the Day-Leeds four-wheeler.



Construction of the Clyno rear frame, with which is incorporated a platform for the gear box and magneto.



Vaned outside flywheel of the A.C. sociable to assist cooling.



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The INDIAN models for next season represent quite a new departure in motor cycle design and construction. Its numerous improvements and refinements, which will be found below, make the new models at once the most easy riding and the most trustworthy machines extant.

The Laminated Spring Frame—makes the 1913 INDIAN the most comfortable machine on the road.

The Improved Foot Starter—enables you to start easily and gradually without effort.

The Extra Heavy Rims and Tyres—ensuring great strength and increased comfort to the rider.

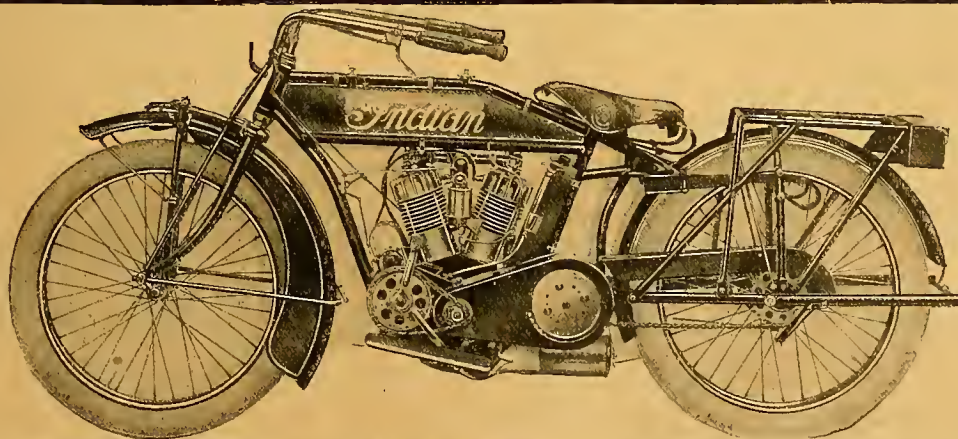
The New Silencer—most effective, can be used with end release open without offence.

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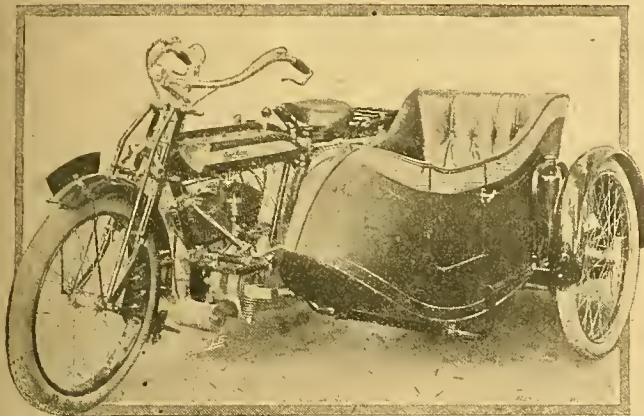
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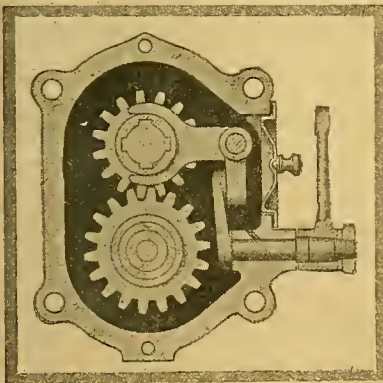
## Passenger Machines at the Show.—



1win-cylinder All-ave-Matchless and Sydenham sidecar. The wheel springing and front fixing of the sidecar will be noticed.

ceptionally attractive; probably such wheels will eventually figure on all the heavy outfits; for motor cycle tyres are notoriously somewhat of a lottery on the big sidecar pullers, and though some of them emerge from 1,000 miles' trials without a tyre stop, they generally use much heavier and costlier tyres than a private owner cares to employ.

Some extraordinarily comfortable bodies were staged. It may be questioned whether any motor vehicle provides greater comfort than a good sidecar; vibration and bumps seem to be totally eliminated, and the only drawback is a gentle swinging sensation, due to the insulation of a feather-weight chair by large springs on a light chassis.



End view of F.N. two-speed gear on the 5 h.p. four-cylinder model.

cars: the exposure of the driver to wind, dirt, and vibration is its real demerit, partially balanced by the compensations of having two machines in one (when the sidecar is detachable). This demerit is sufficiently real to ensure an ultimate future for the cycle car so soon as it can actually compete with the sidecar outfit in price, economy, and reliability; but that day is not yet.

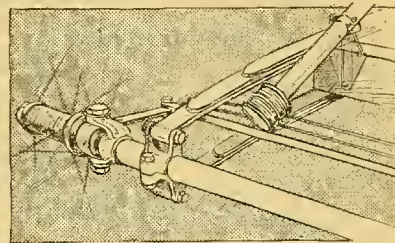
## Sidecar Attachments.

Other things being equal, it is a great advantage to own a motor bicycle which has brazed sidecar lugs. I fear I am rather a lurid driver at times, and I generally manage to shift my sidecar fixings by brilliant cornerwork; while novices encounter some trouble in adjusting the sidecar correctly; brazed lugs would be a help to us both.

The sidecar brake is attractive. We cannot use the bicycle front brake very ruthlessly, and the bicycle rear brake is apt to glaze on tours with a heavy load in hilly country. The only sidecar brake I ever used was a band brake, operated by a Bowden wire from the handle-bar, and quite uncompensated. I did not like it; but I shall watch with interest the type of double rear braking which is interconnected and compensated, such as the Rover. In its absence, most of us use throttle braking wherever possible, and so spare the belt-rim shoe.

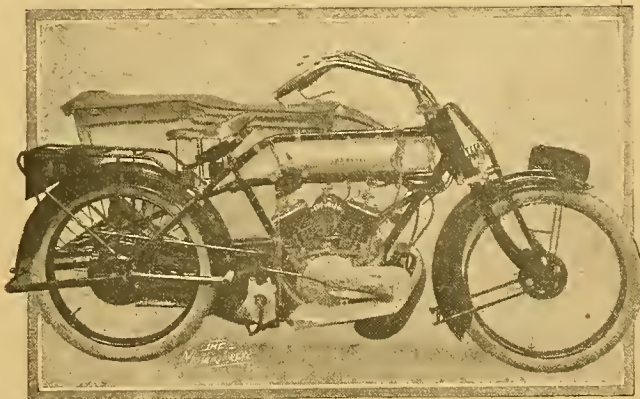
I fancy two shoes on the rear wheel of the motor cycle, one inside and one outside the belt-rim, would be equally efficacious and perhaps a little cheaper.

The single belt drive will lose much ground among sidecar enthusiasts this year, although it is tolerably efficient. Some of the new three-speed hubs have a lower bottom ratio than in 1912, so that a 4½ in. or 5 in. pulley will permit of a double figure bottom gear with a big belt riding on the top of the engine pulley.



Front springing and cable steering on the G.N. runabout.

But there are attractive alternatives; in one line we have three-speed chain-drivers like the James and A.J.S. and powerful twin belt or chain drivers such as the Rex Sidette; in another, we have such combined drives as the New Hudson. It is an exaggeration to say that the secondary belt on a combined drive never slips. But beyond contradiction such belts run for several thousand miles with remarkably little attention, and will grip in pouring rain if they are tight, fairly well protected, and fit their pulleys. I have never known one absolutely refuse to haul on the most puddlesome flats or against a rainstorm on a hill—when conditions have often made me dismount with the single belt drive. In the heavier class we have such ideal sidecar outfits as the Clyno, Bat, Enfield, Williamson, etc. These will appeal very forcibly to riders who seldom think of detaching the sidecar, while the lighter machines are more attractive to men who more often use their machines for solo work.



6 h.p. twin-cylinder Rolfe sidecar machine, fitted with Precision engine, chain drive, and counter-shaft gear.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the "Editor, The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### Riding Hands Off.

Sir,—A rider of a racing Douglas (judging from its Brooklands crackle) was observed on Sunday morning, while passing through High Street, Bromley, Kent, at a comfortable pace, to place his hands simultaneously into his pocket, bringing forth matches and cigarettes, and then to light a cigarette and replace the before mentioned articles in his pockets without in the least disturbing himself or the control of his machine. This speaks well for the steadiness of the Douglas and the rider's skill, and he should next try Bromley High Street on a Wednesday evening, after early closing, when he will have an appreciative audience.

MYER B. LEE.

#### Mudguarding.

Sir,—On page 1391 you illustrate a belt guard as used on the Elswick. I fitted my  $3\frac{1}{2}$  h.p. two-speed Humber with a similar guard (but carried further back on the underside) three months ago, and find it very efficient.

I had an incident with this machine which I should like to relate for the benefit of fellow motorists. It is fitted with a Binks two-jet carburetter, and on going out one evening it was missing badly on the small jet. When throttle was opened wide enough to expose the large jet it ceased missing. Naturally I diagnosed the trouble as a partially choked jet. I took down the carburetter, but could find nothing wrong, still the missing continued. I then tried a new plug in which the spark gap was nearly  $\frac{1}{16}$  in., the missing ceased. I then opened out the points of old plug and the missing vanished. I remembered I had closed the point somewhat after my previous run, and, as I could see daylight between them, did not think it possibly could be the plug; thus it is, not an advantage to have the points very close.

TI 140.

#### Cycle Car Design.

Sir,—There is much to interest those of us who are keen on the cycle car in your recent issues, but there are one or two matters which I think can profitably be considered by your numerous readers.

Firstly, as regards the matter of the carriage springs for the cycle car, there is a notion abroad that springs are expensive. They are not. A set of four first-class springs for a cycle car I have built cost me one sovereign, and each spring is four feet long and quite flat when loaded. These are the fundamental conditions for smooth running and freedom from pitching and bumping so common in what pleases "Ixon" to call the genuine small car, which, as he says, cannot be run for  $4\frac{1}{2}$ d. per mile.

Again, weight is not a necessary condition for smooth running. Dead weight on tyres and harshness of drive, to say nothing of the careless use of the brakes, are the chief contributory causes of rapid tyre wear, and therefore expense, so I should strongly recommend those interested, whether professionally or otherwise, to see that the cycle car selected shall be economical as to tyres. There is no reason why a cycle car, a "genuine" one, with the drive divided between two wheels, and the weight nicely distributed between the four wheels, should not average quite 10,000 miles with good large motor cycle tyres.

There are other points, such as durability of engine, number of speeds, etc., that I should like to write on, but

I must content myself with a word of caution to the user and to the trade, that hasty rushing into the really new motoring will not be best for all concerned. There is no reason, however, that the co-operation of really skilled designers, with sound originality, based on a broad engineering experience, and capitalists, should not readily produce and sell with handsome profit four-wheel cycle cars, having ample engine power, four speeds and reverse, and differential gear, luxurious springing, and roomy two-seated body, side by side, for under the £100.

I sincerely hope that the genuine amateur will come forward and support the new "Cycle Car Club," so that the professional element will be quite in the minority.

A. E. PARNACOTT.

#### Silence.

Sir,—I shall be obliged if you will allow me a small space in your valuable paper to comment on the remarks of "Ixon" re the undesirability of a silent motor cycle in your previous issue. I have always read his excellent articles, and much appreciate the great influence they must have had on the trend of design of modern motor bicycles. I must, however, disagree with him on one point. He says: "I regard a really quiet motor bicycle as a public danger. An inaudible car is dangerous."

Now has he ever ridden a really quiet motor cycle and driven an inaudible car, or is his statement merely drawing a bow at a venture?

His argument against silence is an old one. It was held against the noisy boneshaker, and again against the Silent Knight engine when first used by the Daimler Co., yet somehow all these objections are never heard of now; for it is a curious thing, too, that ever since the advent of this engine manufacturers have endeavoured year by year to produce a more and more silent and smoother running car, and with never a protest from car owners and drivers, which would be strange if their cars were more dangerous to drive than noisy ones.

Ask anyone who drives a Silent Knight engine or rides a modern push-bicycle whether its silence is a danger, and he will say, quite the contrary—it is both safer to ride and drive than a noisy one.

Has "Ixon" ever ridden, say, a modern Scott machine? I have, and, in company with many other satisfied users of these machines, say it is even safer to use and less frightening for the pedestrian than the usual  $3\frac{1}{2}$  h.p. touring mount. I have never heard a word against its silence, except, perhaps, that it would be an improvement to make it even more quiet.

Of course, with a quiet machine as against a noisy one, one cannot blind through villages at full speed, trusting that the hideous noise produced will compel every other user of the roads to make way, but must simply slow down to a respectable speed of, say, 17-18 m.p.h., and give a warning, if required, by horn in a gentlemanly way; for as soon as the flashy bouncer or "Kuut" sees that he himself will be in danger when blinding through traffic on a silent machine he will slow down. Thus you will see that silence, far from having a bad effect, will automatically reduce speed through towns and villages, and will be as great a boon to the general public with motor bicycles as it has been with cars.

SILENTIUS THE SILENT.



## Before Olympia

we were convinced that the Victoria value would cause a mild sensation—and it did.

## After Olympia

we hold the proof, for motor cyclists far and wide have not only shown appreciation, but filled our order books with practical evidence thereof—and when you think of it—when you study the specification of the

# VICTORIA MOTOR BICYCLE

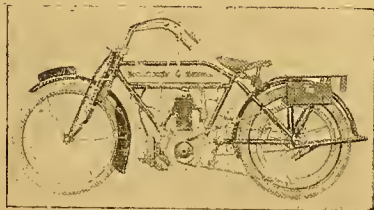
which is as under—

*Precision engine, single cylinder, 85 m/m, bore x 88 m/m stroke, with mechanically-operated side-by-side valves, and variable pulley; specially designed Druid patent girder spring forks; Bosch high-tension magneto; chain driven; Brown and Barlow carburetter, with handlebar control; Dunlop rubber belt; Dunlop heavy rubber-studded tyres; Brooks B170 saddle, and an exceptionally full equipment—*

When you know its price—£38—you, too, should be convinced.

Anyway, we're here to fill that purpose, and we ask you to let us tell you more about "Victoria" value—write us.

**Victoria Motor and Cycle Co., Ltd., Victoria Wks., Dennistoun, Glasgow.**



**Price £38 0 0 complete.**

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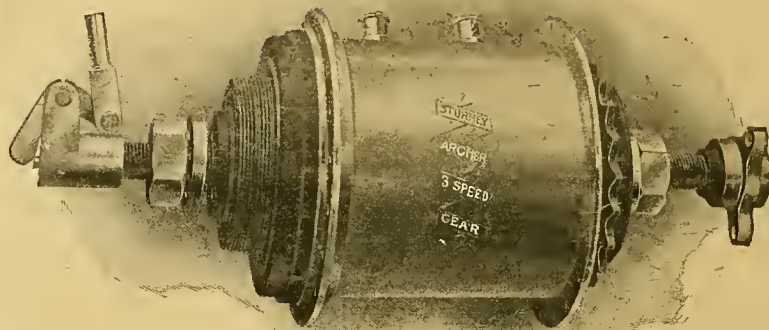
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## 3-Speed & Free Engine Motor Cycle Gear.==

At Olympia the most popular variable gear was the 3-speed hub gear, seen on practically every maker's stand in the Show.

Experts declare that 80% of the 1913 Motor Cycles will be fitted with 3-speed gears. See that you get the BEST, the original Sturmev-Archer with direct drive on top gear. As fitted by the leading makers, Triumph, Humber, Bradbury, etc.

Send for new illustrated Booklet to—  
**STURMEY-ARCHER GEARS, Limited,**  
**NOTTINGHAM.**



## A SELECTION OF LETTERS FROM OVERSEAS READERS.



Opening meet of motor cyclists of the Eastern Province, at Port Elizabeth, South Africa. Most of the machines are of British manufacture.

**The Sidecar in Tasmania.**

Sir,—Being a reader of your interesting journal, and one that has taken a keen interest in motor cycles for some years, I am forwarding a photograph of myself and family taken on my free engine Triumph and sidecar. This is a very hilly



C Jillett with his heavily loaded Triumph and sidecar. (See letter.)

country, and, considering our weight (26½ stones), the machine is really a marvel for power and reliability, and I cannot speak too highly of it. The three-speed gear will be a great boon. There is only one three-speed machine (a New Hudson) out here yet. Wishing your journal every success,

Hobart, Tasmania.

CECIL JILLETT.

**Riding Conditions near Port Elizabeth.**

Sir,—As probably one of the oldest motor cyclists in England, and having been in South Africa about eight months, perhaps a few words re the prospects of motor cycling here may be of interest.

I came out in December, 1911, with visions of terrible roads, impassable streams, hills which would surprise me, and therefore without a motor cycle, but after a few weeks found things locally not to be so bad as I expected, so invested in a B.S.A. single-gear (1911 late) machine, on which I have now done over 7,500 miles over all parts of the country.

The roads here are bad at times, only tracks with bad ruts, but do not let anyone think they are unrideable, for more pleasure I never had than in the last six months. I broke the cross country record to Grahamstown, a city ninety-six miles away, which I did in 3½ hours—surely sufficient in itself to prove machine, roads, and rider are in good order.

I have not yet met a hill which I could not easily surmount—in fact after three weeks solo riding I felt that a sidecar would improve the pleasure, so invested in a Montgomery, castor wheel, which has done me good service. With this combination I regularly average 20 to 25 m.p.h. over the local roads, and romp up hills not more than 1 in 8 with 12 stone passenger, and have managed our pet hill, Whites Road, average 1 in 6½, with a 10 stone 8 lb. passenger.

In short, South Africa offers pleasures equal to home for the motor cyclist, no police traps and no speed limits.

Port Elizabeth, South Africa.

J. W. BROWN.

**The Motor Cycle Going Ahead in New Zealand.**

Sir,—The photograph herewith may be of interest to readers of *The Motor Cycle*, which is looked forward to by motor cyclists here. The photograph shows the opening run of our local club, which has now forty members, and was promoted by myself. The favourite machines out here are the Rudge, Triumph, Bradbury, Indian, and the Douglas. The pastime is really booming just now, the trouble is to get deliveries. The 3½ h.p. is the most popular, and there is a fair demand for lightweights, but I am rather afraid that they will not come up to expectations, as some of their owners expect too much from them. They are driven fast over our rough roads, and if anything breaks their owners are the first to want to know the reason why.

Ferguson Street, Feilding, N.Z.

W. B. BENSON.



New Zealand motor cyclists assembled at Feilding, the event being the opening run of the newly formed Feilding M.C.C.



### Does an Engine Run Better at Night?

Sir,—A recent contributor to your columns puts the question, Does an engine run better at night? Now, I have frequently noticed that engines do run better at night, and they have been made to run equally well through the day by increasing the air supply. Sunshine through the day and chilliness at night is, in my opinion, very conducive to this condition, as the temperature being lower at night the air is much more dense, and, therefore, more of it enters through an orifice than would be the case through the day, therefore I do not doubt that an engine would run more uniformly if it were made possible for more air to enter the carburetter.

ALFRED RILEY.

### The Price of Motor Cycles.

Sir,—I was greatly impressed at the perfect truth of "Ixion's" article in your issue of November 28th with reference to the price of motor cycles. Like all other good motor cyclists I visited the Show and was struck with the wonderful glitter and finish, awfully high prices, and amazing inaccessibility of the majority of the machines staged.

I am getting about sick of paying anything between fifty to sixty-five guineas for a motor cycle, consequently I was greatly disappointed to notice the general rise in prices. Will no firm of assemblers or makers come forward and offer the public (and a huge number of the public at that) a thoroughly good 3½ h.p. single or twin, simple and reliable, at £30 to £35. Let us (the crowd) have a cheap and reliable machine and let the man with the long purse pay for racing track experience.

"Ixion's" reference to the influx of foreign machines is just true, and if the foreign motor cycle is as good as some of the foreign cars, well then good-bye to the motor cycle trade.

BUILDER.

### Territorial Motor Cyclists.

Sir,—I wish to draw your attention and that of your readers to the difference in treatment accorded to civilian and Territorial motor cyclists.

When it was first decided by the authorities to employ motor cyclists during the Army Manœuvres, I understand the scheme provided that the vacancies should be filled by members of the Territorial Force upon the following terms, viz., 8s. per diem for maintenance and insurance of motor cycle, and pay and messing in addition, amounting in the case of a private to 2s. per diem.

It was found desirable to enlist the services of civilians in addition, and application was made accordingly to the Automobile Association and Motor Union. The terms offered were as follows, viz., 8s. per diem for maintenance of machine and 8s. per diem subsistence allowance. This means that a civilian draws £2 16s. allowance per week as against 14s. by a Territorial soldier, and probably does not expend more than 25s.

The grievance, therefore, under which Territorial motor cyclists are suffering is that, although they have been trained in military duties, and hold in the majority of cases non-commissioned rank with attendant responsibilities, the value placed upon their services by the authorities is exactly one-quarter of that of civilians untrained in military duties.

In view of these facts, the authorities can hardly expect to retain the services of Territorial motor cyclists who have served under the existing conditions, unless the terms offered to Territorials and civilians are placed on an equal footing.

ONE WHO HAS BEEN BITTEN.

### Tyre Wear.

Sir,—Replying to "An Old Reader's" letter in *The Motor Cycle* of November 28th, I beg to state that I have given my close attention to this particular problem for the past two years and have conducted all manner of tests to fathom the undue wear taking place at the walls joining the beads. As the result of those tests, I found that the wear occurred through movement of the beads in the rim both laterally and in creeping, also when a sidecar is attached there is a severe twisting strain set up on the inner bead wall, the one nearest to the sidecar, which is increased considerably if there is not perfect alignment between the sidecar wheel and the motor cycle driving wheel, both horizontally and vertically. Then there is another factor, viz., thickness of beads. I personally have handled quantities of motor cycle covers of various manufacture, and some have

thick beads, some medium, others thin; most rims are standard in size at the edges of rim to take the bead. If that bead does not fill that space, movement occurs, especially if the tyre be a trifle under inflated, and the result is, through movement, the edge of rim cuts its way through rubber and canvas at that part in time. I can positively say that the wall joining the bead is the weakest part of a tyre, as at that part you get the join between the solid and stationary part and the flexible and moving part of tyre.

I have handled plenty of covers of various makes which have had splendid treads on them; in some cases one bead had parted in various places, and in some cases both beads had gone. I am pleased to say I have devised a means of preventing this chafing, but to all I would say keep your tyres hard.

WALTER MORRIS.

### Fair Treatment.

Sir,—With reference to the letters which have recently appeared in your excellent paper giving instances of the fair manner in which some motor cycle makers treat their customers, I should like to point out that such treatment is not common only to the makers of the actual machines themselves, but is shared by some of the accessory makers.

My experience, though not so striking perhaps as that of Rev. Douglas Hamilton, will bear testimony to the manner in which Messrs. C. H. Pugh, Ltd., makers of the Senspray carburetter, deal with complaints.

My carburetter, an early 1912 pattern, appeared to have one of two defects, causing, amongst other things, very high petrol consumption, so I wrote to Messrs. Pugh to ask their advice. Their reply was the immediate despatch of a "shop" carburetter for my use whilst they overhauled my instrument. Besides a complete overhaul, they brought my carburetter into line with their most recent model, for which they made no charge.

I trust that you will find space to print this letter, as I think such promptitude and consideration are deserving of a little publicity. I may add the usual disclaimer.

RALPH WADE.

### Shape of Combustion Chamber.

Sir,—We are informed that the spherical (is cylindrical meant?) combustion chamber is not suited to hill-climbing. Whatever does this mean? If, as the author asserts,

"... Every motor cyclist, even of the potter type, knows that the combustion chamber which approaches the sphere (again, cylinder?) most nearly in shape is the most efficient." Then why are we subjected to theoretical results which are attributable solely to the exterior surface of the combustion chamber itself? Making use of his system of logical deduction, cannot we say that if it takes a certain period of time for a given surface of metal, such as we have in the construction of cylinders for valves either side by side or on opposed sides, to get hot, that it will take a relatively shortened period of time for a smaller surface, such as is employed in the cylindrical combustion chamber having overhead valves to get cool? Here an advantage is derived, and, although without the adduced argument, it must be shown that we are not constantly hill-climbing. Therefore, the matter resolves itself into the question of cooling, and it must be conceded that properly cooled overhead valves should, theoretically, score a comparative advantage which it is to be hoped the 1913 season will cause attention and due consideration.

The presumed answer of the enthusiast for scavenging needs no comment. It is correct, and it should be further emphasised that all but a very small quantity of waste, exploded matter remains in the combustion head, whereas in the case of side by side or other valves the quantity is very considerably greater owing to the extra surface necessary as valve pockets at the very place where most heat is generated and retained, and where better cooling becomes a very valuable necessity.

Then, when the explosion takes place in the cylindrical chamber the whole power transmitted thereby is obtained exactly where it is required, on the piston head. Contrast this with an explosion which spends a really greater proportion of its energy than is usually imagined in the valve pockets, serving no useful purpose, but rather the contrary, and but one obvious answer is forthcoming. Was it not stated in the motor cycle press at the time of the last T.T.



races that the riders of Regal-Green machines (overhead valves and water-cooled) were miles an hour faster up hills than their *confrères*? And was it not stated in the same press that in the excessively arduous Six Days' Trials—a "trial" truly in more senses than one—an overhead-valved, water-cooled machine of only 499 c.c. went successfully over the course on a gear of  $4\frac{1}{2}$  to 1 when very many failed on higher powered machines geared much lower? [This statement did not appear in *The Motor Cycle*, and it is not true.—Ed.] What more, then, is required to show that a machine having the combustion chamber of its power unit as nearly true cylindrical as circumstances permit, plus efficient cooling, is at present equal to any other type of chamber at present in use? Is this due to overhead valves or to the cooling system? To the happy combination of both I would reply.

KULINDOS.

Sir,—With reference to an article in *The Motor Cycle* of November 21st, entitled "A Few Points Simply Explained," signed by "Magneto," I should like to draw your attention to several discrepancies and misconceptions therein.

Your correspondent asks, "Why does an engine take more air when travelling fast?" and proceeds in a rather lengthy, indirect way to explain this phenomenon; whereas it is known amongst the scientific people that an engine actually takes *less air per revolution* as the speed increases, due to the throttling or wire-drawing effect at higher gas velocities, and, of course, this is the reason why one has to open the extra air, to make up the deficit due to throttling, in order to keep the mixture strength correct, but at the same time the mixture gradually becomes richer as the speed increases, in a secondary manner, due to the petrol obeying a fluid law of flow, whilst the air supply obeys a gaseous law, which results in a greater weight of petrol being sucked at higher speeds than the air.

Air scavenging has been proved, beyond doubt, to increase the power of a petrol engine, and the writer has recently taken indicator diagrams from an aeroplane engine, air scavenged, which showed an increase of power of twenty-five per cent. over a similar capacity unscavenged type.

It is rather interesting to note that in "Magneto's" simple explanations of the disadvantages of scavenging, based chiefly upon his erroneous figures, he uses the "most efficient mixture" (whatever is meant by this, as authorities upon the subject use four distinct meanings for efficiency, each depending upon the sense in which it is used) as the basis of his beliefs, whereas in his expositions upon combustion chambers he infers that "efficiency is not what is wanted in a motor cycle engine."

D. M. NEWTON.

#### The Transmission Question.

Sir,—We notice in last week's issue of your journal that a correspondent laments the fact that manufacturers generally do not turn out a motor cycle with an under-gear pulley in conjunction with belt drive. Will you allow us to point out that the N.S.U. Co. have marketed several models with the above method of transmission for some years, and that a machine fitted with an under-gear pulley in conjunction with belt drive can still be supplied by them?

N.S.U. MOTOR CO., LTD.

#### Proposed A.C.U. Ten Days' Trials.

Sir,—I see that there is a proposal to combine the A.C.U. Six Days' Trials with the Scottish Six Days' Trials next year, and, as one interested in the manufacture of light cars (may I be excused if I do not call them cycle cars, it is an awful name), perhaps I may be permitted to say how this idea strikes me. At the first glance, the idea appears to be excellent, and would, without doubt, prove a most exacting trial for any machine; but on consideration it has its disadvantages. In the first place it is doubtful if many amateurs (or are they novices now?) could spare time or money for such a protracted trial. Secondly, there is the human element. At the end of the Scottish trial this year, many of the men had done about as much as they could do, and if they had had to go on for another six days many would have retired from ill health. At the end of the A.C.U. trials, which were nothing like so hard, many competitors seemed to have had enough, and the smiles of relief as each man finished on the last day were eloquent of this. Given fine weather in the proposed combined trial all might be well, but I fear ten days of wet and exposure might prove too much for many riders. Thirdly, there is the question, can the smaller and younger firms afford the time necessary

for such a trial? This does not affect the large and established firms who can afford to employ men to ride for them and do nothing else, but it does affect, to my mind, the smaller manufacturer.

In most cases the principals of small firms elect to compete personally in these trials, and wisely so, as they can learn more about the machines they are responsible for in this way than any other. Now to compete in such a trial as is proposed would mean an absence for the best part of three weeks from business for such men, and it seems to me that very few could afford to be so long away from their works. The views of other manufacturers would be of interest at the present moment before the matter becomes one of decided fact.

J. TALFOURD WOOD.

#### Judging Distances with One Eye.

Sir,—Your splendid paper, *The Motor Cycle*, has many a time been called upon to settle a complex question, so I take the liberty to ask the readers to help me in the solution of the following case:

I have a patient, aged about 47, whom I converted into a keen motor cyclist about twelve months ago. Previous to this he had no experience of motors, and could only mount a push bicycle by the step, but now he can mount a  $3\frac{1}{2}$  h.p. by the pedal with engine working.

A fortnight ago he was out shooting, and had the misfortune to get shot in the eye (right). This necessitated the removal of his eye. He now fears he will never be able to motor cycle again, and as this troubles him very much he has asked me to write to your paper to find out if there are any motor cyclists with one eye. Since the removal of his eye my patient cannot judge the distance of objects from him.

Would any motor cyclists who have the misfortune to be minus an eye give me their experiences and the difficulties they have to contend with in the pastime? They could communicate with me direct (my address is Basingbourn, Cambs.), or through *The Motor Cycle*, if you think their replies would be of general interest.

(DR.) SELBY CLARE.

[It is possible that the difficulty may disappear as the patient becomes accustomed to depending upon one eye only.—Ed.]



#### HEAVY-WEIGHT SIDECARISTS.

Mr. and Mrs. R. Holland, of Rawtenstall, on their 6 h.p. Enfield sidecar combination. Mr. Holland scales 16 stones 9 lbs., and his passenger 14 stones 7 lbs., yet after 5,000 miles, including the roughest surfaces, the owner reports complete satisfaction. 80 m.p.g. is given as the petrol consumption.



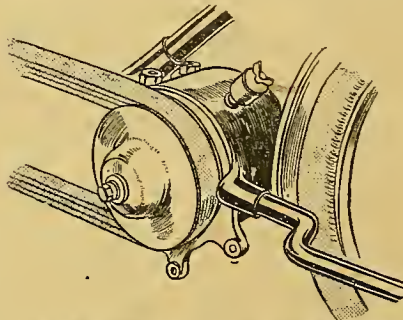
## PARIS SHOW.

### THE MOTOR CYCLE EXHIBITS.

**W**HEN we visited the Paris Salon on Saturday last we were prepared to find the motor cycle exhibits placed in their usual obscure position, but were hardly conscious of the fact that the motor cycle stands would be all relegated to the galleries. In previous years the large firms have had their motor cycles intermingled with the cars when they happened to be makers of both; this time the large firms, for reasons stated elsewhere, have held aloof. The British made machines are more numerous at this Salon than at any previous Parisian exhibition, which made one feel proud of the position we hold in the industry. The exhibits of Douglas Bros., New Hudson, B.S.A., Rudge, Triumph, Williamson, etc., were all being examined with the greatest interest by French visitors. These machines make the French motor bicycles look very second-rate, as it is only during the last year that French makers have seriously considered the fitting of change-speed gears, and naturally, while the British product has been gradually improving, the Gallic one has been practically at a standstill.

Foreign firms like the Moto-sacoche, Moto-Rêve, F.N., N.S.U., etc., which have had the benefit of British agencies or depots to advise

and help them to keep in touch with modern British requirements have brought their models into line, and their exhibits at the Salon show that they have profited by that experience and advice. Naturally with the Olympia Show only just over there is little to lay before our readers regarding the above-mentioned firms' exhibits and their stands; we shall, therefore, be content briefly to mention the fact that they are represented,



The Reno-Gillet gear box and belt drive. The cylindrical box is built into the frame as shown.

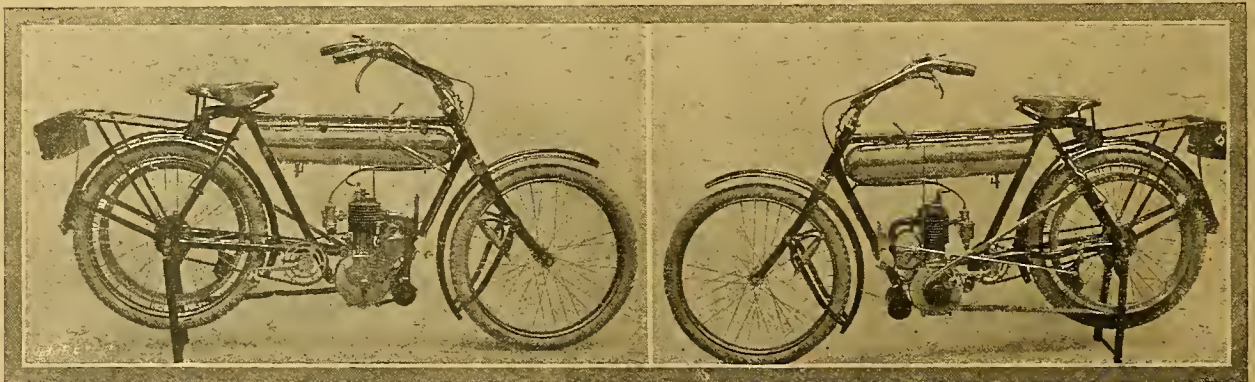
and state for the benefit of foreign readers where they may be found in an exhibition that is bewildering in its maze of galleries, anterooms, and passages.

The decorations, particularly those in the main hall, are indeed splendid. The colour scheme of every stand is identical, i.e., the pillars and

sign are of the same shape and painted a light stone colour with panels of chocolate. On the top of each sign is a kind of inverted chandelier of many imitation candles; these are each tipped with an electric bulb for evening illumination, and when all are lighted and the dome of the Grand Palais and the surrounding panels are all picked out in a blaze of many coloured lights, the effect is magnificent. The lighting of some of the galleries was very bad on Saturday last, and the exhibition closed at 6 p.m. without some stands receiving any light except what was reflected from the main hall and adjacent anterooms.

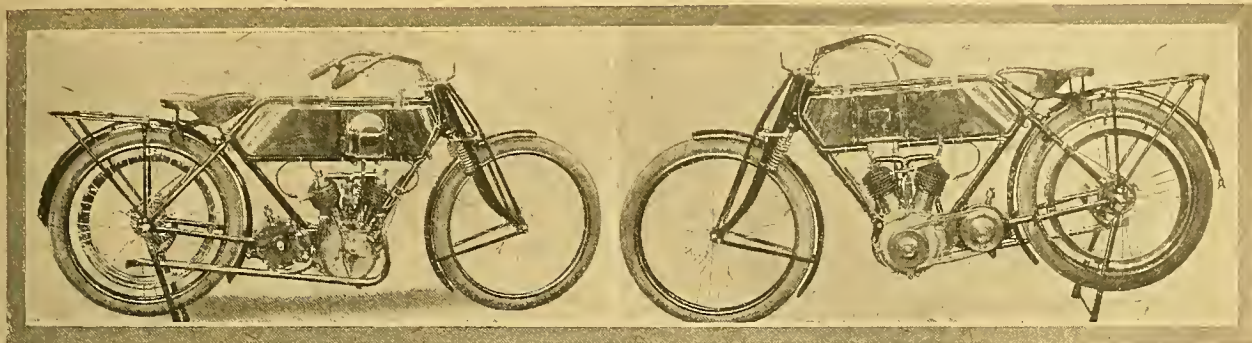
#### Motor Traffic in Paris.

Outside the exhibition building the mind was bewildered with a rushing stream of taxicabs, private motor cars, etc., and crossing the Champs Elysées was only undertaken at some slight risk. We noticed that *agents de police* were stationed at the important crossings to warn taxi-drivers of their speed propensities, but often without any notice being taken of the caution. When the Show closed at 6 p.m. the rush for the Tube was so great that the entrance to the nearest stations had to be closely guarded by the police, and only a sufficient number of the crowd to fill each train was admitted.



Belt and valve sides of the Austral, a neat single-cylinder machine with Swiss engine.





Both sides of the 3 1/2 h.p. twin Rene-Gillet, showing the two-speed gear box. This was exhibited in an incomplete state.

### Austral.

CYCLES AUSTRAL, 12, Rue de Lamar-tine, Paris (Salle T, Stand 1).—The erstwhile makers of the Austral tricar, once a familiar feature of the Paris Shows, were exhibiting one example of the Austral motor bicycle. This is a 2 h.p. model, 62×82 mm., with an ordinary type of frame and a special spring fork. The blades of the latter are hinged at their centres, and lugs above and below the hinge serve to carry coil springs in compression. A Longue-mare carburetter and Bosch magneto are fitted. The tank is circular and nickel-plated, and a large hand outside oil pump is fitted to the side of the tank well forward. The engine is made by Zurcher et Cie., Pontarlier, and has an adjustable belt pulley.

### Automoto.

AUTOMOTO, Rue Gutenberg, St. Etienne (Balcony, Stand 15).—This firm was one of the first to manufacture motor cycle engines in France. It shows one example of a twin-cylinder belt-driven machine with Moser engine and carburetter, the latter handle-bar controlled. The belt transmission is provided with a jockey pulley for tightening the belt. The magneto is in front of the crank case and silencer underneath it. The hand oil pump is too close to the saddle, otherwise the machine is neat and workman-like in appearance.

### B.S.A.

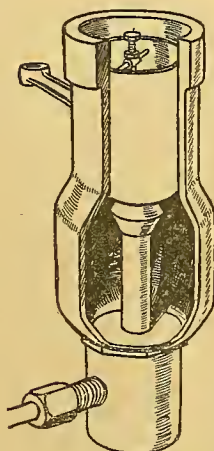
POTIER LECORSIER AND CO., 196, Boulevard Voltaire, Paris (Salle S, Stand 14).

—One example of the B.S.A. motor bicycle fitted with a cane-seated sidecar. The machine was in a very obscure position, and we only discovered it late one evening just before the building was cleared.

### Douglas.

DOUGLAS BROS., Kingswood, Bristol, and 190, Boulevard Pereire, Paris (Salle U, Stand 1).—Messrs. Davis, who are

the Paris managers of the Douglas business, have staged ten machines, and a very imposing show they make. Nine of the models are the standard gentleman's Douglas with and without change-speed, the other is a lady's. The same firm also handle the Williamson sidecar machine, and examples both of the air-cooled and water-cooled types are on view, also a Canoelet sidecar. The firm will be in possession of new premises on January 1st



A floatless carburetter named "the Fill."

(address as above) next.

### Fill Carburetter.

Of course, there are hosts of accessories of all kinds in the gallery, but the only real novelty of interest to motor cyclists is the Fill carburetter, which we illustrate. This is the product of a firm styled Carburateur Fill (Bonduel, 25, Boulevard Inkermann, Neuilly, Seine).

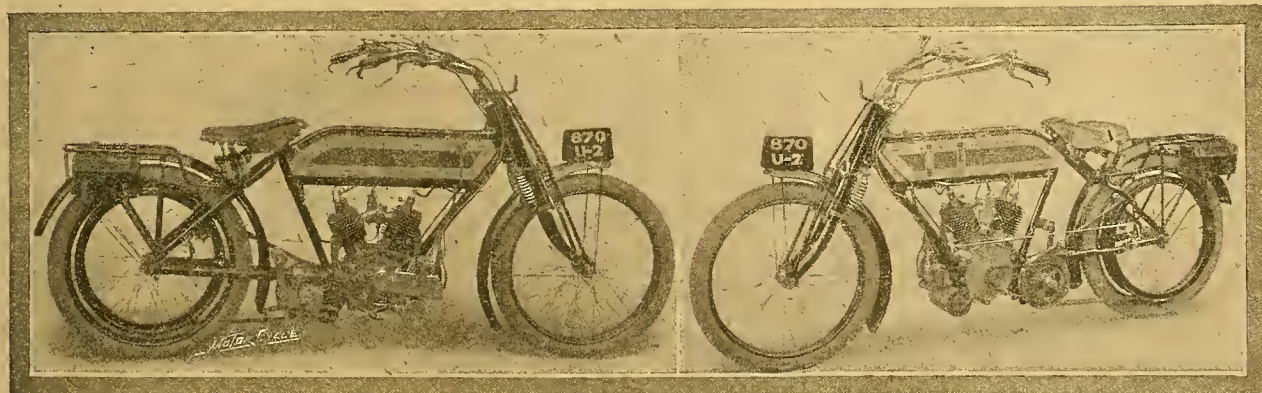
Briefly described, this has one chamber and no float. Petrol enters at the base, the flow of liquid being controlled by a long taper needle valve which opens more or less according to the suction and speed of the engine. This valve can be adjusted to give a greater or less quantity of fuel to suit engines of various dimensions. The vaporising chamber has one lever only. This raises or lowers the adapter around the jet tube, thereby increasing or decreasing the amount of extra air. With the lever in closed position the suction on the jet is powerful, thus rendering starting easy.

### F.N.

FABRIQUE D'ARMES DE GUERRE A D'HERSTAL, 4-6, Rue Pierret, Neuilly, Seine (Salle T, Stand 103).—The well-known 2 1/2 h.p. two-speed single-cylinder and the 5-6 h.p. four-cylinder models are to be found here, finished in the same style as they were exhibited in London.

### Gillet.

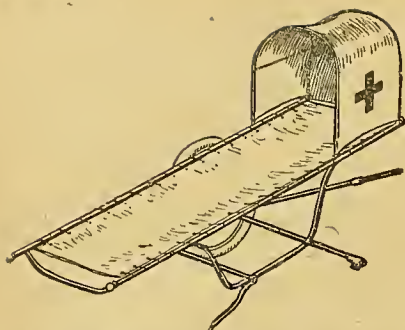
RENE GILLET et CIE., 128, Route d'Orleans Montrouge, Seine (Salle U, Stand 3).—No less than seven different twin models are made by this firm, which is one of the leaders of the



Two views of the 3 1/2 h.p. Harding-Jap, a twin-cylinder machine built in France with British parts throughout. The gear is a Bowden two-speed, the frame Chater-Lea, and the forks Druid.



## Paris Show.—



A Red Cross Service ambulance sidecar attachment shown on Motosacoche stand.

industry across the Channel. The principal patterns, however, are the  $3\frac{1}{2}$  h.p.  $64 \times 76$  mm. = 488 c.c., 5 h.p.  $70 \times 76$  mm. = 584 c.c., and 7 h.p.  $80 \times 100$  mm. = 1,006 c.c. The novelty for 1913 is the change-speed gear, which, previously forming part of the rear hub, is now built into the frame at the bottom bracket in a very neat and workmanlike manner. The gear box is a cylindrical casting, enamelled black like the rest of the frame, and the main shaft is driven by belt from the engine pulley, both pulleys being of equal diameter about  $5\frac{1}{2}$  in. The control pedals are carried on strong bosses formed on the right side of the casing. Patents are pending concerning the internal construction, so the device cannot be described at present. To stop with engine running the control pedal is depressed by the toe, this releases the clutch, a further movement applies the brake, and carried still further the throttle is partly closed to prevent the engine racing. To change gear the heel portion is depressed, which applies the low gear clutch, and upon pressing the heel further downward the high gear is brought into play. The clutches are conical, and, when starting, the high gear cannot be put in without first applying the low gear, an important point in the case of a machine in a novice's hands. The left pedal is used to apply a belt rim brake, and the whole of the rear triangle is covered in by sheet aluminium. Rene Gillet machines all have the magneto fitted in the tank like the Bat, and gear driven by a vertical connecting shaft from the timing gear. The control on the handle-bar is by rotating grips as on American machines. A sidecar is fitted to one or two models; one is made by T. Cadby and Sons, Birmingham, and called the Burbury; the others are by Mills-Fulford, Coventry.

**Harding-Jap.**

H. J. HARDING, 49, Boulevard Gouvion, St. Cyr, Paris (Salle F, Stand 7).—The Harding-Jap is made of British material and parts, the engine is a  $3\frac{1}{2}$  V twin J.A.P., Chater-Lea frame, and Druid forks are used. The two-speed counter-shaft gear is a Bowden, the saddle an X'All, tank Davidson, and belt Watawata. We illustrate this machine. The firm is agent in France for several different makes of English motor cycle parts, among them being J.A.P., Chater-Lea, X'All, Druid forks, Davidson tanks, and the British Hub Co.'s cycle car and other hubs.

**Herdle and Bruneau.**

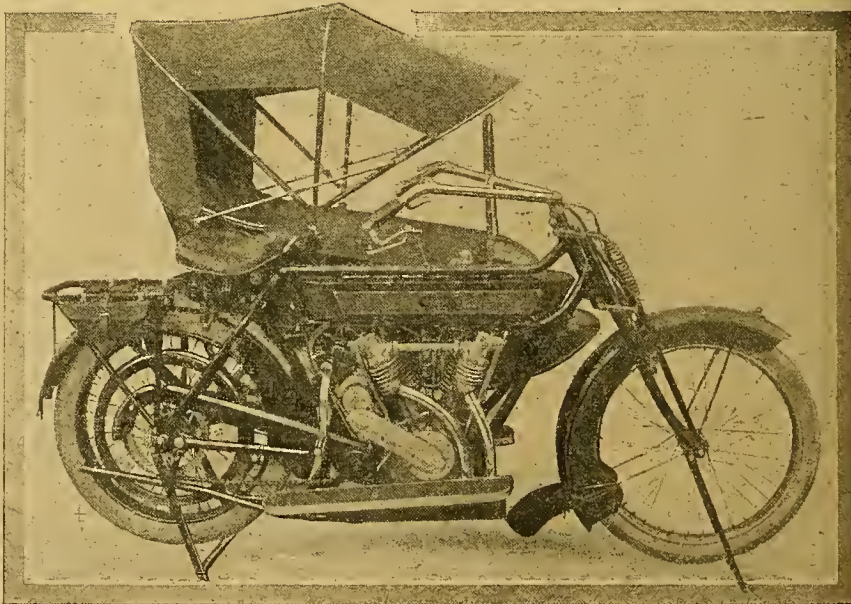
HERDLE AND BRUNEAU, 93, Pelleport, Paris (Salle T, Stand 5).—Motor cycle sets for attaching to ordinary push-cycles have formed the bulk of this firm's business up to date, but they will exhibit to-day (Thursday) quite a new model, advance particulars of which were given to us by their representative. The new mount is a twin-cylinder vertical model, water-cooled, with bore and stroke  $48 \times 75$  mm.; the connecting rods work on one crank pin, and explosions occur alternately in each cylinder. The transmission is by friction wheel and disc to a counter-shaft, thence by chain to the rear wheel. The feature of this transmission is that every part of it is entirely enclosed. The attachments are the same as those previously described, and consist of a little water-cooled single-cylinder engine fastened under the down tube, and driving by belt.

**Humberette.**

HUMBER, LTD., Coventry (Main Hall, Stand 113).—This cycle car will occupy a position on Humber's motor car stand in the Main Hall by to-day (Thursday), and will doubtless be subjected to the closest scrutiny. At the time of our visit to the Show, it was in the hands of the French customs authorities.

**Motosacoche.**

PAUL MUNCH, 2, Avenue Alphand, Paris (Salle U, Stand 4).—The  $3\frac{1}{2}$  h.p. twin Motosacoche has attached to it an ambulance sidecar with canvas hood and pillow, the hood bearing the cross of the Geneva Convention. The frame is constructed of steel tubing, and is suspended on long laminated springs. Another model new to British readers is a sidecar with the 750 c.c. Motosacoche V twin engine, chain transmission, and substantially constructed sidecar chassis. The attachment of the sidecar is well worthy of attention, and we illustrate the complete machine.



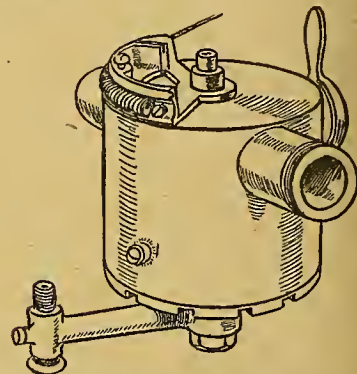
New model 750 c.c. Motosacoche sidecar. This is a very fine example of a chain driven passenger machine. The engine is the same as the Motosacoche firm exhibited at Olympia.

**Malicet and Blin.**

MALICET AND BLIN, 103, Avenue de la République, Aubervilliers, Seine (Salle X, Stand 1).—Some excellently finished examples of cycle car parts, either complete chassis, or gear boxes, steering, front axles, back axles, with balance gear, etc. They are employed on some of the best examples of cycle cars which were shown at Olympia.

**Millford Sidecars.**

JOUBE, M., ET CIE., 145, Boulevard Murat, Paris (Salle T, Stand 12).—The sidecar is not a quarter so popular in France as it is in England, but nevertheless the Millford sidecar should have a fair run in France, as it appears to be in good hands. The agents for the firm, Messrs. Jouve, informed us that the demand is increasing, and they have already sold quite a number of these attachments.



New design Moto-Reve carburettor with separate unions for front and rear cylinders.

**Moto-Reve.**

THE MOTO-REVE Co., 35, Rue de Lancy, Geneva (Salle T, Stand 11).—This Swiss firm exhibit direct the same models that were shown by their agents at Olympia. The English



**Paris Show.—**

machines are fitted with B. and B. carburetters, but those made for the French market have a new carburetter made by the Moto-Rève Co. Provision is made in the body of the instrument itself for the junction of two separate inlet pipes. A concentric type of float



Clutch control lever on the Moto-Rève handle-bar.

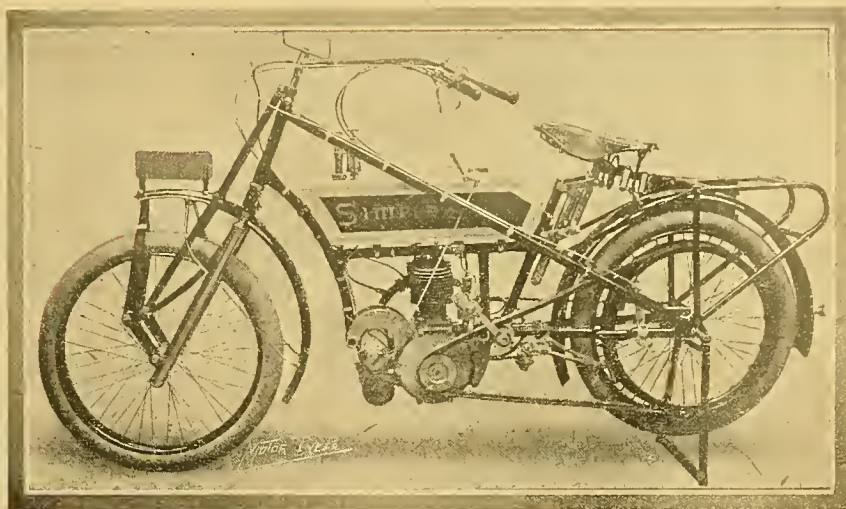
is used, and the chamber carries a couple of jets diametrically opposite each other. Below each of these is a small hole in the bottom of the carburetter box, which serves to admit a supply of air. As the sleeve throttle is opened the area of these air ports is increased in unison, whilst for close adjustment a hand-controlled port is arranged on the side of the mixing chamber. The clutch on engine-shaft is also worthy of notice, as it is another item which the English agents do not supply.

**New Hudson (France).**

SOCIÉTÉ FRANÇAISE DE BICYCLETTES  
NEW HUDSON, 5, Rue de Sablonville, Neuilly, Seine (Balcony, Stand 13).—The 2½ h.p. and 3½ h.p. New Hudson models in French grey are suitably staged by the French House. Another machine is painted a brilliant canary yellow with black lines. Canoelet side-cars are fitted to two or three of the machines.

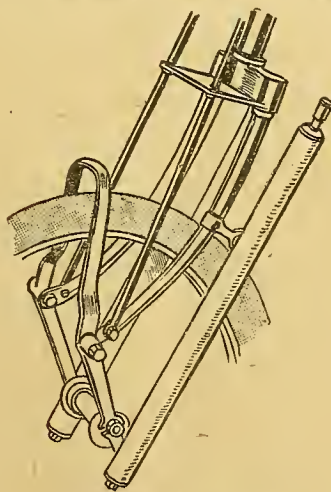
**Simplex.**

SIMPLEX CYCLE CO. (AMSTERDAM), 7, Rue N. D. de Lorette, Paris (Salle T, Stand 13).—The sole example of Dutch motor cycle manufacture in the exhibition is a rather strange-looking machine. The double top tube of the frame goes from the top of the ball head right to the rear axle. The seat tube carries a springing arrangement for the saddle, and the spring fork is a very elaborate arrangement of tubes and joints with compression and recoil springs enclosed in nickel-plated tubes extending from the centre of the hub to the fork crown. The general design of the frame and



A Dutch mount called the Simplex. It is made in Amsterdam, and has a spring saddle pillar, unconventional frame, and spring front forks.

appearance of the *tout ensemble* will be gathered from the annexed photograph and sketch. The engine is a Fafnir, 84×88, and the carburetter is a B. and B.



Detail sketch of the Simplex front fork, showing the case for the springs.

**Wanderer.**

A. HEROLD, 5, Allée Erasme, Ville-momble, Seine (Salle S, Stand 2).—The Wanderer machines were not at Olympia this year, therefore a short description of the new lubrication method will be of interest. The oil is fed into the crank case by hand pump about every thirty miles to keep up the level of lubricant in the chamber. To circulate the oil to the bearings, there is a small oil pump (see sketch) fastened to the side of the crank case. This returns the oil to the reservoir, when the supply, which is pumped in by hand, is exceeded. From the reservoir the oil passes through a sight feed lubricator and down two pipes enclosed in an aluminium covering. These pipes lead, one to the front, the other to the rear cylinder. There is a valve on the sight feed to regulate the flow of oil.

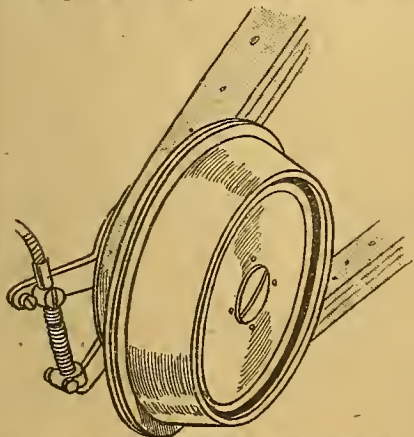
THE SOCIÉTÉ DES ATELIERS D'AVEUGLES (Blind Society), 9, Rue de l'Echelle, Paris.—The motor tandem tricycle on this stand has two saddles. The two front wheels are used to steer, and the rear one to drive. The engine is situated in front of the first rider, and drives by belt. The machine very much resembles a pedal tricycle in appearance, and is on the lines of a sketch suggesting a similar construction published in *The Motor Cycle* of 1903.

**Cycle Car Improvements.**

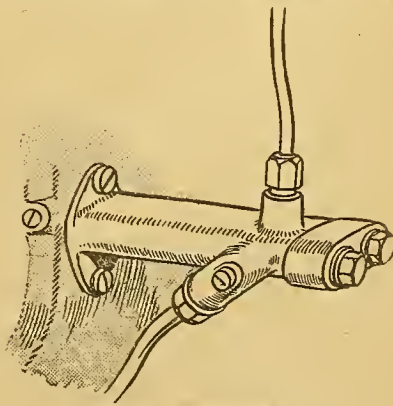
Two cycle cars, both of which have been fully described and illustrated in previous issues, have undergone modifications and improvements.

THE AUTOMOBILETTE. A. COIGNET, 115, Bd. Murat, Paris (Gallery C, Stand 1).—The first transmission of this machine was by chain from engine to cross-shaft, but the latest chassis shown in an unfinished state has a propeller-drive from the same twin-cylinder vertical engine as formerly used, a Huguélet, to a gear box containing a bevel drive and cross-shaft. The bevel gear allows a reverse to be employed, and the final drive from the ends of the cross-shaft is by V belts to belt rims on the rear road wheels.

The single-cylinder Automobilette



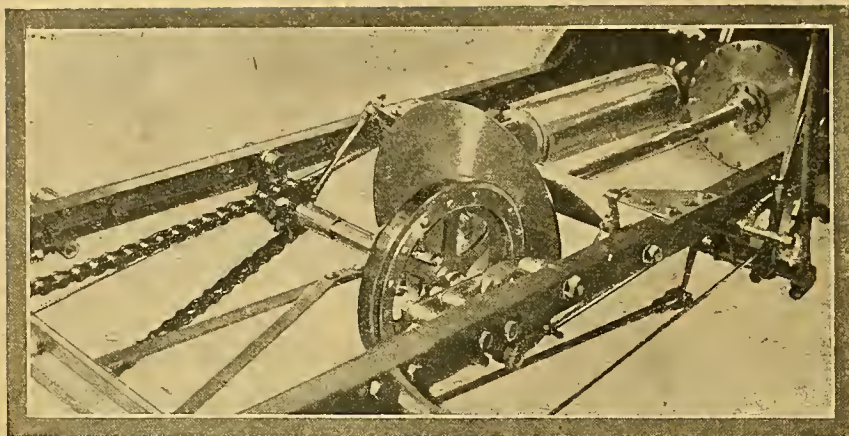
Rose engine clutch fitted to the Moto-Rève engine-shaft.



Oil pump on Wanderer crank case.

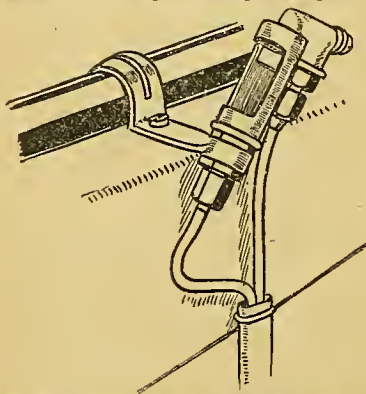


## Paris Show.—



The friction transmission of the Violette cycle car. On the latest model the disc and wheel are situated midway between dash and rear axle, this shortens the chain and dispenses with the jockey pulley.

remains unchanged, except as regards the engine, which is now a Huguelet of the same type as the twin vertical engine referred to in a previous paragraph.



Wanderer lubrication system. The sight feed oiler.

### The Violette Friction-driven Cycle Car.

FRANC ET CIE., 55, Rue Frères Herbert, Levallois, and whose English address is now Violette Cars (England), Temple Chambers, Temple Avenue, London, E.C. This has the friction wheel and disc placed midway between the dash and rear axle, the drive being connected to the engine by a propeller-shaft and to the rear axle by a chain. Formerly the friction mechanism was close to the dash, and the transmission from that point to the rear was by a rather long chain which ran over jockey sprockets by which the chain was adjusted.

### Various Exhibits.

The following machines were exhibited by various wholesale and retail agents. We indicate the positions of the stands and give the agents' names and addresses for the benefit of foreign readers of *The Motor Cycle*, but any further description of the machines is unnecessary, as they have all appeared in these pages within the last few weeks.

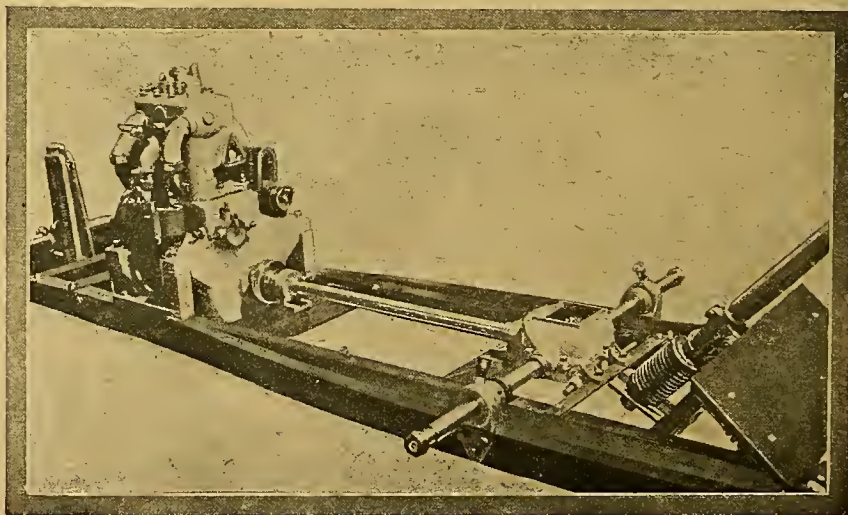
A. AND L. LEVY, 27, Rue St. Ferdinand, Paris (Salle I, Stand 1.)—Calthorpe motor cycles and Garrard-Maxfield sidecars.

LONGUEMARE FRERES, 12, Rue du Buisson-St.-Louis, Paris (Salle N, Stand 6).—One  $3\frac{1}{2}$  h.p. motor bicycle with Sarolea single-cylinder engine. This was exhibited to show the control and fitting of the automatic Longuemare carburetter for motor cycles.

W. H. DOREY, 14, Rue Torricelli, Paris (Salle G, Stand 10).—The Dorey 50° twin cycle car engine, 85 × 95 mm., has side by side and very large inlet and exhaust valves. Both are interchangeable, and no less than 2 in. diameter at the head. The carburetter is a Claudel and the magneto a Bosch; the latter is gear-driven by an enclosed train of pinions situate across the front of the crank case.

### Hugo Storr.

HUGO STORR, 17, Rue Saussier-Leroy, Paris (Salle S, Stand 4).—N.S.U. and Rudge-Whitworth machines, for which this firm is agent for France. The models are exactly the same as those exhibited in England. The Rudge came in for special attention, doubtless due to the number of Continental wins to its credit this year.



The chain drive of the Automobilette cycle car is now replaced by a propeller-shaft and bevel gear providing a reverse. The final drive is by two V belts.

### Triumph.

AUTO VELO Co., 23, Avenue du Roule, Neuilly-sur-Seine (Salle S, Stand 3).—A little crowd surrounded the stand on which Triumphs were displayed whenever we passed near to it. The Triumph is well known and feared among French competitors in races and trials, and has wrested some of the best prizes from the French this year and last.

### Tyre Firm's Display.

The British motor tyre industry is represented by the North British Rubber Company, 27, rue Jean Jacques Rousseau, Paris, and the Palmer Tyre, Ltd., 152, Avenue Malakoff, Paris, who exhibit the machine which is used in the construction of the Palmer cord fabric.

The Dunlop Rubber Co., Ltd., 4, rue du Colonel-Moll, Paris, have a stand in the balcony, as also the Paris Continental Tyre Co.'s house, of 146, Avenue Malakoff, the French Goodrich Co., 221, Boulevard de Valmy, Colombes, Hutchinson Co., 60, rue St. Lazare, Paris, and last, but not least, the Michelin Tyre Co., of Clermont Ferrand.

### Model Wind Waggon.

One or two very neat little model motor cars are on exhibition. The one on the Cadillac stand is an exact reproduction of a larger car, and is propelled by a Cadillac electric motor used for the self-starter. The little vehicle will run an hour on one charge of electricity at a speed of about ten miles an hour. Another has a small air-cooled engine at the rear of the two-seated body, and drives an aeroplane propeller.

The propeller, which is about two feet diameter, is enclosed in a circular wire screen. We hardly know whether a juvenile would be allowed to drive such a machine on the public roads in France, but, of course, its use in this country would be restricted to private premises in the case of children under fourteen years of age.

Another, called the Baby Auto, has a friction drive, and is offered as a high-class toy for use in large private pleasure grounds.

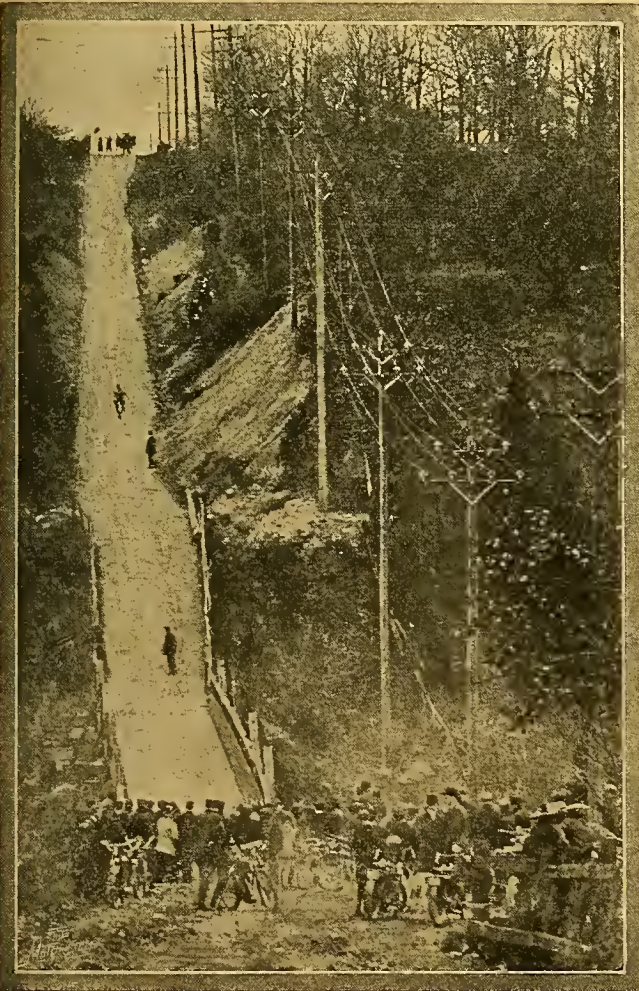


## M.C.C. London to Exeter Run.

## LIST OF ENTRIES.

W. H. Wells (7 Indian sc.)	R. Chesterfield (7 Indian sc.)	W. Pratt (3½ P. and M.)	R. M. Stallings (6 Kruoch)	H. A. Sudfeldt (6 V.S. sc.)
Southcomb May (8 Matchless sc.)	W. H. Bashall (7 Matchless sc.)	W. P. Tippet (2½ Humber)	R. M. Messerby (8 Duo cycle car)	E. Vallis (8 Matchless sc.)
N. O. Scribesby (3½ Rudge multi)	J. T. Bashall (7 Matchless sc.)	H. B. Willoughby (6 Stellar sc.)	O. E. Barham (6 Rex)	E. B. Warr (— sc.)
P. W. Moffat (2½ Douglas)	A. Bashall (7 Bat sc.)	A. C. Evans (5-6 A.C. cycle car)	L. Crowe (8 Round-Jap)	Dr. C. B. Moss-Blundell (6 Annonimate-sap sc.)
E. J. Hancock (3½ Premier)	A. T. Tamplin (9 Matchless cycle car)	W. H. Eggington (3½ New Hudson)	W. L. Slingsby (3½ P.V.)	H. Beal (—)
H. G. Bell (5 F.N.)	J. A. Neumann (6 Rudge sc.)	A. G. Peppercorn (3½ Bradbury)	C. E. Curwen (8 Matchless)	J. L. Love (5-6 A.C.)
F. O. Roberts (3½ Green-Zenith)	C. Percival (2½ Douglas)	T. J. Ross (3½ Triumph)	P. Bonnd (8 Round-Jap sc.)	E. O. Babbington (8 Bat sc.)
A. E. Catt (3½ Triumph)	J. H. Kerr (3½ N.S.U.)	W. Ford (3½ Lington)	A. J. Dixon (10 Singer cycle car)	H. A. Cooper (3½ Bradbury sc.)
H. C. Mills (3½ Regal Green)	P. Grout (—)	A. Adcock (2½ F.N.)	A. J. Mee (2½ Diamond)	E. E. Guest (7 Matchless sc.)
R. C. Davis (5-6 Clyno sc.)	W. B. Gibb (8 Williamson sc.)	R. O. Clark (5-6 F.N. sc.)	L. Cass (9 Trump-Jap sc.)	C. E. Collier (7 Matchless sc.)
H. G. R. Slingo (5-6 Clyno sc.)	W. C. Hemy (5-6 Clyno sc.)	C. D. Wright (3½ Humber)	W. H. Sedford (— sc.)	Adl. Sir R. K. Arbutnot, Bt. (3½ Triumph)
F. Smith (5-6 Clyno sc.)	P. D. Walker (3½ Rudge sc.)	W. H. Elce (3½ Rudge sc.)	H. G. Chester (8 L.M. cycle car)	H. F. S. Morgan (8 Morgan runabout)
C. W. Meredith (3½ Bradbury sc.)	J. C. Haward (6 Zenith sc.)	C. S. Franklin (6 N.S.U. sc.)	J. G. Palling (8 Zenith sc.)	J. Chater-Lea, jun. (8 Chater-Lea sc.)
Harold Karslake (3½ Rover sc.)	S. F. Garrett (3½ Green-Precision)	G. Pitcher (8 Duo cycle car)	Eli Clark (2½ Douglas)	T. E. B. Jourdain (3½ Bradbury)
Hugh Gibson (3½ Bradbury sc.)	W. F. Guiver (3½ Ariel sc.)	O. Hill (4 N. cycle car)	A. V. Sumner (3½ Day-Leeds)	G. W. Marsden (3½ Bradbury)
R. G. Mundy (3½ Triumph)	C. H. Kouwenhoven (3½ Ariel)	F. J. Watson (3½ Swift sc.)	A. B. Wade (3½ Imperial)	H. G. Digby (5-6 A.C. cycle car)
G. Brough (6 Brough)	B. A. Hill (—)	A. P. Hann (10 Pinnaeo cycle car)	F. W. Southern (2½ Sunbeam)	D. Ellis (6 Caltherpe)
R. Rainshaw (8 G.W.K. cycle car)	H. P. Robertson (2½ Premier)	R. Holloway (3½ Premier sc.)	S. T. Tessier (6 Bat sc.)	V. H. Barnard (3½ Bradbury)
R. E. Clark (3½ Rudge)	Robertson Brown (Crouch cycle car)	F. De la Hay (2½ Sunbeam)	G. Featherstonhaugh (3½ Rover)	A. G. Cocks (2½ Connaught)
R. E. Charlesworth (6 Zenith sc.)	R. E. Lucy (3½ Rudge)	N. C. Dear (3 2-str. Connaught)	M. A. J. Orde (3½ Rover)	G. Griffiths (8 Zenith)
H. Johnson (3½ Triumph)	F. Begley (6 Enfield sc.)	R. M. Aston (3½ Bradbury)	C. T. Newsome (3½ Rover)	L. H. Fox (3½ Hampton)
P. Newbold (5-6 Zenith sc.)	D. S. Parsons (G.W.K. cycle car)	G. E. Cuffe (7 Indian sc.)	D. H. Noble (3½ Rover)	A. H. Radcliff (3½ B.S.A.)
P. Phillips (2½ Douglas)	J. A. Hoult (3½ P. and M. sc.)	A. G. Nott (8 Matchless sc.)	H. E. Davison (3½ Kerry)	E. R. Cass (10 Gordon cycle car)
C. M. Keiller (8 G.W.K. cycle car)		A. J. Stevens (6 A.J.S. sc.)	W. Cooper (8 Humberette)	E. B. Dickson (7 Indian)
G. L. Drew (3½ Premier)		J. Stevens (2½ A.J.S.)	F. A. McNab (3½ Ariel)	J. Pechey (3½ Premier)
		H. Stevens (6 A.J.S. sc.)	J. S. Holroyd (3½ Moto-sacoché)	
		W. Hanson (5 A.J.S.)	G. P. Howe (—)	
		E. J. Webster (6 Zenith sc.)	F. W. Carrier (3½ Imperial)	
		W. E. Roots (—)	S. J. Saunders (3½ Rudge sc.)	
			M. Geiger (3 V.S. sc.)	

It must be noted that the return journey has been made more difficult, and the hilly road from Sidford via Lyme Regis to Dorchester will be followed. The following timetable will allow interested motor cyclists to watch the competitors pass through the more important places. Leave Exeter 6.30 a.m., Sidford 7.17, Lyme Regis 8.1, Bridport 8.28, Dorchester 9.12, Salisbury 11.4, Basingstoke 1.52 p.m. The first man is due at Hounslow at 3.40 p.m. Most riders will therefore finish in daylight.



NOT BROOKLANDS!—THE TORONTO M.C.C.'s HILL CLIMBING CONTEST.

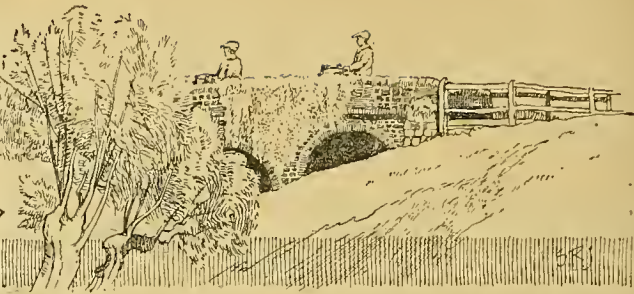
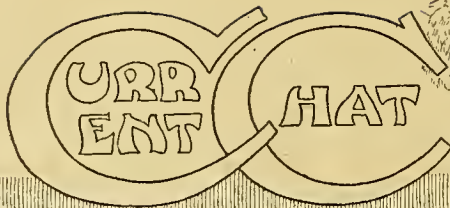
This hill—said to be the steepest in Toronto—is located on Bathurst Street, about half-mile north of St. Clair Avenue. The gradient is 1 in 6½. The numerous bumps and ruts on the hill caused a great many spills and several of the machines were unable to make the ascent.



AEROPLANE COMES TO GRIEF IN LONDON.

On Friday an aeroplane came down on to the roof of a house in Derwent Road, Palmers Green, North London. A large hole was made in the roof, but the pilot, M. Mario, who was flying from France to London, and at the time of the accident was making his way to Hendon, escaped injury. He was eventually rescued by means of a ladder.



**TIME TO LIGHT LAMPS.**

Dec. 12th	...	...	4.49 p.m.
" 14th	...	...	4.50 p.m.
" 16th	...	...	4.50 p.m.
" 18th	...	...	4.50 p.m.

**A Business Trip in Canada.**

W. W. Douglas, the well-known Douglas competition rider and son of the proprietor of Douglas Bros., is leaving for Canada on the 26th inst. per the R.M.S. *Oceanic* from Southampton. He will be accompanied by J. B. Clarkson, of Wellington, New Zealand, who will travel with him as far as Victoria, British Columbia.

**Much Safer Roads.**

In view of the recent outcry in connection with motor accidents in the Manchester district and the formation of the National Road Guards (self-styled) by certain members of the Manchester centre of the C.T.C., it is particularly interesting to note that Mr. R. Peacock, the chief constable of Manchester, has stated that more accidents, fatal and otherwise, have been caused by trams than by motors, in spite of the fact that 5,000 driving licences have been issued in the city. He also said that undue prominence was given to motor accidents in the daily press.

**Sound Advice Concerning Cycle Cars.**

At the annual dinner of the Triumph C.C. last Friday, Mr. M. J. Schulte, who presided, gave his opinion of cycle cars. He said that lately a new baby had come into the motor line, and that was the cycle car, but he was afraid that it had had rather a premature birth into the world. He believed that the trade was not generally ready for it, and he thought that 1913 would see a great many failures in this line. When one took a walk round the recent Show one found that many of those small cars were in a very crude and experimental stage. The movement had come too rapidly, and he hoped that everybody connected with the trade would move slowly and cautiously or else they would find that it had come before its time, and would die out again.

**Lantern Lecture in Coventry.**

Members of the Rudge-Whitworth C.C., Coventry, listened to an interesting lecture on motor cycling delivered by Mr. V. A. Holroyd one evening last week. The lecturer was assisted by a quantity of lantern slides depicting Rudge motor cycles in course of construction at the works and in use on road and track.

**French Hour Record.**

On Saturday afternoon last, at the Parc des Princes Track, Paris, Lombard attacked the French hour record for motor cycles of 500 c.c., and succeeded in beating Grapperton's previous performance of 85 kilometres 320 metres by 480 metres, covering 85 kilometres 800 metres. This distance equals 53.28 miles. The English hour record, made by G. E. Stanley, October 15th, 1912, on a 500 c.c. Singer, stands at 67.42 miles, a difference of 14.14 miles. Lombard rode an Albatross.

**Air-propelled Motor Cycles.**

Concerning the article in the current issue, no less an authority than Mr. S. F. Edge recently stated that he felt sure that the air-propelled motor car had a great future. Of course, the same remarks apply to motor cycles in a marked degree on account of their lighter weight. Mr. Edge does not suggest that screw-propelled cars will come into use in populous countries, but in wild, rough, and open areas.

A propeller-driven motor cycle is not new, nor is it new applied to a cycle car. A 7 h.p. twin-cylinder motor bicycle some years ago attained a speed of 50 m.p.h. on the road, the tests being made in connection with the form of aeroplane propeller used. We illustrated a Beacon cycle car with a propeller at the rear in our Passenger Issue of November 14th.

**Hill-climbing in Australia.**

Some months ago a well-known rider achieved the feat of climbing the famous Oberon Hill, at the Jenolan Caves. On a recent Sunday twenty-five members of the Sydney Motor Club, who selected this way to proceed to Yetholme, successfully ascended this hill on full touring machines. The gradient of the hill is rather severe, as it rises 1,900ft. in three miles, and there are bends to negotiate. Norman Saunders, one of the party, mounted on a 3½ T.T. Bradbury, with a 5 to 1 single gear, put up a very creditable performance in riding from bottom to top in seven minutes. Alf. Foy, on a 7-9 Peugeot and sidecar, also successfully ascended the hill. He has the honour of being the first sidecarist to climb the hill.

**A.A. and M.U. Notes.**

The Association learns that the road from Helmsley to the top of Sutton Bank, via Rievaulx and Scawton, is not now suitable for motor traffic. There is a much better road via Sproxtun and Waterloo Lane. Members are advised to use the latter, and proceed from Helmsley over the Rye, and then take the first turn to the right (near the Nelson Gate leading to Duncombe Park).

**SPECIAL FEATURES:**

**PARIS SHOW.**  
**PASSENGER MOTOR CYCLES.**  
**MUDGUARDING.**

**SPEED LIMIT.**—An application has been lodged for a ten miles per hour speed limit for certain portions of the Thame Road and Aylesbury Road, Duke Street, High Street, and Bell Street, at Princes Risborough (Bucks). Objections must be lodged on or before December 23rd. Therefore members able to furnish evidence or information bearing upon this application, should communicate their views to the secretary as early as possible.

**MISLEADING FLASH LAMPS ON HIGHWAYS.**—Complaints are coming in from members regarding the flashing of electric pocket lamps in front of cars and motor cyclists by pedestrians. In connection with the complaints received concerning this practice at Swindon, it is satisfactory to note that the Association has obtained the hearty co-operation of the police authorities in suppressing it.

**The Gometz-le-Chatel Hill-climb.**

The following English motor cyclists have signified their intention of crossing over to France this week-end for the Gometz-le-Chatel hill-climb next Sunday: S. T. Tessier (Bat), A. J. Dixon (Singer), G. Griffiths (Ariel), T. M. Rogers (Matchless), W. H. Bashall (machine not stated). Sidecars: F. W. Barnes (Zenith) and W. Pratt (P. and M).

The British contingent leave Charing Cross to-morrow (Friday) evening at nine o'clock.

**New Main Road out of Portsmouth.**

A meeting of influential inhabitants and representatives of outlying districts was held at the Portsmouth Town Hall last Monday evening, the Mayor (Alderman Corke) presiding. A resolution was unanimously passed in favour of a new wide road being constructed out of the borough of Portsmouth into the county of Hampshire. The Corporation of Portsmouth has been asked to take up the proposal.

**Nice-Turbie Hill Climb.**

This event is to be decided on December 15th. The mountain pass is over four and three-quarter miles in length, and is full of sharp turnings. The motor cycle climb will comprise two classes, those who compete for a club challenge prize and a purely speed event. To be eligible for the former machines must be fully equipped. The following French machines have been entered: 3 h.p. Moto-Réves, 2½ h.p. Peugeots, 3½ h.p. Zedels, 2½ h.p. Terrots, and 3½ h.p. Magnat Debons.



**Repairing Brooklands Track.**

Repairs are in progress on Brooklands track, the stretch near the Members' Bridge receiving attention.

**The Auto Cycle Union Silencer Trials.**

The Auto Cycle Union has invited a Local Government Board official to witness the silencer trials, which are to be held in January.

**From Overseas Readers.**

Our postbag last week brought many interesting letters and photographs from readers scattered all over the world. A selection of the communications appears in the current issue.

**Bravo, Bobby!**

A well-known rider recently arrived in a populous part of London in the wee sma' hours with no lamp. After daringly running the gauntlet, he finally found himself cornered. No escape being possible, he brazenly asked the officer to lend him his lantern while he went to the nearest garage to borrow one. Much to his surprise his request was granted. We echo Bravo, Bobby! may you have speedy promotion!

**British Imports and Exports of Motor Cycles.**

The value of imports and exports of motor cycles for the month and eleven months ended November 30th for the last three years is given in the following tables:

**IMPORTS.**

Month ended November 30th.

	1910.	1911.	1912.
	£	£	£
Motor cycles ...	2,101	2,216	2,180
Parts thereof...	4,771	7,177	12,248
<b>Total ...</b>	<b>£6,872</b>	<b>£9,393</b>	<b>£14,428</b>

From this table it will be noticed that while the imports of parts have increased by £5,071, the motor cycle imports have decreased £36.

Eleven months ended November 30th.

	1910.	1911.	1912.
	£	£	£
Motor cycles ...	42,756	39,955	40,436
Parts thereof...	51,803	62,024	147,110
<b>Total ...</b>	<b>£94,559</b>	<b>£101,979</b>	<b>£187,546</b>

**BRITISH EXPORTS.**

Month ended November 30th.

	1910.	1911.	1912.
	£	£	£
Motor cycles ...	15,309	46,113	60,581
Parts thereof...	2,816	11,367	19,299
<b>Total ...</b>	<b>£18,125</b>	<b>£57,480</b>	<b>£79,880</b>

The value of our exports of motor cycles and parts is still steadily assuming large figures. The total exports for the eleven months ended November 30th of this year, as the following table shows, are over double the amount of the corresponding period in 1911:

Eleven months ended November 30th.

	1910.	1911.	1912.
	£	£	£
Motor cycles ...	108,655	244,406	481,379
Parts thereof...	34,879	67,935	170,566
<b>Total ...</b>	<b>£143,534</b>	<b>£312,341</b>	<b>£651,945</b>

**FUTURE EVENTS**

- Dec. 14.—Herts. County A.C. Open Quarterly Trial.  
 „ 21.—Sutton Coldfield and Mid-Warwickshire A.C. first Cycle Car Trial.  
 „ 26.—N.W. London M.C.C. Open Winter Run to Gloucester and Back.  
 „ 27-28.—M.C.C. Annual Winter Run to Exeter and Back.  
 1913.  
 Jan. ..—A.C.U. Open Silencer Trial.  
 „ 18.—North Middlesex M.C.C. Open Trial.

**Another Australian Record.**

Last month at Melbourne, J. Booth, holder of two championships, attacked the one hour Australian track record, and although the three-lap track was not in the best condition, he covered 52 miles 201 yards. His machine was a  $3\frac{1}{2}$  h.p. B.S.A. shod with Dunlop tyres.

**The Speed of Motor Cycles.**

Our attention has been drawn to a suggestion made by the Coroner during the inquest, at Truro, on a motor cyclist, who met his death by colliding with a car which came out of a side road, that it was necessary "to keep a motor cycle running at 30 m.p.h. in order to keep the engines going properly." This is, of course, a misstatement, and unfortunately there appears to have been no one present sufficiently conversant with the subject to contradict the impression conveyed by this suggestion. It would be a great pity if the idea became general, for it is entirely erroneous, as all our readers know, and it is to be regretted that any person in authority should, without exact knowledge, have given expression to such a notion, for the man in the street will swallow anything, especially if it happens to be somewhat to his taste.

**Roads Improvement Association.**

On and after the 20th December the headquarters of the Roads Improvement Association (Incorporated) will be transferred to 15, Dartmouth Street, Westminster, London, S.W.

**Mystery of Motor Cycles.**

We read in a daily paper that the Kent police are investigating a curious case of three motor cycles. A few days ago a motor cycle was left at an inn near the canal at Gravesend by a stranger, who did not return. On Thursday two motor cycles were discovered in the canal in the same locality. Both are said to be in good condition.

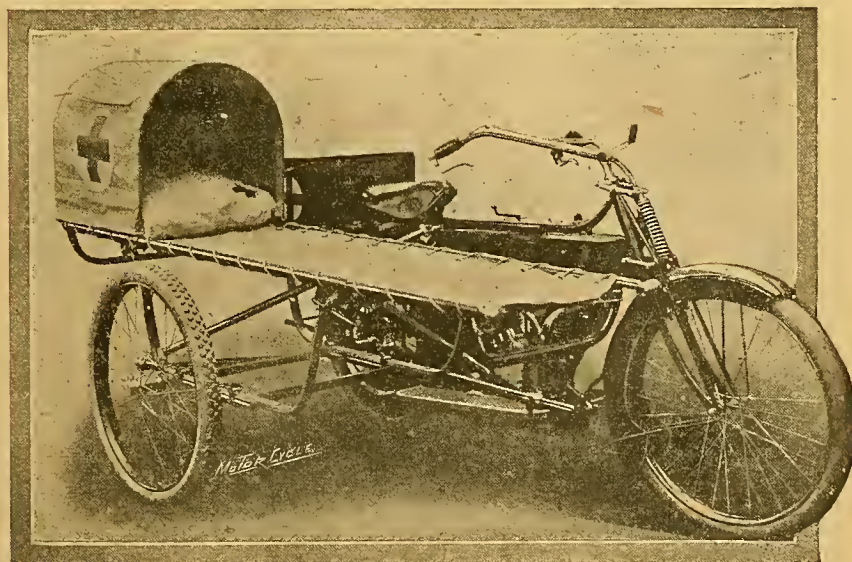
**French List of Motor Cycles Registered.**

The following table showing the numbers of motor cycles in use in Great Britain, France, and Germany from 1907 to 1912 was published recently by our French contemporary, the *Auto*. We do not vouch for the accuracy of the figures, but reproduce them as an item of interest:

Year.	France.	Germany.	Great Britain
1907 ...	35,111	15,954	34,664
1908 ...	27,473	19,808	35,247
1909 ...	27,215	21,176	35,784
1910 ...	28,840	22,379	36,242
1911 ...	27,061	20,705	48,857
1912 ...	28,641	20,157	71,020

**Motor Cyclist Despatch Riders.**

We are informed that the Royal Engineers, Territorials (headquarters, 12, Palmer Street, Westminster, S.W.), have lately formed a motor cycle section. There are at present ten vacancies in the troops as despatch riders. The corps consists of wireless, cable, and air line telegraph units. Intending members should preferably be engineers or telegraphists, though this stipulation is not absolutely enforced. Allowance and conditions of service are set forth by "Celeriter" in our issue of October 17th (page 1170). Applications should be addressed to the headquarters.



A sidecar ambulance, patented by the French manager of the Motosacoche firm and exhibited on their stand at the Paris Show.



# A LECTURE ON CYCLE CARS.

ON Saturday last, at the Imperial Hotel, Mr. R. Vernon C. Brook, A.M.I.E.E., read a paper on "Cycle Cars" before members of the Birmingham M.C.C.

He opened his remarks by stating that when he agreed to lecture on this subject he had no idea of how many machines there would be to deal with. Owing to their mushroom growth he did not intend to deal with each one individually, but would be content to deal with each class.

The motoring millennium had not yet arrived, and in this respect the British public, which has been bolstered with this idea by the press, was doomed to disappointment.

In Mr. Brook's opinion the present cycle car is in no way the descendant of the old Ariel and De Dion type quad, but a modern growth which originated in the Bedelia and Dew spider quad. He proceeded with the history of the cycle car (to which name, by the way, he particularly objects, preferring runabout or carette), and stated that at the recent Show, out of thirty-six makes, ten were water-cooled.

American competition will, he thinks, to some extent, affect manufacturers as well as the demand, but the American car cannot compete with the cycle car for running costs.

Probably runabouts will finally oust the heavy twin and sidecar, but will not affect  $3\frac{1}{2}$  h.p. and  $4\frac{1}{4}$  h.p. combinations.

Two types of cycle car will probably remain. The miniature car and the belt, chain, or friction driven models, mainly on motor cycle lines.

Mr. Brook has faith in the armoured wood frames, transverse semi-elliptical springs, steel wheels, and a four-cylinder water-cooled engine. The design of steering, gears, reverse gears, tyres, and body work, was touched upon and dealt with in a sound commonsense manner, as also were the merits of three and four-wheelers and tandem or sociable seating.

With regard to the motor cycle type he recommended a silent chain drive to the counter-shaft and belt drive thereafter on the lines of many well-known present day cycle cars. He suggested the fitting of a flywheel on the counter-shaft and of a crossed belt for the reverse to come into action when the axle is in its most forward position. Nearly all forms of cycle car transmission were dealt with, and special attention was drawn to the bad practice of fitting an auxiliary flywheel and clutch to engines not designed for the purpose. Torque rods were mentioned as an important point which has not received the necessary attention.

Mr. Brook estimated the running costs of an 8-10 h.p. runabout to be 40% more than a single-cylinder sidecar combination.

Altogether the subject was dealt with very fully, especially considering its scope and the limited time at the disposal of the lecturer. A discussion followed.

## The Discussion.

Mr. F. E. Baker, who occupied the chair, opened the discussion by first thanking Mr. Brook for his excellent paper. He considered that Mr. Brook had covered the subject comprehensively. He did not agree with the lecturer that the early motor cars, such as the Bollée, De Dion quad, etc., were not cycle cars; on the other hand they were the first real cycle cars. Mr. Baker considered that the cycle car movement was likely to cause a revolution in road transit far greater even than the most optimistic mind could contemplate. He did not agree with the lecturer in his remarks on gear-driven versus friction and belt-driven machines; he considered the question of relative costs of the two types was not so much one of labour charges as capital charges, and he thought that, given sufficient capital, it would be easy to produce gears at a price that would compare favourably with the belt and friction drives. Mr. Baker was sorry there was a prejudice against drum and cable steering, as he considered this type quite satisfactory and cheap to produce. Single-cylinder engines of big cubical capacity would, in his opinion, be the solvers of the cycle car engine proposition.

## Air v. Water-cooling.

The Chairman said he hoped there would be a discussion on the merits of air versus water-cooling. Personally he considered "mechanical cooling," as he preferred to call air cooling, quite efficient up to a certain point.

Mr. E. W. Winckle considered the 5-6 h.p. single-cylinder quite efficient for cycle car work, provided the engine speed

was kept up. He thought that with a single-cylinder engine it would be possible to keep prime costs down. He considered a reverse essential on all cycle cars, and mentioned that at least one manufacturer was contemplating a three or four-speed motor cycle gear box with a reverse for side-car work.

Mr. F. Lewis said he had had 4,000-5,000 miles' experience with a Morgan three-wheeler, and he could safely say that with care there was no risk of serious skidding to be feared through having three wheels. With regard to water cooling, he mentioned that he had once covered five or six miles on the low gear with his air-cooled engine without experiencing the slightest difficulty through overheating. A reverse might be useful at times was the conclusion he had come to after driving in all kinds of traffic.

## The Earliest Cycle Cars.

Mr. H. S. Bilbe mentioned the names of several early machines which the lecturer had not spoken of. He quoted the De Dion Spider, the V.S., the O.T.A.V., the Chater-Lea carette, and others. The four year old Chater-Lea carette with Sarolea engine had a combined belt and chain drive, and thus anticipated some of the present day models by a considerable margin. He considered the belt or chain drive on to one wheel quite satisfactory, and by this means a differential was unnecessary. He rather wondered whether the lecturer had forgotten the early 6 h.p. Rover, which was, in his opinion, the first real cycle car. He did not agree with the lecturer that side doors were not necessary. The tandem machine had one strong point against it, inasmuch as the narrow track would not fit the track of other road vehicles, therefore it was impossible to take advantage of the best road surface. He considered that automatic lubrication should be standard on all cycle cars.

Mr. Chalmers (B.S.A.) did not consider that American competition was a serious factor, for he thought the depreciation on an American car might be put down at at least 50% per annum, whilst depreciation on a British built cycle car would not exceed 25% per annum. He had had a good deal of unsatisfactory experience with a tandem cycle car of the belt-driven type. He considered that makers should pay more attention to the lubrication question. With efficient lubrication the air-cooled engine would give much better results than it does even now.

Mr. Biggs (Humber, Ltd.) said that his experience of worm drives had not been satisfactory. He considered the worm drive had far less "go" in it than a bevel drive. An expensive worm gear might give better results than a cheap bevel gear, but he considered, quality being equal, that the bevel drive was most satisfactory.

Mr. Ivy-Rogers (New Merlin Cycle Company) fully agreed with the lecturer that the four-cylinder water-cooled engine would ultimately become universal in cycle car practice. The absence of vibration and smoother running would give longer life to the whole vehicle. He agreed that the V type twin would probably be standard for a year or two. Water cooling was, he considered, essential. He did not agree with the lecturer on the transmission question. He considered that the combination of shaft from engine to gear box, and chain from gear box to differential, would become universal, thus obviating either bevel or worm drives.\* This system would be considerably cheaper than if a bevel or a worm was employed. He did not agree that side doors were not necessary, and pointed out that a saving of a few shillings as quoted by the lecturer was not worth consideration.

Mr. H. C. Pickering quoted the report given in the current issue of the *B.A.C. Journal* regarding the test of a friction driven car; he pointed out that the majority of the troubles experienced during the trial were due to slipping friction drive due to wet on the friction wheels.

## Author's Reply.

In replying to the discussion, Mr. Brook said how glad he was that his paper had brought forth such a large amount of discussion. It was always a lecturer's object to make his paper as controversial as possible in order to encourage a good discussion, and, having attained that end, he felt he had been rewarded with some measure of success. He agreed with Mr. Baker that the cycle car movement was likely to assume enormous dimensions in the near future.



**Lecture on Cycle Cars.—**

Replying to the question raised by one or two speakers regarding satisfactory single-cylinder engines for cycle cars, the author did not consider it possible to get a balance in a big single-cylinder engine that would give as smooth and flexible running as it was possible to obtain with a twin-cylinder engine. A big heavy flywheel was possibly a partial solution of the difficulty, but this added extra weight to the car if it was to be of sufficient dimensions to overcome the vibration.

In reply to Mr. Winckle, the author stated that he agreed that a reverse would be very nice on all cycle cars, but it would be possible to get along on the cheaper machines without it, and it was by doing without such luxuries that the cheap vehicle could be produced.

In reply to Mr. Lewis, the author pointed out that he had admitted in his paper that it was possible to drive a three-wheeler on bad roads without risk of skidding provided the speed were kept down to 8-10 miles an hour when cornering or crossing tram lines or turning out of the line of travel. He would like to add that a steel-studded single driving wheel was also apt to skid on dry granite setts.

Replying to Mr. Bilbe and also to one or two other speakers on the subject of side doors, the author stated he was not thinking so much of the saving in cost of a body

without side doors as the greater satisfaction to be obtained from a body which was solid all through.

On the lubrication question, the author agreed that automatic lubrication would ultimately become standard; in the meantime the semi-automatic hand-operated pump was a very good makeshift.

**Transmission.**

The author pointed out that he had quoted the shaft and chain drive transmission in his paper, and agreed that this system might obviate the worm and bevel drive\* and become very common.

On the subject of carburettors, he believed the automatic carburettor would become universal.

Regarding the friction-driven car tests quoted by Mr. Pickering, the author thought it only fair to point out that the car under test weighed close on 11 cwt., and in addition was probably heavily loaded with luggage, so that it would be unfair to judge the average friction-driven cycle car which weighed 50% less on these figures; further, the car under test was evidently insufficiently shielded from the wet.

[\*Unless the engine and gear box are set across the frame, in which case there is usually little room for a shaft, this form of drive does not obviate the use of a worm or bevel.—Ed.]

**M.C.C. Eleventh Annual Dinner.**

**T**HE Motor Cycling Club has reduced the club dinner to a fine art. At the M.C.C. dinner last Saturday the speeches were brief, to the point, and brought down to the smallest possible number, and the distribution of prizes, which formerly took up an inconsiderable time, occupied only a quarter of an hour, so most of the period between the loyal toast and "God Save the King" was filled up with the very excellent musical programme, for the organisation of which Mr. Ernest Cheny, a member of the club, was responsible. There is no little doubt, therefore, that the M.C.C. is fully conversant with the running of social events.

The dinner took place in the Renaissance Saloon at the Royal Adelaide Gallery, King William Street, W.C. Mr. Charles Jarrott, president of the club, occupied the chair.

After the Chairman had proposed the health of His Majesty the King, Mr. Robert Todd, chairman of the Auto Cycle Union, proposed the toast of the M.C.C. The club, he was glad to say, went on making history and doing things. Like one of the Balkan States, it stood alone. That state had now found the benefits of union with the other states, and he, as chairman of the A.C.U., hoped that soon the M.C.C. would follow this example. In view of the present developments in the motor cycle world, he wondered what sort of motor cycle car the members of the M.C.C. would go in for, and what would happen to it afterwards. He then referred to his early experiences with the oldest form of cycle cars, the ancient quads, one of which he had driven for 10,000 miles.

Mr. Southcomb May (secretary M.C.C.), in response, made a very brief speech. The actual membership, he said, was 445, and with members to be elected at the next committee meeting it would soon approach 500.

**Presentation of Prizes.**

Mrs. Charles Jarrott then presented the prizes, among which the most important were the Jarrott Cup, won by Harold Karslake (familiarily known as "Oily") with an error of only 52s. over the whole distance from London to the Land's End and back; the M.C.C. London to Edinburgh Cup by George Brough, for the third time in succession, so that the cup now becomes his absolute property; and the team prize cup presented by *The Motor Cycle*, which has been won by four different clubs, and this year by the Nottingham M.C.C.

Mr. Robert Head (chairman M.C.C.) announced that Mr. Arturo Mescini, proprietor of Pagni's Restaurant, and a member of the club, had offered a valuable prize for a competition, if held in Switzerland in August, and undertook to entertain for two days all who took part at Lugano. (This matter will, of course, come up for consideration by the M.C.C. committee.)

Mr. Head also proposed a vote of thanks to Mrs. Jarrott for presenting the prizes, and announced that she had offered prizes for the cleanest and driest men to arrive in Edinburgh on the occasion of the famous Whitsun run (cries of "Here's a chance for 'Oily'"), which she herself would judge.

Mr. B. Mariani, in proposing "The Visitors and Press," mentioned that it had been said that the Club was falling away on the social side, but he was pleased to see that by the attendance at the dinner this was not so. He was extremely gratified that so many ladies had put in an appearance. Among the visitors he mentioned Major Lloyd and the many valuable members of the press whom the M.C.C. counted as its friends.

**Brooklands' Bumps.**

Major F. Lindsay Lloyd, in reply, said he had some difficulty in responding for the Press, but on behalf of the members of that profession he thanked the M.C.C. for always providing plenty of "copy." He thanked the last speaker on behalf of the ladies, and concluded by hoping those who rode on Brooklands tracks would survive its bumps. (Here a noisy party in the far off corner of the room sang "We don't want to go to Brooklands Track, to Brooklands Track, 'cos if you make a noise they'll send you back, etc.," and the "Galloping Major," much to the amusement of that gallant officer.)

Mr. L. A. Baddeley, in proposing the health of the "Chairman," said the Club ought to be thankful for having a "live" president, and spoke of the splendid interest Mr. Jarrott took in all the important competitions, how he turned up at the start of the Edinburgh run and drove through with the competitors, at the start and finish of the winter run, and at the start and finish of the Jarrott Cup run, wishing every starter the best of luck, and giving every finisher a cordial welcome.

Mr. Jarrott, in reply, said he was pleased at the good fellowship and good feeling which prevailed, and he hoped the Club would always uphold the ideal of sport. Touching the cycle car, this, he said, was no new type of vehicle. It was at least ten years old, but the earlier types were not built with the knowledge prevailing at the present day. The cycle car must go through many trials and tribulations before it reaches the perfection the present day motor cycle has attained. He, however, looked on the movement with interest, and thought it had possibilities. He trusted that those present would remember that they were *the Motor Cycling Club*, and would maintain that position, and keep the sport of motor cycling before them for all time.

The proceedings concluded with the singing of "Auld Lang Syne."



## The Cycle Car Club Opening Meet.

THE opening meet of the Cycle Car Club took place at the Hut Hotel, Wisley, that comfortable and greatly appreciated hostelry on the Portsmouth Road, midway between Cobham and Ripley. The sun did not shine on the first event the club ever organised. Instead he hid his face behind dreary clouds and a misty rain fell, of which those in the less protected vehicles got the full benefit. We were given a seat in the new Sherwyn cycle car, a most comfortable vehicle, with ample seating accommodation, well sprung and equipped with hood and screen and dickey seat. Mr. Sherwell was at the wheel, and Mr. Selwyn rode behind. Our photographer had a most successful run down on a Duo driven by Mr. Messerby, which took all hills on top speed. The meet was timed for 1.30 p.m., but, owing to the non-arrival of Mr. Greenhill, who experienced carburettor trouble, it was nearly 2 p.m. before lunch was served. Altogether twenty-two members sat down at the tables and fifteen cycle cars put in an appearance. These consisted of Duos, G.N.'s, G.W.K.'s, Humberettes, a Sherwyn, a Bedelia, an Averies, and a Parnacott. The latter

vehicle was a distinct departure from standard practice. It is driven by an air-cooled F.N. motor cycle engine set transversely in the chassis and situated well to the front. The power is transmitted by two chain to the counter-shaft, and thence by two more to the differential. These chains are all enclosed. The chassis is suspended on double transverse springs fore and aft, and should be most comfortable. The engine can be started from the driver's seat. This was the first appearance of the Parnacott in public, and a detailed description of it will appear shortly in these pages.

The leading lights of the Cycle Car Club were present, and among these may be mentioned Messrs. Glyn Rowden (chairman) and the joint secretaries "G.O.K." Thomas and Osmond Hill. The Rev. E. P. Greenhill duly arrived, and after lunch those who had leisure were entertained by him at his house at Walton-on-the-Hill, near Epsom. Several troubles were experienced between London and the Hut, but as this was an informal meet we refrain from mentioning them in detail.



General view of the first cycle car meeting at the Hut, Wisley, last Saturday.

## CLUB NEWS.

### Streatham and District M.C.C.

On January 4th, 1913, the annual dinner will be held at Holborn Restaurant, at 7 p.m.

### Southampton and District M.C.C.

The second annual dinner took place on the 4th inst. at Scullard's Hotel, fifty-eight members and friends being present. This was followed by music and the presentation of prizes.

### Kingston and District M.C.C.

Between sixty and seventy members were present at the first annual dinner held on the 3rd inst. at the Kingston Hotel. This was followed by the presentation of prizes.

### Manchester M.C.

As usual the above club's annual dinner and prize distribution, held at the Albion Hotel, Piccadilly, Manchester, last Friday evening, was a most enjoyable and well attended gathering. In responding to the toast of "The Visitors," Mr. R. Peacock, the Chief Constable of Manchester, as a leading guest, stated that over 900 motor cycles had been registered at the Manchester Town Hall this year, and over 5,000 driving licences had been issued. He deplored the outcry as to motor accidents, and said too much was made of them and undue prominence given to them, while accidents due to other vehicles were ignored. As a fact, more accidents, fatal and otherwise, had, in the Manchester area, been due to tram cars than motors.

### Bury and District M.C.C.

At a well attended meeting, held at the Royal Hotel, Silver Street, Bury, on Thursday, the 5th inst., a motor cycle club was formed. Mr. H. Clough, 80, South Cross Street, Bury, was appointed secretary. Another meeting will be held at the same hotel this evening (Thursday) at 8.30.

### Brighton C.C. (Motor Section).

A special meeting of motor cyclists was held at the headquarters of the Brighton Cyclists' Club, 190, King's Road Arches, on the 4th inst., to consider the advisability of forming a motor cycle club or section of motor cyclists to the present club. The chair was taken by Mr. Geo. White, and there was a large attendance of members and others interested in the pastime, and it was unanimously decided to form a motor section to the Brighton Cyclists' Club.

### The Coventry and Warwickshire M.C.

The membership is still on the upgrade, the total number on the books now having reached 194. The attention of the Chief Constable of Coventry has been drawn to the prevalent practice of carters overloading their vehicles with scrap iron turnings when carting from the works, with the result that the streets are strewn with iron scrap, and considerable damage to rubber tyres is likely to accrue. Monetary assistance is being given to the Daventry Rural District Council towards the cost of improvement to certain roads. The annual Yuletide run is arranged for the 28th inst.



## Club News.—

## Birmingham M.C.C.

A smoking concert will be held on Saturday, the 14th inst., at the Imperial Hotel, Temple Street, commencing at 8 p.m.

## The Cycle Car Club.

The fixtures arranged for next year are as follows:

January.—Lecture by Dr. A. M. Low, B.Sc.

March 15th.—100 miles non-stop run.

Easter.—Welsh tour.

April 19th.—Petrol consumption trial.

May 3rd.—Gymkhana.

May 11th.—Whitsun rally of cycle cars from all parts of the country.

May 24th.—Ante-breakfast paper chase.

June 23rd.—Open hill-climb.

July 5th.—Ladies' run.

August 4th.—London to Paris trip.

September 13th.—Members' flexibility trial.

## Eastern Province M.C.C. (South Africa).

On October 23rd a meeting was called of the motor cyclists of Port Elizabeth, as a result of which the above club has been formed. At the first meeting over forty members were enrolled. The Mayor (Mr. A. W. Guthrie) has accepted the presidency. The programme for the first season embraces all branches of the sport, and social runs and gymkhanas are included. Last month the opening run took place to Cadles, a pretty spot amongst the hills twenty-five miles away from Port Elizabeth.

On the 8th ult. the Captain gave a lecture, which was greatly appreciated, on "Hints, Tips, and Roadside Repairs," at the Grand Hotel, to an audience of over forty members and friends.

## New Zealand Clubs.

The recent trials of the Manawatu Motor Cycle Club went off in a most successful manner, although the unpleasant weather proved a severe handicap to competitors. Some twenty-nine faced the starter. Many of the competitors admitted that it had been one of the stiffest competitions they had competed in, the management enforcing the rules with the utmost stringency. B. Jenkins (Rudge) was responsible for a splendid performance, being the winner in both the open and private owners' classes, thus securing the Rudge and Jarvis Cups, and a trophy. He only lost one mark during the trial, this being due to arriving in Wellington one minute late. W. Passmore (Triumph) was second in both classes, receiving the Dunlop Rubber Co.'s trophy and a gold medal. This rider gained one mark less than the winner, and would have tied with him but for

his footrest being bent before he started, and through his failure to draw the attention of the officials to it it was not noticed until after the trial, when a mark was deducted. R. Burns (New Hudson) was third. Results:

## Petrol. Reliability. Total.

B. Jenkins (Rudge) ...	43.01	99	142.1
W. Passmore (Triumph) ...	39.6	98	137.6
R. Burns (New Hudson) ...	36.5	96	132.5

It would be as well for motorists to note that the address of the New Zealand Motor Cycle Club's Touring Branch has been changed to 290, Lambton Quay, Wellington. Here they can obtain almost any data they require regarding the different routes throughout New Zealand from the secretary of the Touring Bureau.

## Sydney M.C.C.

The reliability trial to Hartley Vale was favoured by good roads. It was a non-stop run at 21 m.p.h. Mr. A. Foy drove the only sidecar. Results: 1, V. H. Page ( $3\frac{1}{2}$  Zenith), lost three points; 2, R. E. Fletcher ( $3\frac{1}{2}$  B.S.A.), lost six points; 3, R. W. Allen ( $3\frac{1}{2}$  Zenith), lost nine points.

## Rand M.C.C.

The Rand and West Rand M.C.C.'s met in a series of team competitions on the 3rd ult., at Mulder's Drift Hill. Results:

## SPEED COMPETITIONS.

Standard Class.—Hodgson (Triumph), West Rand, beat Cutting (Precision), Rand; Thomson (Triumph), West Rand, beat Siems (B.S.A.), Rand; Reynolds (Rudge), Rand, beat Francis (Triumph), West Rand.

T.T. Class.—Merry (Triumph), West Rand, beat Howie (Rudge), Rand; Venter (Bradbury), Rand, beat Vorster (Bat), West Rand; Cuttford (Triumph), West Rand, beat Hodge (Rudge), Rand, who fell while leading; Bright (B.S.A.), Rand, beat Hodgson (Bradbury), West Rand; Flook (Triumph), Rand, beat Robison (Triumph), West Rand.

Sidecar Class.—All four matches fell to the Rand Club, represented by Leyland (Indian), Chater (Zenith), Reckenbarg (Bradbury), and Cutting (Bradbury).

## HILL-CLIMBS.—STANDARD CLASS. m. s.

1. Hodgson (Triumph), West Rand ...	1 42
2. Cutting (Triumph), Rand ...	1 43
3. Francis (Triumph), West Rand ...	1 46 $\frac{3}{4}$

## T.T. CLASS.

1. Flook (Triumph), Rand ...	1 20
2. Bright (B.S.A.), Rand ...	1 24
3. Merry (Triumph), West Rand ...	1 27 $\frac{1}{2}$

The Rand M.C.C. proved to be the victors with 12 points to 7.

## Points in the Design of 1913 Models.

Extracts from a Paper by Mr. Douglas Leechman before the Essex Motor Club.

An interesting paper was read by Mr. Douglas Leechman in the R.A.C. Committee Room, on Thursday evening last, entitled "What I Saw at the Show." Mr. E. M. P. Boileau, *The Motor Cycle*, presided. The lecturer opened his paper by discoursing on the fitting of roller bearings to several important makes of machines, such as the L.M.C., Rudge, Indian, and Sunbeam. He dwelt on the excellent idea employed on the Mark 7 Brown, which had detachable valve seatings. He also mentioned the increase in the number of engines with off-set cylinders, a practice which should be especially valuable in the case of two-stroke motors. He also spoke on the unconventional fitting of the gudgeon pin in the Pope engine, in which the pin is fixed in the connecting rod. It was free to move in and took its bearing from the piston itself. He also dwelt on the fitting of decompressors and "straight-through" carburettors.

## Frame Construction.

It is quite evident that Mr. Leechman's strongest point was frame construction. He showed those present a frame he had had built specially for him. It was of the loop pattern and also had an additional stay running from the top of the saddle tube up to the head, the tube below it running from the former to the bottom of the head and being parallel with the ground. He had also chain stays extending beyond the

bottom bracket, and of these the near side chain stay was very slightly bent to allow for the belt rim.

Speaking of gears, he said he liked the employment on the Hazlewood of the Armstrong as a counter-shaft gear. All the important features found on modern motor bicycles were adequately dealt with. After Mr. Leechman had concluded his paper the Chairman declared the discussion open.

## The Discussion.

Mr. Karslake spoke for some time on the mud-guarding of machines, and showed by means of a clear sketch how the belt was best protected. The discussion was carried on by Messrs. Pratt, Cooper, Simpkin, Thomas, and Gray. Mr. Gray, in his remarks, gave an interesting tip regarding the refitting of roller bearings to the gudgeon pin. He said that before taking the bearing down the top of the crank case should be covered with a cloth in case the rollers fell therein. To re-assemble, the best plan was to have a loose fitting dummy gudgeon pin, place half the rollers in the bearing, then insert the dummy gudgeon pin, and then the remainder of the rollers, the dummy gudgeon pin, of course, being fitted through the piston. When everything was assembled it was then only necessary to push out the dummy pin and put in the proper one and the job was accomplished. The proceedings terminated with the usual votes of thanks to lecturer and chairman.



# AMONG THE ACCESSORIES.

## Clothing.

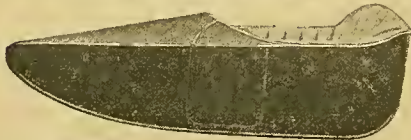
The well-known firm of Selfridges, Oxford Street, W., have given special attention to the needs of motor cyclists.



Selfridges' motor cycle suit.

They have instituted a motor cycle department, which is shortly to be enlarged, and is run by a manager who is himself a motor cyclist. In this department the clothing section has been given every attention, and we illustrate the latest motor cycle waterproof suit. It is light, but being lined with fleece is very warm. The coat has an efficient storm flap, and the trousers are seated. The legs are provided with inverted pleats and fasten up with buttons. Another novelty is a leather lined waistcoat which has a knitted wool neck and wristbands. The third novelty is a waterproof cap made up of light material. This can be made to fit right over the back of the head and ears and has a large peak. It can be adjusted by tightening an elastic band which encircles the crown.

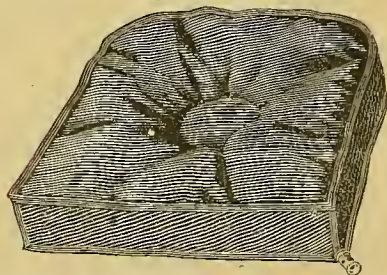
## The B.C.C. Sidecar.



A novel design of sidecar body with flat bottom, sold by the B.C.C. Co., of Coventry. The front half is permanently covered in.

## Sidecar Cushion.

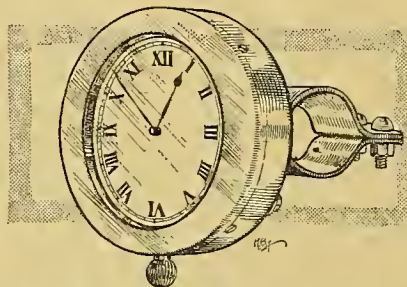
A pneumatic cushion was exhibited at the Show by the Hutchinson Tyre Co., 70, Basinghall Street, E.C. It



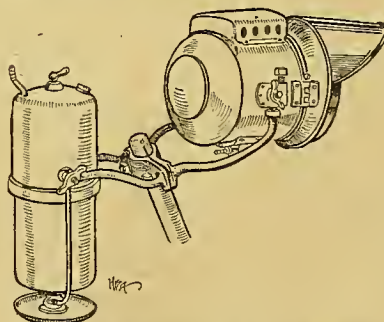
should be ideal for sidecar use. Luxuriously sprung and upholstered as some of these machines are, a pneumatic cushion will still further increase the passenger's comfort and greatly alleviate the fatigue of a long journey.



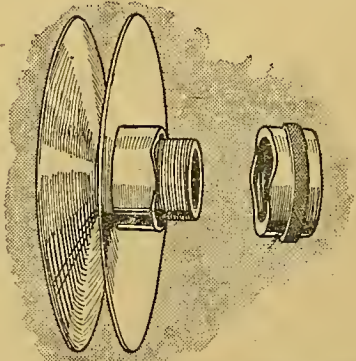
Service Co.'s route card carrier, which has a waterproof celluloid covering.



Handle-bar watch by Nicole, Neilson and Co., Ltd., makers of the Watford speedometer.



Rotax lamp and generator set. The head light has a large hood.



The Lindum easily adjustable and self-locking pulley.

## Useful Grease Gun.

Ross, Courtney, and Co. are makers of a small grease gun, which we illustrate. It is for injecting grease into greasers, bearings, or any part of the motor cycle that requires this kind of lubrication.

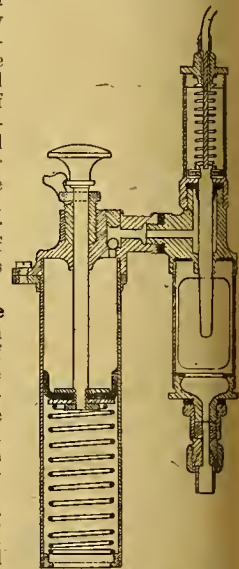


Ross-Courtney's grease gun.

This short grease gun can be carried in a motor cyclist's tool kit.

## A Throttle Controlled Lubricator.

The section of lubricator in annexed sketch is that of a new type of B. and L., which allows of a varied supply of lubricant according to the engine and amount of throttle opening. The feed and carburetter throttle lever are inter-connected so that more or less opening of the latter affects the former.



## Spring Frame

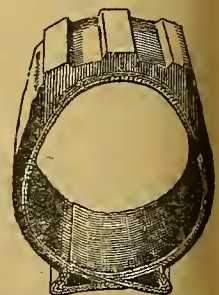
The Oakleigh Motor Co., of 65a, Rosendale Road, West Dulwich, S.E., are making a special strong bicycle frame for heavy sidecar work. This has a sprung back wheel and large upholstered pan seat placed on springs. Instead of the usual single tube in front the frame is built up with double tubes, and the top tube is strongly braced to the top of the ball steering socket.

A type of Best and Lloyd oil pump, the drip feed of which is interconnected with the throttle lever.

## A Ribbed Non-skid.

Gaulois tyres have now been on the market some years. The firm's latest type of cover for motor cycle or sidecar work is known as the "Triple Stripe."

We illustrate this pattern, which is made in practically all sizes, with grey or white tread, and should prove an efficient non-skid. A steel studded cover as well as butt ended tubes are also sold by Gaulois Tyres (1909), Ltd., 6, Bath Street, City Road, E.C.



Section of the Gaulois triple stripe cover.



# AIR-PROPELLED MOTOR CYCLES.

The Pros and Cons of an Ingenious System.

By W. G. ASTON.

**W**ITHIN the last few months there has been a good deal of talk and quite a stir in some sections of the daily Press in regard to a certain "winged motor car" which attracted the attention of Fleet Street by accomplishing a run of a few hundred miles in France, and which was hailed as an entirely new thing. Of course, it was not a "winged motor car" at all, but merely an apparatus which is commonly known as a "wind waggon," and is practically an aeroplane without wings; that is to say, the tractive effort is provided by an aerial screw propeller instead of being applied directly to the driving wheels.

This sort of thing is as old as the hills; there are, and have been for years, quite a number of them in various parts of America; there are also a few in France, and there are at least two full-sized ones in England, and they are generally used by manufacturers of aeroplane propellers or engines as testing machines.

The fact that they can travel with remarkable smoothness at high speeds, that they are also good hill-climbers, and, as motor vehicles, are characterised by extraordinary simplicity, has led not unnaturally to the supposition, and even in some quarters to the deliberate statement, that they are the forerunners of a new type of motor car in which practically all the inherent disadvantages of the present type will be overcome at one stroke. This sort of prediction is to be taken very much *cum grano salis*.

One wishes one could say, as a contributor to *The Autocar* recently, that all such troubles would be put an end to by merely coupling the engine up to a screw propeller. This, alas, is hardly true, still one never knows what may happen, what new discoveries may be made, and what new and more efficient forms of air propellers may be devised. It would, therefore, be very unwise to say that the air propulsion principle can be dismissed as so much "bunkum," but it is quite safe to say at the present time that it stands very little chance of regular adoption, inasmuch as its disadvantages very greatly outweigh its advantages.

## The Advantages of Air Propulsion.

First let us glance at the advantages of air propulsion. These may be roughly classified as follows: (1) Simplicity, (2) cheapness, (3) absence of skidding, (4) greatly reduced wear on tyres, and (5) easy gliding motion. These require some little explanation.

Essentially, the air-propelled motor cycle consists of a bicycle to which is fixed a motor and a screw propeller; this means that no transmission strains are applied to the frame of the machine or to the wheels and tyres, hence all of these may be extremely light—ordinary "push cycle stuff" would certainly be strong enough for general purposes, as only the road strains have to be considered.

It is, of course, principally in this respect that cheapness of production can be attained. A first-class bicycle to form the basis of the machine, and perhaps strengthened all round a little, and shod with good-sized tyres, should not cost more than £12 at the outside. A 5 h.p. engine with direct coupled propeller ought not to exceed £22, bringing the total to £34.

## Freedom from Side-slip.

For ordinary purposes 2in. tyres would probably be ample. Incidentally to the rolling action of the tyres comes the freedom from skidding, which is justly regarded as one of the principal advantages of the air propulsion method. It is, or should be, well known that a wheel which, like the front wheel of a motor cycle, merely rolls over the road surface exhibits far less tendency to sideslip than does one which is being forcibly driven or being braked.

With the air-propelled motor cycle, the speed of which would be checked by brakes on the road wheels as well as by the engine control, the ordinary tendency to skid would, of course, be exhibited just the same were the brakes to be applied harshly or suddenly, but in ordinary running it is safe to say that so far as road grip is concerned, corners could be taken at a speed much greater than is at present possible.

Not least of the favours which air propulsion has power

of bestowing is the beautiful easy gliding motion which it imparts to the machine. There are absolutely no transmission shocks, since the resistance against which the propeller reacts in order to thrust the machine forward is fluid air, which is an ideally elastic medium.

This, in a way, carries its own disadvantage with it, for it means that very rapid acceleration cannot be obtained when it is wanted. The throttle may be opened with great suddenness, but the effect of the increased power upon the machine would be felt far less rapidly than with the present positive system of transmission. There would likewise never be any opportunity for the engine to "konk out," as its load, namely, that due to the mere rotation of the propeller, and not directly the propulsion of the machine, is a more or less constant one, or, at all events, decreases with lessened engine speed. A positively driven machine ascending a hill of progressive gradient imposes a greater and greater load upon the engine, as the revolutions of the latter become less and less, hence the power falls off as the resistance increases. With the air-propelled motor cycle exactly the opposite is the case, for the power can remain, if desired, at its maximum under all conditions, whilst what is even more important, the thrust of the screw propeller becomes greater and greater as the speed of the machine decreases. As the machine goes forward and increases in speed, less and less air is deflected backwards, hence the thrust becomes less and less proportionately. If one could obtain a propeller of perfect efficiency, namely, one in which there was no slip at all, it would continue accelerating the machine until its speed were such that the screw blades were working as positively as a bolt works in a nut. Such a propeller is, needless to say, quite impossible, and hence no air-propelled machine could ever reach the theoretical speed of the screw which drives it. There is, and always must be, a certain amount of slip; if not, it would be impossible to turn the propeller round, no matter at what speed, without causing the whole machine to progress a certain definite distance.

## The Disadvantages Explained.

Let us now glance at the other side of the picture. Right away from the beginning it is necessary to say that the disadvantages outweigh the theoretical benefits by a very great deal. They will be dealt with in a similar manner to the latter, and are categorically more or less as follows: 1, large size of propeller; 2, slow acceleration; 3, effect of torque; 4, necessity for transmission; 5, effect of wind; 6, necessity for protecting screw; 7, dust raising; 8, effect of gyroscopic force; and 9, necessity for multi-cylinder engines.

The first item, namely, size of propeller, is a matter of great importance, possibly more so than any other when one is considering two-wheelers only.

A propeller 3ft. in diameter and 4ft. 6in. in pitch should at 1,500 revolutions per minute be capable of driving the machine (of which the resistance to the air is assumed to be small) at a speed of just on 60 m.p.h. The engine power necessary for this would be 5 b.h.p. (This statement does not represent a mathematical calculation, but is deduced from results obtained with actual propellers.)

The thrust given by the propeller when the machine is stationary would be, roughly, 50 lbs., whilst at various speeds the running thrust would be approximately as follows:

At 30 m.p.h.	... 31 lbs.	At 50 m.p.h.	... 18 lbs.
„ 40 m.p.h.	... 24 lbs.	„ 60 m.p.h.	... 15 lbs.

It will be noticed that when the maximum speed is obtained the thrust is so small that the machine and its rider would have to be of very small air resistance indeed, to say nothing of the friction of the rolling wheels. To assume that 60 m.p.h. is within the capacity of a machine of this type is undoubtedly very optimistic, and it has only been taken as representing the best possible case for comparison.

Now a 5 h.p. twin motor bicycle in anything like tune should easily be capable of a mile a minute, so that a rough comparison can easily be made.



### Air-propelled Motor Cycles—

So far as the present design of air propellers goes, no claims for high efficiency can be made for them. With a direct driven, or, at any rate, a high speed propeller of small diameter, such as would have to be used on a motor cycle, the efficiency could not be expected to be more than about sixty per cent., which is undoubtedly considerably lower than is to be obtained with a transmission of the usual type.

#### A Screw Three Feet in Diameter.

The screw I have suggested above, namely, 3ft. in diameter  $\times$  4ft. 6in. pitch, would unquestionably be relatively inefficient owing to its high speed, but I certainly do not see how a larger one could very well be used. By increasing the diameter, decreasing the pitch, and keeping the speed the same, the thrust per h.p. could be increased, and from an aerodynamic point of view this would be advis-

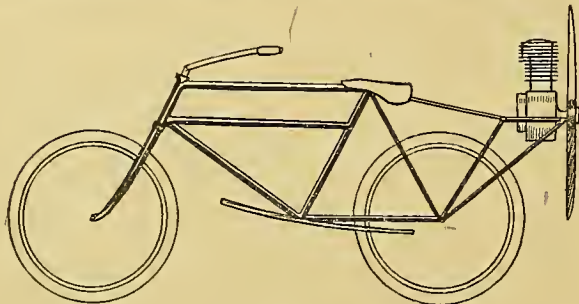


FIG. 1.

able, but it is impracticable for this reason, that the machine would require nearly as much lateral space on the road as a small car, and its usefulness would thereby be considerably destroyed. The 3ft. diameter is clumsy enough in all conscience, especially as the screw would have need of very complete protection, but it is conceivable that such a machine could be negotiated through fairly heavy traffic.

Let us now consider what a machine so equipped should be capable of in the way of hill-climbing. From the above figures relating to screw thrust, it is clear that if the machine and rider weigh together 200 lbs. (they will be almost sure to exceed this figure), a hill of 1 in 8 could not possibly be climbed at more than 33-35 m.p.h. Allowing for any frictional losses in the machine itself, a gradient of 1 in 12 could not be taken at more than about 26. Bearing in mind that these figures do not take into consideration the power absorbed in wind resistance, it will be seen at once that they compare not at all favourably with the existing records of positive transmission systems.

The above machine should be just capable of climbing a hill of 1 in 4½, but at an exceedingly slow rate of speed.

Point No. 2 deals with slow acceleration, which might perhaps have more properly been designated as "Lag."

As everybody knows who rides a modern motor cycle, one has only to open the throttle to dart forward, acceleration being very rapid indeed. Inasmuch as the transmission is not positive in the air-propelled machine no such instantaneous response is to be expected. Upon opening the throttle the engine would certainly accelerate, and the propeller thrust be accordingly increased, but the inertia of the machine would prevent it from getting away with a bound; in other words, whilst it might accelerate to the same speed over a given distance, it would get on the move much more slowly. The reason of this is that in the one case there is no slip at all, and in the other there is a great deal. Indeed, for practical purposes the aerial propeller may be regarded more or less as a slipping clutch.

### Two Alternative Types of Wind Motor Cycles.

In sketches I and 2 I have made rough suggestions for alternative types of air-propelled motor cycles. The first is a very obvious sort of arrangement. The affair is practically a pedal cycle frame and wheels with an extra strong luggage carrier, upon which is mounted an engine direct coupled to a propeller. It is, of course, simplicity itself.

In the second sketch another design is given in which the propeller is in the same place, but the engine is much lower

down, the transmission between the two being by means of a chain. To the uninitiated it would appear that the two designs were practically the same, but in reality this is far from being the case; the distinction hinges on the matter of torque, which has been mentioned as disadvantage No. 3.

In the first design the tendency for the torque of the engine is to twist the machine about the axis of the propeller-shaft. This might quite possibly, on greasy roads, be rather a serious matter when the engine was opened up with some suddenness.

In the second design this torque is got rid of by employing the chain drive, and no such twisting tendency exists. The latter is, therefore, the better design of the two, which brings us to the fourth disadvantage, viz., necessity for transmission.

It will be realised from what has been said before that unless a direct drive of the screw can be employed one of the greatest claims of the air propulsion idea falls to the ground, and especially so as in view of the poor efficiency of the system one cannot afford to be negligent of one's power. I do not suggest that a well-protected chain drive would make a great difference to the efficiency of the plant, but the difference, slight though it might be, would be there none the less.

It may be asked on glancing at the above figures, "Why not put the screw in front?" The answer to this is that if so the rider would have the whole of the slip-stream directed into his face, so that if he were climbing a steep hill at a walking pace he would be as much blown about as if he were doing a mile a minute on the level.

Another advantage of having the propeller behind is that in this situation it stands a chance of recovering a certain amount of lost energy by working in the frictional wake of the rider's body.

### Wind Effect.

We now come to wind effect, and in regard to this it is almost true to say that alone it is enough to blast the prospects of air propulsion for good and ever. As a case in point. A 60 m.p.h. air-propelled machine could only do 35 m.p.h. against a 25 m.p.h. wind, which, during spring and winter, is a thing quite frequently met with; indeed, during these seasons winds of this speed are almost the rule rather than the exception. Gusts of much higher speed almost frequently occur, and these would have considerably more effect upon an air-driven machine than upon an ordinary mount. It is true that when the wind is behind the rider his speed would be proportionately increased, but this by no means makes up for the fact that he would always be entirely at the behest of the wind for his distance and average speed. The ideal condition for the suggested machine would be, of course, a perfectly calm day.

The next point, which deals with the necessity for providing adequate protection to the rapidly revolving propeller, scarcely calls for any enlargement. Certainly the cage in which it rotates must be strong enough to prevent it being

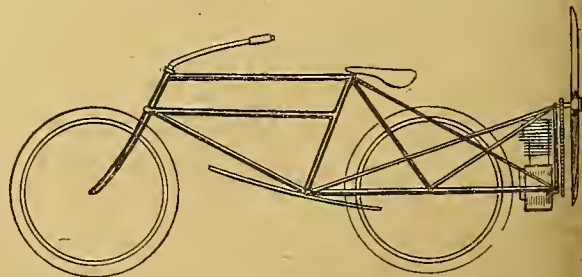


FIG. 2.

smashed in case of the machine falling over, and it must likewise be a very complete one in order to prevent enquiring persons from having their fingers cut off. Owing to its enormous peripheral speed, the propeller is in effect as weak and brittle as a biscuit. A pebble hung up by the back tyre would be quite sufficient to splinter the blades if it were allowed to strike them, and this point would therefore require careful attention.

One inevitable result of fitting a really protective guard would be, it may be added, an immediate means of reducing propulsive efficiency.

With regard to point No. 7, it has been said that air propulsion for motor vehicles would practically solve the dust



# THE POETRY OF MOTION

is the only way to describe the running of the

## 3 $\frac{1}{2}$ h.p. TWIN

(500 c.c.)

# MOTOSACOCHE

FOR GENTLEFOLK

NO VIBRATION

NO OILY DIRT

NO NOISE

NO GYMNASICS

With CHAIN DRIVE—TWO-SPEED GEAR, FOOTBOARDS, Etc.

When it is remembered what a wonderful little machine was the 1 $\frac{1}{4}$  h.p., it will be well imagined what the 3 $\frac{1}{2}$  h.p. Twin will be capable of accomplishing. With the admirable 2 $\frac{1}{2}$  h.p. Motosacoché, the Gentleman's machine, with change-speed gear and free engine, and the 3 $\frac{1}{2}$  h.p. machine, both second to none, we have motor cycles to meet the requirements of all.

**MOTOSACOCHE, LTD., 65, Holborn Viaduct, LONDON, E.C.**

Telegrams—Motosacoché, London."

Telephone—Holborn 5439.

## The Question 'WHICH IS



## THE BEST TYRE' ANSWERED.

Read the following comment by Major F. Lindsay Lloyd, the judge of the Tyre and Belt Trials held in conjunction with the A.C.U. Six Days' Trials:

The prize referred to is, of course, the "Motor Cycling Cup" for the Best Tyre Performance, awarded to the Palmer Cord.

The condition of the set of tyres (Palmer Cords) to which the prize has been awarded was undoubtedly better at the conclusion of the Trial than that of any other set under my observation. In fact, except for the tyre mounted on the driving wheel, it would have been difficult to say that the covers had been used at all, and on the driving wheel cover itself, except for very slight markings on the outstanding rubber ribs, there were practically no indications of wear.

6 out of 7 riders of PALMER TYRES gained 6 gold medals and 4 cups. The 7th failed through mechanical trouble.

The 3in. Cord Tyre can be supplied from stock. Write for list.  
THE PALMER TYRE LTD., 119 121, 123, Shaftesbury Avenue, LONDON, W.C.  
Motor Cycle Tyre Dept. 103, St. John Street, Clerkenwell, E.C.

# PALMER

In answering these advertisements it is desirable to mention "The Motor Cycle."



# The NEW CLINCHER "FLEXIS" MOTOR-CYCLE BELT

Size

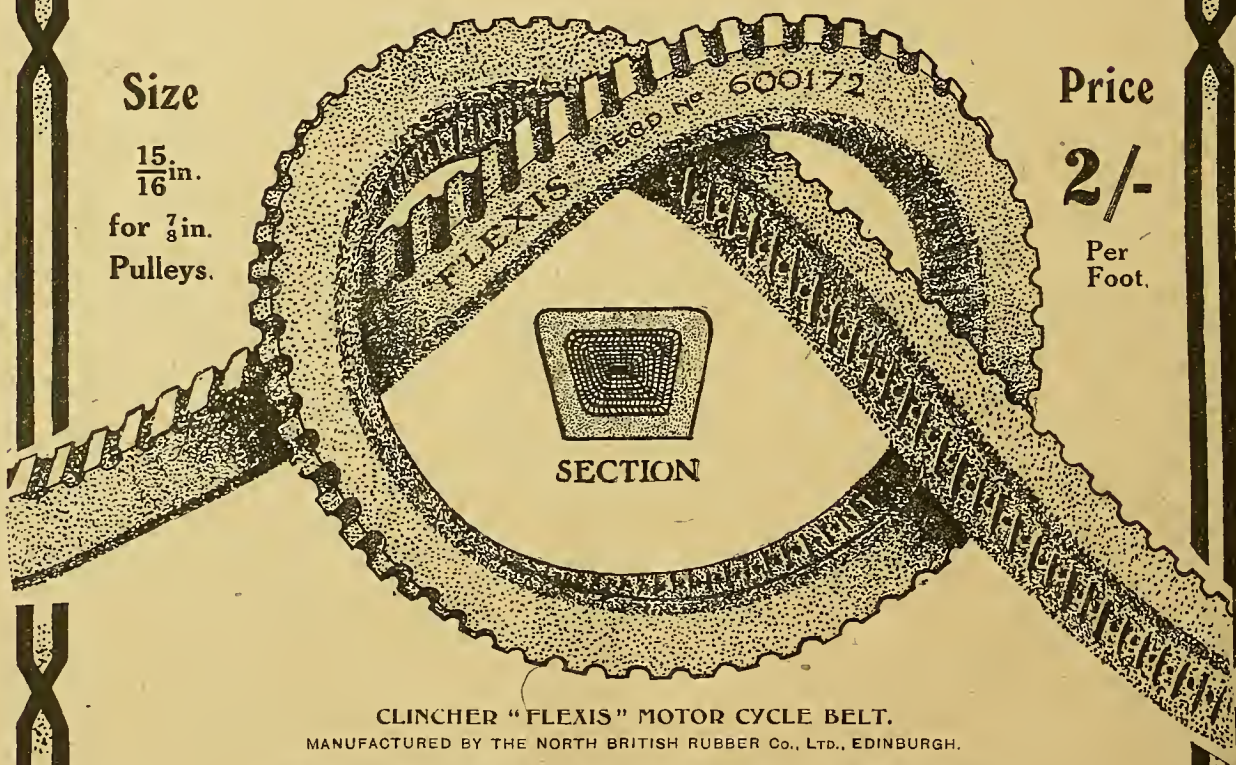
$\frac{15}{16}$  in.

for  $\frac{7}{8}$  in.  
Pulleys.

Price

2/-

Per  
Foot.



CLINCHER "FLEXIS" MOTOR CYCLE BELT.

MANUFACTURED BY THE NORTH BRITISH RUBBER Co., Ltd., EDINBURGH.

The Clincher "Flexis" Belt is designed to give extreme flexibility and mileage. It does not stretch and can be used slack without danger. Particular notice is called to the SIZE  $\frac{15}{16}$  in., as this will better suit the  $\frac{7}{8}$  in. pulley than the ordinary  $\frac{7}{8}$  in. belt. Tests have absolutely proved it to be the best belt on the market.



THE NORTH BRITISH RUBBER Co., Ltd.,  
Tyre Sale Department,

Telephone:  
Gerrard 8578.  
Gerrard 8579.

**CLINCHER HOUSE**  
Great Portland Street,  
London, W.

Telegrams:  
"Nobritires,  
London."



## Air-propelled Motor Cycles.—

problem. This is the truth, but not by any means the whole truth. As a matter of fact, it is true only provided that such motor vehicles are always travelling at their maximum speed, and in this event the dust they would raise would certainly be relatively slight. Unfortunately, the presence of a high speed blast of air from the screw when the machine was starting from rest, or climbing a hill, would cause dust to be raised in prodigious volumes.

In discussing multi-wheelers, viz., vehicles of which the stability is assured, it is not necessary to consider very seriously the effect of the gyroscopic force produced by the revolving propeller, but in single-trackers this matter is not to be lightly dismissed. It is quite unquestionable that taking sharp corners with full power would require most certainly great skill, and possibly enormous muscular strength, in the rider.

The necessity for using with an air propeller a multi-cylinder engine will, I imagine, be rather obscure, except to those readers who take a lively interest in aerodynamics. Briefly the reason is as follows:

For it to give maximum efficiency a propeller must be subjected to a constant driving torque. If its angular speed be not constant, as would be the case if it were driven by an ordinary single-cylinder engine, it would give a thrust of slightly varying strength. This variation in thrust might be met by a synchronised variation in speed of the machine, but this is prevented by its inertia. Such being the case, the effect of the varying thrust is to deform the propeller blades by slightly bending them out of pitch. In consequence of this, the air resistance of the propeller blade is increased, and its efficiency accordingly very adversely affected.

## THE TRANSMISSION CONTROVERSY.

I should like to answer "Ixion's" summing up of this controversy. The main features about his article appear to be that he knows very little about chain drive, and that the chain drive has not even a single advantage over the belt. Yet he is willing enough to admit that by the adoption of the front chain to take the hardest part of the drive to relieve the belt, and by shortening the belt, so making it harsher, you get an improved drive.

I notice also that he still claims that popularity proves the superiority of the belt drive. But, according to the popularity idea, I suppose that no improvement is superior to the old article until it has become popular!

He writes some pointed remarks about the public, press, and trade in his final arguments, and with all of which I agree in certain respects. Each accusation applies to a small portion of these individuals. Generally speaking the trade supply what they can sell best, and that which is cheapest to make. The belt drive *me judice*, has only two advantages over the chain drive—that is the direct belt with adjustable pulley and the chain drive with the slip clutch or efficient shock absorber. Firstly, it is cheaper to manufacture. Secondly, being able to alter the gear to any ratio more easily has given the belt an advantage in hill-climbs and races, where conditions alter at the last moment. The belt, although it has a short life, has a life long enough for a hill-climb, or short race between adjustments, and for long distance races the practice of carrying one or more spare belts proclaims to the world its unreliability. These two advantages have been the cause of the belt's popularity.

Nevertheless, the P. and M. lived through it all, because their drive can equal the belt in all points except cheapness of manufacture and ease of ratio change, but could always beat the belt in reliability and cheapness of upkeep. The belt has been improved many times, but is now absolutely out of keeping with the general reliability and durability of the modern machine, and always will be, unless motor cycles deteriorate.

Taking "Ixion's" points in favour of the belt, his arguments that it is cheaper to make and lighter, although quite true, carry no weight against its unreliability. "It is easier to repair and adjust and cleaner to handle." As for repairing it entirely depends on the break in either case—one might be more difficult than the other, but when one considers that the chain very seldom breaks and the belt often does, the chain becomes preferable.

When the rate at which the screw receives impulses corresponds with, or is a simple multiple of, the spring period of the blades themselves, a steady flutter will be set up which would reduce the efficiency enormously. To overcome this difficulty, either the propeller must be driven through a reduction gear of big ratio, or enormously heavy flywheels must be fitted to the engine, or a multi-cylinder stationary engine must be used, or a rotating engine of the Gnome type. The first alternative is, as we have seen above, impracticable on a road vehicle, because it means that the propeller must be very large. The second is highly undesirable, because it would destroy the liveliness of the engine, which, as has been pointed out, is already seriously discounted by the nature of the drive. The third and fourth alternatives are the only available ones, but it need hardly be said that in either case they would result in the price of the machine going up to a pretty high figure.

### Two and Other Wheeled Wind Motor Cycles.

In this article I have admittedly been considering two-wheelers only. It need hardly, however, be pointed out to advocates of air propulsion for cyclecars that practically every one of the arguments holds as good for one type of machine as the other. As a matter of fact, the cyclecar is even worse off than the motor cycle, because it weighs more per unit of power. Large propellers being barred, it must therefore cut a poor figure on hills, unless, of course, the power available is very large. I estimate that a 20 h.p. air-propelled four-wheeler would on an all-round basis be about comparable to a positively-driven machine of 8 h.p.

There are, by the way, one or two other disadvantages I might mention, but those I have dealt with should be sufficient. I have tried hard to add to the number of benefits, but without success. Perhaps some screw enthusiast can do so.

"Ixion" states that the belt is safer under certain circumstances. What circumstances? His other remarks about "duffer drivers," "smoothness," "steadiness on grease," and "livelier engines" only apply to the badly designed chain drive without a slip clutch or shock absorber of any sort. "Ixion" will agree that the Indian, A.J.S., Scott, or J.A.P. engines used with chain drive are just as light and lively as engines used on belt-driven machines, and wear as well and as satisfactorily. The P. and M. and Clyno engines, of which "Ixion" is probably thinking, are low compression engines, not because the machine is chain-driven, but because the type of engine has many advantages for steady touring and everyday riding.

Now, turning to the mongrel drive—the combined belt and chain. This loses the two advantages of belt over chain. It is as expensive as the chain drive to manufacture (it is as heavy, too), and it loses the adjustable pulley, besides shortening the belt, thereby making it harsher and less flexible. It still retains the slipping of the belt, and still has belt fastener troubles. The former of these is, of course, improved, but the flexibility of this drive is not as good as that of the direct drive, since the belt is shorter, and, consequently, has to run a little tighter. My original points was and is, since the combined drive has no advantages over the chain, why retain the belt. It has the disadvantages of belt slip and breakage, requires more looking after, and the belt has a shorter life than the back chain. Its efficiency is less, and its smoothness of drive variable. Once a slip clutch has been properly adjusted it remains adjusted for a year or two and does not vary. "Ixion" loves the word "belt"; it has some magic charm for him, but it should not make him blind to the fact that in whatever form you have the belt drive, it is inferior in durability and reliability, and requires more looking after than the chain does. So soon as the shaft drive is fitted with a satisfactory slip clutch mechanism this drive can compete with the chain, but will always be more expensive, although it has the advantage of "weatherproofness."

I notice in the "Buyers' Guide" fifty-five models of chain-driven machines are listed (five with optional chain or belt), and only twenty-two combined drives. I wonder if "Ixion" will back this state of affairs up by his popularity fallacy, and admit that the chain drive must be better than the combined drive, or will he agree with me that popularity proves nothing?

THOMAS F. MAW.



# QUESTIONS and REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Tyres Giving at the Bead.

?

I have ridden my 1912 T.T. machine 5,100 miles, and in that distance have worn out, on back wheel, three outer covers besides half wearing out another two.

The covers all go at the bead, though there is nothing that the garage can find wrong with the rim. (1.) Can you suggest any possible faults or means of remedy? (2.) A tyre liable to stand the strain better. (3.) Would the trouble be obviated by converting wheel to wired-on? (4.) Are there any objections to wired-on covers? (5.) Would the conversion cost much?—W.P.

(1.) We should say that the cause of the trouble is high speed, and the size of the tyre fitted is not up to the work. Perhaps, also, you do not inflate the tyres sufficiently. (2.) Try a heavy cover of any first-class make. (3.) Possibly; but special rims are required for these covers, and they are not so easily detachable. (4.) There are no objections to wired-on covers; many riders prefer them; but they are not so general. (5.) The cost of conversion can be obtained from the tyre makers, who would give you a quotation for new rims.

## Easy Starting.

?

I have great difficulty in starting up my 8 h.p. twin Dot, which has a handle starter. I cleaned out the stale oil from the bearings lately, and this improved it, but did not cure it. (1.) Would the fitting of decompressors cure the trouble, or can you suggest some other remedy? (2.) The cylinders are rather badly carbonised; would this have any effect on starting? (3.) When the engine is running free it races at a fearful pace. Would this also be remedied by decompressors, or is it the fault of the carburetter? (4.) I would be pleased if you could tell me if there are any silencers on the market which can be attached to the sidecar and connected up to the silencer on the cycle by means of flexible connections. —NANTON.

(1.) The fitting of decompressors would considerably assist matters; also the flooding of the carburetter before starting. (2.) We would recommend you to free the cylinder head and piston of carbon deposit. (3.) If the engine races when it is running free, it shows that the carburetter is not adjusted for running at slow

speeds. The fitting of an automatic carburetter, such as the Lukin, Binks, Stewart-Precision, Brown and Barlow, or other good make, would make a wonderful difference to the running, and the fitting of the decompressors would help the machine as regards easy starting, and also as regards slow running as well. (4.) Yes, any silencer could be fitted up in this way. There were several examples of this method of attachment shown at Olympia.

## Taxation of Carrier Motor Cycles.

?

I have a 3 h.p. motor cycle and I have fixed a permanent carrier and basket behind with the intention of getting exemption from licence. I made application here (Blackpool) and took my machine to the town hall for inspection, also saying I would paint name, etc., on plates. The borough treasurer said he had not heard of a motor cycle getting exemption, but if I could get to know whether there were any such cases he would be very pleased to consider my request.—C.J.P.

What we should advise you to do is to refuse to take out a local taxation licence, stating that your machine is used solely for business purposes. On the other hand, you must be prepared to swear

that the machine is not, and will not be, used on any occasion whatsoever for other purposes than the delivery of goods and merchandise. In the event of your being prosecuted, if you are a member of the Auto Cycle Union (89, Pall Mall, S.W.), or any club affiliated to it, their Legal Department will defend you free of charge. The only case, which was recently referred to, which the A.C.U. took up they had to drop because it was stated in court that the applicant had used the motor bicycle on one or two occasions for pleasure purposes.

## Misfiring on Pilot Jet.

?

Will you kindly say what is the cause of my 7 h.p. two-speed Indian (1912) misfiring on the pilot jet? It has run about 2,200 miles, and the misfiring developed after 1,500 miles. The jet and carburetter have been taken down and thoroughly cleaned. The exhaust valves have been refaced, but the inlets were not touched. No new springs have been fitted. I know three similar machines which have shown the same trouble and we cannot remedy it.—J.L.W.

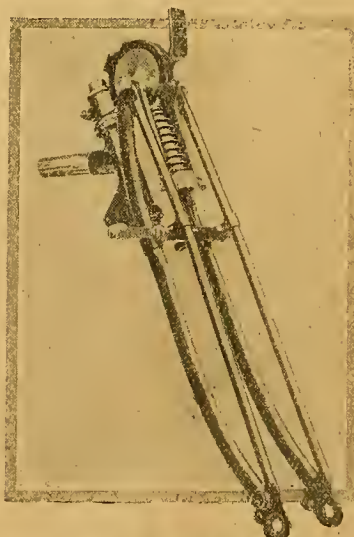
Misfiring at low speeds may be due to a variety of causes. Carburetter: Jet choked, petrol supply intermittent, too much air (possibly caused by a leak at the union). Magneto: Platinum points want refacing and cleaning, contact breaker sticks, carbon brush and ring want cleaning. Plug: Points too far apart or very possibly too close together.

## Inland Revenue Tax

?

In your handbook you state that the Inland Revenue tax of £1 has to be paid within twenty-one days after putting the machine on the road. I conclude from that that one can keep a machine for an indefinite time without paying the tax if one does not ride it. Also, as I am buying a bicycle soon, if I bought it on or after the 11th of December, would I then avoid the payment of 10s. tax for the remaining part of this year, as this date will be within the twenty-one days limit.—P.G.

You can keep a machine without an Inland Revenue licence so long as you do not use it. If the machine is used the tax immediately becomes payable, but you are allowed twenty-one days grace. Therefore if you first use your machine on December 11th, the tax 10s. becomes due on January 1st, and this licence must be renewed for 1913.



The Lindum Spring Fork—This should be particularly suitable for sidecar machines as the large ball bearing at the top prevents lateral movement.



## Compensation for Injuries.

?

(1.) I ride a motor bicycle for my employers. In the event of an accident whilst on the bicycle, can I claim compensation for personal injuries from my firm? (2.) Can I drive a motor car whilst holding a licence to drive a motor cycle? (3.) What should be the highest gear on a  $2\frac{1}{2}$  h.p. machine with an Armstrong three-speed? I only weigh about 9 stones. (4.) Is it possible to use too large a belt on a motor bicycle, even though it fits in the engine pulley? For instance, an inch belt on a  $2\frac{1}{2}$  h.p. model. (5.) Is it advisable to "treat" rubber belts in any way? (6.) Would there be sufficient exhaust from a  $2\frac{1}{2}$  h.p. single-cylinder to blow an exhaust whistle that had not a valve in the exhaust pipe?—DY 435.

(1.) Our answer to this question is in the negative, unless your salary allows you to be treated under the Workmen's Compensation Act. (2.) No, but if you hold a car licence, which costs the same, you may drive a motor cycle. (3.) We should say about  $4\frac{1}{4}$  to 1. (4.) The larger the belt, the more power is absorbed. A  $\frac{3}{4}$  in. belt should be quite big enough for the machine you are using. (5.) It is not necessary to "treat" rubber belts. (6.) Yes, the exhaust should blow a low pressure whistle.

## Transmission on Cycle Cars.

?

As a regular reader of *The Motor Cycle* of three years' standing, I venture to ask you for information on the following points with regard to friction drive for cycle cars: (1.) If the driven friction wheel or disc be fixed on the back axle, and the driving disc be fixed on a shaft continuous with the engine-shaft, what do you consider should be the diameter of (a) the driving disc and (b) the driven disc? (2.) If the driven disc be fixed on a counter-shaft and connected by chain to the rear axle, what should be the diameter of (a) the driving disc and (b) the driven disc, and what reduction in gear should the final chain drive give? (3.) Of what material should the friction discs be made, and do you consider plain or ball bearings the best for carrying them? (4.) What should be the thickness of the disc where it makes contact at its edge? (5.) Do you consider friction drive quite satisfactory for a light cycle car with an 8 h.p. air-cooled engine, or would you prefer a direct top drive by chain, and friction drive for the lower gears only? (6.) Is friction drive quite satisfactory when climbing hills? (7.) Can you tell me the percentage of the brake-horse-power of an engine which should reach the road wheels, assuming full efficiency—(a) by direct belt drive, (b) by direct chain drive, (c) by chain drive and epicyclic gearing on low gear through one set of pinions, and (d) by friction drive?—P.P.

At all times we are willing to answer queries regarding the handling and control of motor cycles, but replies to queries regarding manufacturing problems are somewhat without our province. (1.) As a matter of fact, it would be impracticable to run a car with friction wheel on back axle and driving disc on shaft, unless diameters were tremendously disproportionate. (2.) The approximate diameter

of the driven and driving discs in the case of counter-shaft friction drive, 18 in. driven and 12 in. driving; see illustrations of G.W.K. drive, also Violette friction drive in our issue of Nov. 14th, page 1317. (3.) The disc is made of cast-iron, and the friction wheel is made up of compressed paper, held between side plates. Ball thrust bearings should be used. (4.) The thickness of the friction disc can only be determined by experiment. (5.) If friction drive be adopted there is no necessity for a direct top drive by chain. (6.) Yes; quite satisfactory if properly designed. (7.) We cannot answer this question with any exactness, as so much depends upon the condition of the various parts and their lubrication, but you may take it that the following are approximately correct: (a) 15% to 20% loss; (b) 2% to 5% loss on each chain; (c) 10% loss on each train of gears; (d) 20% to 30% loss.

## Tuning and Timing.

?

My machine is fitted with  $3\frac{1}{2}$  h.p. twin Peugeot engine, Amac carburetter, and Bosch magneto. will you help me out of my trouble which is: (1.) When running engine on the stand for thirty seconds the back cylinder gets so hot that I cannot touch it with the hand. The silencer is quite clear, and the piston is getting a fair amount of oil. (2.) The front cylinder I cannot get to fire at any time. The spark is good and also the compression, the inlet and exhaust valves work quite freely, and the carburetter appears to be all right, and the engine is thoroughly clean. (3.) You might also tell me how to time my engine. (4.) How to alter the timing when the magneto is chain-driven. (5.) Is a gear 5 to 1 too small for my engine (my weight  $9\frac{1}{2}$  stones), and how many miles per hour should I get out of the machine on the flat? (6.) Is the Amac carburetter a good one, or do you recommend some other make?—Q.E.D.

(1 and 2.) If you run the engine on the stand you must not be surprised if it gets exceedingly hot so that you cannot touch it. This is not an abnormal heat for an air-cooled engine. Of course, if the exhaust valve springs are weak, causing the valve to close late, it will affect the power, etc., of the engine. The fact that the front cylinder does not fire is probably due to the carbon brush conducting the current from the magneto to the front plug being broken or not making proper contact. Try changing the plugs. (3.) You time the engine as follows: Retard the spark, and set the platinum points to break when the piston is on the top of the compression stroke. The exhaust valve should be set to close when the piston has reached the top of

the exhaust stroke or just a shade later. (4.) You will probably find the chain wheel on your magneto fitted with a cone. The nut should be removed, leaving the wheel free to move on coned end of armature-shaft, when the timing can be altered to suit your requirements. (5.) Try gearing a little higher, say  $4\frac{1}{2}$  to 1. You should be able to get 40 m.p.h. on the flat with this machine. (6.) The carburetter referred to is a good one.

## Tyres and Nominal Horse-power.

?

(1.) Is a wired-on tyre likely to creep? If so, are there any means of preventing same? (2.) How is it that some engines  $85 \times 85$  are  $3\frac{1}{2}$  h.p. and others  $85 \times 85$  are 4 h.p.; what is the difference? Kindly explain.—X.Y.Z.

(1.) No; wired-on tyres are not at all likely to creep if kept properly inflated. (2.) The horse-power is reckoned according to the makers' own ideas. Probably every  $85 \times 85$  engine gives well over 4 h.p. A modern engine should give at least 1 h.p. for every 100 c.c. capacity. The nominal horse-power is no guide at all.

## READER'S REPLY.

I notice in *The Motor Cycle* for November 21st that you advise "V.C.B." on the way to Weymouth after Birmingham. As I have done this many times, and have been over the route you suggest, I hope you will not mind if I suggest another which I have found, from experience, is far better. The best way from Birmingham to Dorchester (Hants) is as follows: Birmingham, Bromsgrove, Worcester, Tewkesbury, Gloucester; follow the Bristol Road six miles out, take the left road to Stonehouse (the directing post says Stroud, but it is not necessary to go to Stroud, as you pass by it and avoid the hill in Stroud, and it is also shorter, therefore turn sharp right at Dudbridge, one and a half miles from Stroud, straight to Stonehouse). Then on to Tetbury (not to Minchinhampton; Minchinhampton is on top of a tremendous hill, almost the highest point of the Cotswolds), Malmesbury, Chippenham, Melksham, Westbury, Warminster, Gillingham, Sturminster, Newton, Pulham, Buckland Newton, Piddletrenthide, Dorchester, to Weymouth. You will find the last part of the route is different from yours, which is actually, except Bridport-Lyme Regis Road, the most hilly road in Dorset, and I know it well. Shaftesbury itself stands on a hill and Blandford to Dorchester is also hilly. On the route I have given you there is only one hill, and that is easy, between Stonehouse and Tetbury. I was over it a fortnight ago, and it is quite the best.—W. E. DENSLOW.

## EXPERIENCES WANTED.

"L.S." (Streatham.)  $3\frac{1}{2}$  h.p. Kerry Abingdon two-speed with and without sidecar. Also Alldays, Matchless, and Roc gears.

"C.B.M.B." (Huntingdon.) Morgan runabout, reliability and stability in grease; also  $3\frac{1}{2}$  h.p. Green-Precision and 6 h.p. air-cooled twin for sidecar.

"W.W.H." (Bromley.) 1912 Scott. consumption, chain adjustment, and running costs.

"G.M.N." (Walsall.) 1912 Scott, reliability, consumption, and hill-climbing, solo and with sidecar.

## "The Motor Cycle" Photographs.

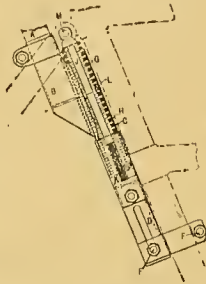
Duplicates of photographs appearing in "THE MOTOR CYCLE" will be supplied at the following rates:—Unmounted prints, half plate,  $1/6$  post free; mounted,  $1/9$  post free. This refers only to photographs taken by "THE MOTOR CYCLE."

Orders, which must be accompanied with remittance, should be addressed to the Photographic Department—Life and Sons Limited, 20, Tudor Street, London, E.C.



### A Spring Seat Pillar.

The saddle is carried on the usual pillar A sliding in a socket B, which is formed integral with a tube C provided at its lower end with a guide plate D, which is slotted to pass round a bolt E secured to the cycle frame by a clip F. The tube C is therefore free to slide vertically, but under the restraint of springs GH. These springs are threaded around a rod J having an abutment K at its lower end for the spring H, the tube C having an internal collar L acting as an abutment for both springs. The rod J is attached to the saddle-pillar bolt M, and the springs GH are arranged nearly to balance each other so that the saddle is not removed excessively when its load is removed.—W. Hunt and L. Masters, No. 1,309 1912.



### A Two-speed Gear.

The gearing is carried between two plates AB, which can be bolted to the

### The Albion Gear.

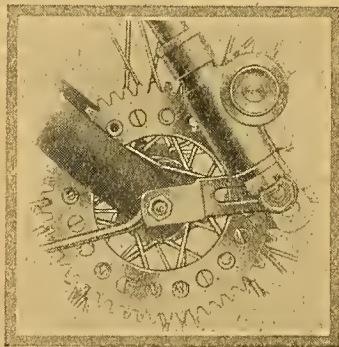
We are asked to state that the Albion revolving counter-shaft gear, described in our last issue, cannot be delivered until the middle of January. The correct title of the firm is the Albion Engineering Co., Ltd., Tower Works, Upper Highgate Street, Birmingham.

### Two-speed Hub Gears.

Those readers who were unable to examine the Lake and Elliot Millennium two-speed hub gear at Olympia can inspect the gear in running order at the London showrooms, 14a, Great Marlborough Street, Oxford Street, W. Mr. G. H. Smith is in charge here.

### Paris Salon.

We are informed by the organisers of the Petit Salon (Paris), which will open on the 14th inst. and close on January 3rd, that the price for space is 40s. per square metre, with a share in the profits. The organisers are prepared to find competent persons as stand attendants for the sum of 6s. a day. All correspondence should be addressed to the Manager, 2, Rue Blanche, Paris.

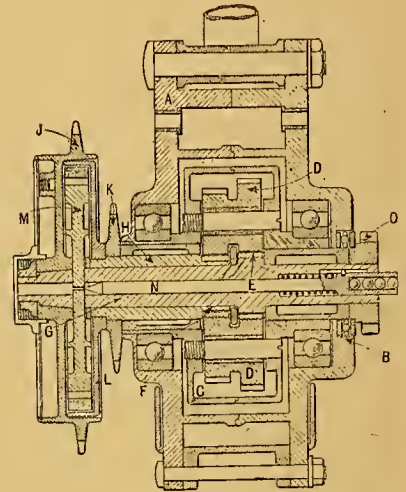


Showing details of Smith & Son's speedometer drive.



frame. The gear drum C is mounted in ball bearings in the plates AB, and is provided with spindles for compound pinions D, engaging corresponding pinions EF on the driving and driven shafts GH respectively. On the driving-shaft G is mounted a chain sprocket J driven from the engine, and the driven-shaft H is provided with a sprocket K transmitting the drive to the road wheel. Also upon the driven-shaft is screwed a clutch drum L, engaging clutch segments M carried by the driving-shaft. These segments are expanded by a taper rod N, operated by mechanism not shown, and when in full engagement with the drum L, the driving and driven-shafts are locked together and a direct drive obtained. The clutch drum C is surrounded by a band brake (not shown), which is engaged to hold the drum stationary for the low gear. The drive is

then from the sprocket J to the shaft G, pinion E, compound pinions D, and thence to the pinion F, driven-shaft H, and sprocket K. The driving-shaft is pro-



vided with a gear wheel O, engaging a toothed sector for starting purposes.—G. Wray, No. 24,801, 1911

## SPARKLETS



### British Motor Cycles in Canada.

Despite what has been said to the contrary, British motor cycles are rapidly gaining favour in Canada. The Matchless agent in Toronto, Mr. W. J. Porter, has just made an extensive tour on an 8 h.p. Matchless sidecar combination, and excellent business has resulted. Incidentally, Mr. Porter mentions that he has been agreeably surprised at the manner in which his machine has negotiated the very roughest roads which it has been necessary for him to traverse. The writer then goes out of his way to compliment *The Motor Cycle* on the large circulation enjoyed by this journal in Canada.

The first batch of 1913 Matchless motor cycles are leaving for Canada next month.

### An Automatic Carburettor Experience.

One of the most flattering testimonials we have heard concerning the Binks carburettor is from an acquaintance, who uses one on a 3½ h.p. 1911 standard model. The particular carburettor referred to was tuned in accordance with instructions and converted a machine which had previously been rather sluggish and difficult to control at slow speeds to a state of absolute docility, also it greatly increased the power at fast speeds. Our acquaintance told us he could attain fifty miles an hour on the road, while on Brooklands track he attained sixty miles per hour with a 5 to 1 gear, and with the same gear climbed the test hill. Even if the figures are only approximate, the results are wonderful.

### Catalogues Received.

XI'All, Ltd., 6-7, Moseley Street, Birmingham.—A booklet of "the scientific saddle" is to hand. In it are set forth solid reasons for every point of saddle construction adopted on the XI'All; the reading matter is consequently instructive to all.

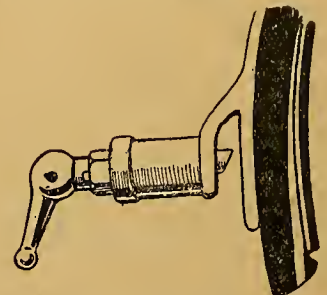
Woodgates Bros. (Tiverton) have just issued a list of Patchquick patches and repair outfits, which are so highly appreciated by motor cyclists.

Messrs The United Motor Industries, Ltd., 45, Poland Street, W., have just published a booklet of measurement tables which should be most useful to engineers.

Duocars Ltd. 76, York Street, Westminster, S.W.—The latest list published by this firm contains full particulars of the Duocar, which lately established the six hours' long-distance record at Brooklands, a really fine performance.

There comes a time in the life of tyres when they require retreading. The Hermetic reinforced tread is excellent for this purpose. The tread is manufactured by the Self-sealing Rubber Co., Birmingham, and their work in this direction is of good quality.

Compeer Motor Carriage Co., Colmore Road, Birmingham.—Catalogue of sidecars with bodies of different types.



Stand clip on the Monarch machine.



# "I congratulate

*Zenith Motors, Ltd., of Weybridge, on the intelligent way in which their exhibit is arranged."*



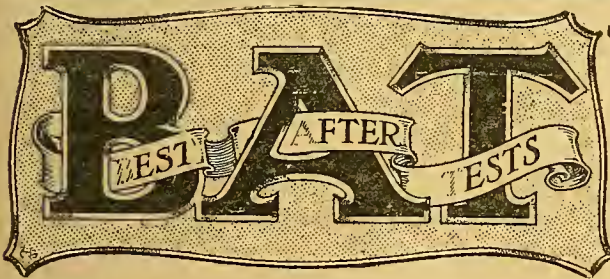
Thus writes "Kuklos," the well-known writer on motor cycling matters in "The Daily News." He proceeds:

"Every auto-cyclist has heard of the Zenith-Gradua infinitely variable gear, and the opportunity of seeing exactly how it is done should not be lost. There is nothing new, of course, in an expanding belt pulley, but everything is new and unique in the Zenith way of doing it, and more particularly in the scientific and ingenious way in which the belt is kept at the right tension, no matter how the belt-pulley on the engine may be varied. There are two standard models—3½, with J.A.P. single cylinder engine 85.5 by 85; and a 6 h.p., J.A.P., V-twin engine, 76 by 85. Tyres on the latter are 2½in. A special Zenith fitting is supplied for use with sidecars. The firm issue an eleven-page book containing nothing but a closely-printed list of Zenith successes in competition during 1912."

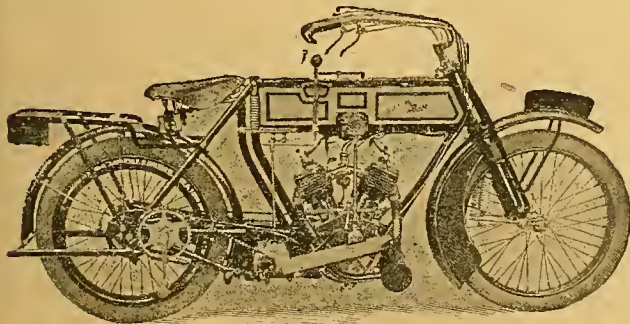
*Catalogue and list of 1912 successes sent free on request.*

**ZENITH MOTORS, Ltd.,**  
Weybridge, Surrey.

Choose a **ZENITH** and you will  
**congratulate yourself.**



"THE PULLMAN CAR OF  
MOTOR CYCLES."  
ON H.M. WAR OFFICE LIST.



## IT STANDS RIGHT OUT.

The "BAT" is a distinctive Motor Cycle; its Spring Frame—its Two-speed Gear—its Magneto position—its Foot-starter—its Ease of Control—its Comfort in Use, in starting, in stopping, in running—all combine to make it so.

Send for the Book of the Bat, and read of its features, before deciding on your new mount. Models from £62.

THE  
**BAT MOTOR MFG. CO.,**  
PENG, LONDON, S.E.

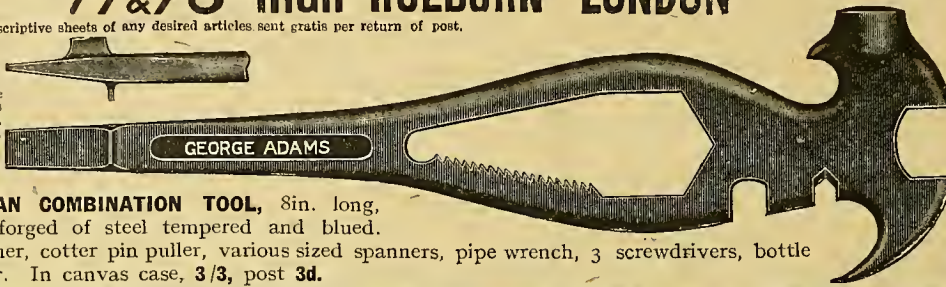


# GEORGE ADAMS

77 & 78 HIGH HOLBORN LONDON

Loose descriptive sheets of any desired articles sent gratis per return of post.

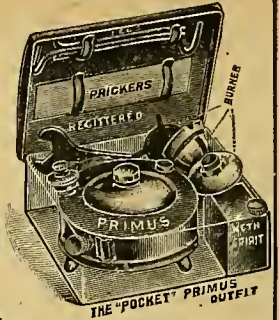
Complete  
Catalogue  
of Tools  
costs 8d.  
post free.



**VULCAN COMBINATION TOOL**, 8in. long,  
drop forged of steel tempered and blued.

Hammer, cotter pin puller, various sized spanners, pipe wrench, 3 screwdrivers, bottle opener. In canvas case, 3/3, post 3d.

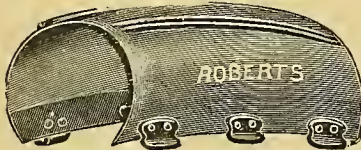
FOR  
TOOLS



## POCKET PRIMUS OUTFIT

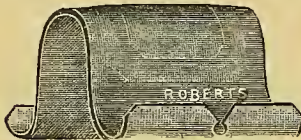
Measures  $5\frac{1}{2} \times 4\frac{1}{2} \times 2\frac{1}{2}$  in.  
Contains Primus wickless oil stove,  
spirit can, wind shield, etc.  
Complete price 10/6, post 4d.

### MOTOR CYCLE GAITER.



Strongly made and heavily rubbered, in 2in.,  
2½in., and 3½in. sections at 2/6 each.  
Postage extra.

### MOTOR CYCLE INSIDE PLASTERS.



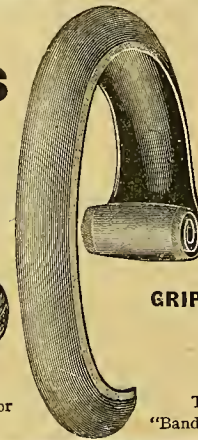
For 2½ & 2¾ Covers. 9d each. Postage extra

## ROBERTS' SPECIALITIES FOR MOTOR CYCLISTS.

### MOTOR CYCLE DETACHABLE BAND.



All sizes. 22/6 each. Postage extra. Invaluable for  
Winter Riding. Any old Cover may be used under it.



### MOTOR CYCLE LINER.

Made on the same principle as our  
Car Liner, but with flaps at side,  
Can be used in Cover after Cover,  
and will save its cost many times.

Prevents Punctures and Strengthens  
Weak or Worn Covers.

10/6 each.

## ALFRED ROBERTS & SONS, LIMITED,

GRIPWELL WORKS,

ST. MARY'S ROW,

BIRMINGHAM.

Telegrams:  
"Bands, Birmingham."

Telephone:  
Central 1298.

THE FAMOUS  
**BRAY RONI**

**Acetylene Burner  
for Headlights**

Gives, from a single gasway only,  
an atmospheric flat flame which  
cannot become distorted and crack lens  
or mirror.

The Burner is of the air-injecting  
type—it will not carbonise.

It is now fitted with a Pressure  
Check, which obviates flaring.

Send for descriptive booklet of the  
"Roni" Burner to

**GEO. BRAY & CO. LTD.**  
Dept. M. LEEDS.

## MOTO-REVE

### 1913. MODELS.

2 h.p. SINGLE,  
with 2-speed Gear.

2½ h.p. SINGLE,  
with 3-speed Gear and Clutch.

3 h.p. TWIN,  
with 2-speed countershaft gear and  
chain drive.

4 h.p. TWIN,  
with 2-speed countershaft gear and  
chain drive.

### LATEST SUCCESS.

JUNIOR OLYMPIC HOUR RACE,  
BROOKLANDS NOVEMBER 9th.

**G. LEE TEMPLE .... THIRD.**

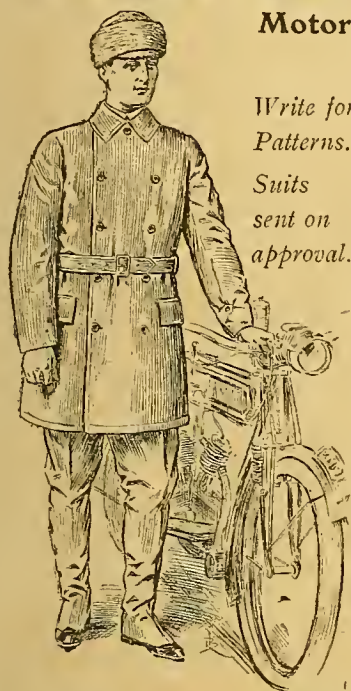
Riding the Smallest Twin in the Race—Non-Handicap.

The Moto-Reve Co., Ltd.,  
**ALPERTON, MIDDLESEX.**



# SELFRIDGE'S

Motor Cycles and all Accessories at the lowest possible prices.



Write for  
Patterns.

Suits  
sent on  
approval.

## Is the "Agros" Motor Cycle Suit in your Outfit?

The "Agros" Motor Cycle Suit (as illustrated) is made from our well-known "Agrosette" cloth, and is porous yet waterproof.

No rubber is used in the manufacture of this suit. It is made easy fitting, and the wearer is doubly protected from cold winds, etc., by having a large underlap neatly arranged in front of jacket. This underlap is invisible. The jacket is lined with warm fleece and is of an extra length to give good protection on the saddle.

This Overall is not seatless, but made on the principle of trousers, here again giving extra protection on the saddle.

It is made with inverted pleats at the sides, has strong leather straps to fasten under the boots, and is finished with a belt round the waist.

It is an admirable suit, and much in demand by Motor Cyclists.

All sizes, 75/-

A Cheaper quality Weatherproof, 60/-

SELFRIDGE & CO., LTD., OXFORD STREET, W.

## The Motor Cyclists' Cap



This Cap is exceedingly suitable for the Motor Cyclist, inasmuch as it can be worn either as an ordinary cap, or as shown in the illustration.

It is designed with a specially made elastic round the bottom part, which can be tightened or made loose at will. Another special feature is that it is absolutely waterproof, and about the lightest cap made. Our price 6/6.

## Motor Cycles and Sidecars.

We are now prepared to sell nearly every make of Motor Cycle and Sidecar on EASY TERMS OF DEFERRED PAYMENT.

We invite you to call and inspect our representative stock of Motor Cycles and choose yours. In the majority of makes we charge only 2½% on the balance after deposit has been paid. Payment may be extended over 12 months.

As we are now booking orders for the 1913 season, you will benefit by making early application.

# U.H.

## THE SIX DAYS' OBSERVATION TEST

of the Auto Cycle Union affords the U.H. Magneto another opportunity of proving its reliability and consistency. Mr. J. T. Gibbon, riding a 3½ h.p. Alldays fitted with a U.H. Magneto SUCCESSFULLY CONCLUDED the above test on Nov. 26. Specify a U.H. and relieve yourself of all ignition troubles.

S. WOLF & CO.,

115, Southwark Street, LONDON, S.E.

'Grams—"Widerstand, London."  
'Phone—5172 Central and 2734 Hop.

C.D.C.

## A BALL BEARING

is a delicate mechanism, and the finely finished surfaces of the balls and races are quickly ruined by wet and grit which soon work in when the motor cycle is ridden in wet weather.

HUB LUBRICANT is recognised as an ideal lubricant for ball bearings. Its special value, however, is in the protection that it affords against the ingress of wet and mud. HUB LUBRICANT is easily injected and it stays in and keeps wet out.

Hub lubricant is now being generally adopted for bottom bracket two and three speed gear boxes such as Bowden, Clyno, Douglas, Chater Lea, F.N., Bradbury, and James. It is quite different to the usual gear grease.

Write for H.L. Literature and 1913 Lists to—

**PRICES' COMPANY LIMITED**

(PRICE'S PATENT CANDLE COMPANY LIMITED)  
Lubricating Oil Department

**BATTERSEA, LONDON, S.W.**

Hub Lubricant—post free—½ lb. tins, 9d.; 1 lb. tins, 1/-



# PAGETS PLAN

Motor Cycle Purchase

**PAGETS have in Stock and for Early Delivery:**

- 5-6 h.p. **BAT**, 2-speed gear and chain drive.
- 5-6 h.p. **CLYNO**, 3-speed gear, chain drive.
- 3½-4 h.p. **NEW HUDSON** and Sidecar, 3-speed gear, belt and chain drive.
- 3½ h.p. **BRADBURY**, 2-speed gear, chain drive.
- 2½ h.p. **DOUGLAS**, all models.
- 3½ h.p. **TRIUMPH**, all models.
- 8 h.p. **MATCHLESS**, chain or double belt drive.

Also **INDIAN, ZENITH-GRADUA, RUDGE, SCOTT** Machines, etc.

**Sidecars - - - - - from £8**

£5 deposit secures any of the above machines, and the balance on Pagets Plan of deferred payments. Write to-day for particulars and price lists. Unbiased advice given as to best machine to suit your requirements. We pay carriage and crate.

**PAGETS**  
for Best  
Deliveries.

**PAGETS LIMITED,**  
10 & 11, Jermyn Street,  
Piccadilly Circus,  
London, S.W.  
Telephone—City 9134.

**PAGETS**  
for Sidecar  
Machines.



MODEL S for Motor Cycles.

## THE BLUEMEL MASCOT :: PLUG ::

**WILL** get the last ounce out of your engine.

**WILL** stand up to the hardest work it can be possibly put to.

**WILL** do so consistently for a greater length of time than any other plug.

**WILL** regularly fire the weakest mixture, and

**WILL** give you the much desired immunity from ignition troubles.

Write for List, Motor Cycle Dept.,

**C. W. BLUEMEL & BROS.**  
WOLSTON, near COVENTRY.

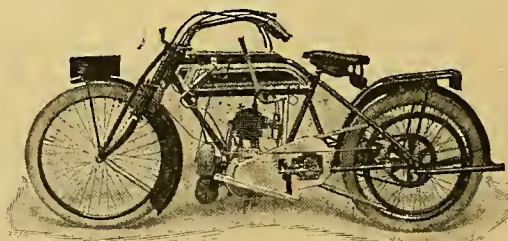
## "LINCOLN ELK" New Models, 1913.

Manufactured Completely by  
**J. KIRBY,**  
Broadgate, LINCOLN.

Telephone:  
454.

Telegrams:  
"ELK," LINCOLN.

Wholesale Agents for Scotland:  
**The North British Machine Co., Ltd.,**  
56 & 58, Great Clyde Street, Glasgow.

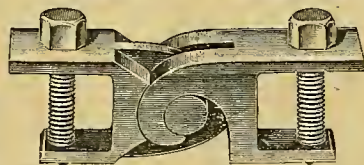


- 4½ h.p. 2-speed Model £45 0 0
- 3½ h.p. - - - - - £35 0 0
- 3 h.p. - - - - - £31 10 0
- 2½ h.p. - - - - - £29 10 0

All Models fitted with Palmer Tyres, Bosch Magneto, and Footrests. "Druid" Spring Forks.

Sole London Agent:  
**REY,**  
Heath Street Motor Works,  
5, Heath Street,  
Hampstead, London, N.W.

## AMAC BELT FASTENER.



PRICE  
**2/6**

ONE YEAR'S GUARANTEE. MADE OUT OF SOLID STEEL BARS. HARDENED—UNBREAKABLE.

**ASTON MOTOR ACCESSORIES Co. Ltd.**  
Telford Street, Aston, BIRMINGHAM.

## AMAC

## Books for Motorcyclists

**Motor Cycles and How to Manage Them.**

The standard Handbook of the Motor Cycle, Fifteenth edition, revised and enlarged, now on sale. Price 1/- net. By Post 1/3.

**Hints and Tips for Motor Cyclists.**

Full of useful "wrinkles" with regard to the care and management of motor cycles. 1st edition. Price 1/- net. By Post 1/3.

**The Motor Cycle Route Book.**

Contains best routes for the whole of the British Isles, 45 maps and speed limits. Price 1/6 net. By Post 1/9.

Obtainable (with remittance) from **ILIFFE & SONS LTD.,** 20, Tudor Street, LONDON, E.C., also from all Booksellers.



# ROBERTSONS

## SIDECARS

**FINEST STOCK IN LONDON.**

<b>BRAMBLE</b> , No. 6, with child's seat, plated chassis, dark blue body and upholstery, storm apron .....	£ s. d.	<b>BRAMBLE</b> , No. 9, dark purple upholstery and body, storm apron .....	£ s. d.	<b>TURNER</b> , No. 1 model, with grey body, hood, screeo, and luggage carrier .....	£ s. d.
	12 12 0	<b>BRAMBLE</b> , No. 9, black body, green upholstery, storm apron .....	12 12 0	<b>MILLFORD HERALD</b> , standard body .....	6 6 0
<b>BRAMBLE</b> , No. 5, racing model, black body, tan upholstery, storm apron .....	12 12 0	<b>MONTGOMERY</b> , No. 5, standard wicker body, green upholstery .....	13 10 0	<b>MILLFORD RIGID</b> model with No. 14 cane body .....	14 17 6
<b>BRAMBLE</b> , No. 9, black body, red upholstery, storm apron .....	12 12 0	<b>MONTGOMERY DE LUXE</b> , coach-built model, cantilever springs .....	22 15 0	<b>MILLFORD CABRIO</b> , No. 18, cane body .....	18 0 0
<b>BRAMBLE</b> , No. 7, red body and upholstery, storm apron ....	12 12 0	<b>MONTGOMERY</b> , No. 9, with standard wicker body, green upholstery .....	8 0 0	<b>MILLFORD HERALD</b> , No. 2, cane body .....	10 15 0
<b>BRAMBLE</b> , No. 2, plated chassis cream body, green upholstery, storm apron .....	12 12 0	<b>MONTGOMERY</b> , No. 8, with dark brown cane lounge body and red upholstery .....	14 0 0	<b>MILLFORD RIGID</b> , No. 8, cane body .....	11 11 0
<b>BRAMBLE</b> , No. 9, black body, tan upholstery, storm apron .....	12 12 0	<b>MONTGOMERY</b> , No. 7, with white cane lounge body, upholstered tan .....	14 15 0	<b>MILLFORD SPRING WHEEL</b> , No. 4, wicker body .....	14 10 0
<b>BRAMBLE</b> , No. 7, dark green body, red upholstery, storm apron .....	12 12 0	<b>MONTGOMERY</b> , No. 8, cantilever springs, wicker lounge body, green upholstery .....	13 5 6	<b>MILLFORD RADIAL CASTOR WHEEL</b> , No. 4, wicker body .....	14 10 0
<b>BRAMBLE</b> , No. 2, grey body, green upholstery, storm apron .....	12 12 0			<b>MILLFORD HERALD</b> , No. 1 body .....	7 15 0
				<b>MILLFORD RIGID</b> , No. 4 body .....	11 7 6
				<b>F.N. GIRDER FRAME</b> , lounge white cane body .....	11 11 0
				<b>MANNINGS LIGHTWEIGHT</b> model .....	8 0 0
				<b>MIDDLETON</b> , model B .....	6 5 0

**NOTE :** All the above can be fitted with Hood, Screen, Luggage Carriers, etc., etc., as extras.

ALSO A VERY LARGE NUMBER OF SECOND-HAND MOTOR CYCLES, SIDECARS, ETC., ETC.—WRITE FOR LIST.

## EXCHANGES—EASY PAYMENTS.

TO LONDON-EXETER COMPETITORS

**DISSOLVED ACETYLENE IS  
CHEAPER THAN CARBIDE,**

Besides being cleaner, quicker, simpler and more reliable.

Lamps, Horns, Speedometers, Whistles, Belts, Plugs, Overalls, Watches, Mirrors, Goggles, etc., etc., etc., of the best makes

ALWAYS IN STOCK AT—

**157, Great Portland St., W.**

Telephone: Mayfair, 5767.

# ROBERTSONS



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 14 words or less 1/3, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

### SECTION II.

York and Lancashire.

### SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

### SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

### SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

### SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

### SECTION X.

Scotland.

### SECTION XI.

Ireland and Isle of Man.

## THE BEST OF THE NEWEST

Introductions for the 1913 Season are now being exhibited at



## MOTOR CYCLES, CYCLE CARS, and SIDECARS.

London's Great Show of Unequalled Bargains in the most satisfactory New and Second-hand 1912 Models.

## INIMITABLE VALUE. MATCHLESS PRICES.

Study these specimens. Then call and see.

6143.	3 1/2 h.p.	1912	3-sp.	NEW HUDSON	£40	0
6147.	3 1/2 h.p.	1910	tourist	REX	£20	0
6152.	6 h.p.	1912		REX Sidette	£50	0
6153.	3 1/2 h.p.	1910	2-speed	P. & M.	£38	0
6157.	3 1/2 h.p.	1910	free-engine	TRIUMPH	£35	0
6160.	3 1/2 h.p.	1912	free-engine	TRIUMPH	£43	0
6161.	3 1/2 h.p.	1912	free-engine	RUDGE	£40	0
6163.	3 1/2 h.p.	1912		RUDGE multi and Gloria sidecar	£55	0
6169.	3 1/2 h.p.	1910	standard	BAT	£30	0
6170.	3 1/2 h.p.	1911	tourist	REX	£23	0
6177.	2 1/2 h.p.	1912	3-speed	HUMBER	£37	10
6179.	3 h.p.	1912	2-speed	N.S.U.	£30	0
6180.	8 h.p.	1910		ZENITH-GRADUA and sidecar	£45	0
6187.	6 h.p.	1912	2-speed	ENFIELD and sidecar	£65	0
6189.	6 h.p.	1912	F.E.	MATCHLESS	£47	10
6195.	3 1/2 h.p.	1911	2-speed	HUMBER	£30	0
6199.	3 1/2 h.p.	1911	free-engine	TRIUMPH	£37	10
6202.	7 h.p.	1911	2-speed	INDIAN and sidecar	£50	0
6204.	8 h.p.	1912	3-speed	CHATER-LEA and sidecar	£75	0
6205.	6 h.p.	1912	2-sp.	F.N. and sidecar	£55	0
6211.	2 1/2 h.p.	1910		DOUGLAS	£20	0
6212.	3 1/2 h.p.	1912		T.T. BRADBURY	£32	0
6226.	2 1/2 h.p.	1912	2-speed	DOUGLAS, Model K	£40	0
6227.	6 h.p.	1912	2-speed	MATCHLESS	£50	0
6229.	6 h.p.	1912		T.T. BAT	£37	10
6232.	5 h.p.	1911	twin	A.S.L.	£25	0
6234.	3 1/2 h.p.	1909		TRIUMPH	£25	0
6237.	5-6 h.p.	1911		A.C. Sociable	£50	0
6238.	3 1/2 h.p.	1912		ZENITH	£40	0
6239.	3 1/2 h.p.	1911	2-speed	N.S.U.	£30	0
6244.	3 1/2 h.p.	1912	2-speed	P. & M.	£52	10
6255.	3 1/2 h.p.	1912		F.E. TRIUMPH, new	£50	0
6256.	3 1/2 h.p.	1911	standard	TRIUMPH	£30	0
6257.	3 1/2 h.p.	1911		F.E. TRIUMPH	£35	0
6244.	2 1/2 h.p.	1912		SINGER	£30	0
6249.	3 1/2 h.p.	1912	2-speed	BAT	£40	0
6251.	3 1/2 h.p.	1912	standard	HUMBER	£35	0
6252.	5-6 h.p.	1909	4-cylinder	F.N.	£20	0
6253.	3 1/2 h.p.	1908	2-speed	N.S.U.	£20	0
6258.	3 1/2 h.p.	1912		ZENITH and sidecar	£45	0
6259.	3 1/2 h.p.	1909	2-speed	HUMBER and sidecar	£25	0
6264.	6 h.p.	1912	2-speed	MATCHLESS and Canoelet sidecar	£65	0
6276.	8 h.p.	1912		ZENITH and sidecar	£60	0

## WAUCHOPE'S

9, Shoe Lane, Fleet Street, LONDON, E.C.

'Phone: Holborn 5777.  
Wires: "Opifcer, London."

## IMPORTANT NOTICE.

Owing to the Christmas Holidays, the issue of "The Motor Cycle" for Dec. 26th will be closed for press earlier than usual. All copy and instructions for paragraph advertisements in this Issue must therefore be in our hands not later than first post on Thursday, Dec. 19th.

## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Hiffe & Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

1912 21h.p. 3-speed New Hudson, lamp, horn, all spares, as new: Offers.—Below.

1912 F.E. Rudge and Gloria sidecar, Lucas lamp and horn, reflector, Jones speedometer; sell separately.—Thompson and Edwards, West Hartlepool. [X4328]

WERNER, 3h.p., good condition, B.B., h.b.e., Whittle belt; £10.—J. Rohson, Mortimer St., Blackhill, Durham. [X4235]

31h.p. Dene, perfect condition, absolutely reliable, 32 spares; £24.—Urwin, 24, Tenth Av., Heaton, Newcastle-on-Tyne. [X4485]

1913 Douglas, Zenith, New Hudson, Rover, Smith, Precision motors: send orders now for early delivery.—C. W. Smith, Northgate, Darlington. [0177]

31h.p. Humber Motor Cycle, 2-speed gear, with close 32 cane torpedo sidecar; a bargain, £36; to clear without sidecar £30.—Turvey and Co., The Motor House, Sunderland. [X4324]

31h.p. Triumph Motor Cycle, free engine, 1911 model, £2 sold new in Mar. 1912; in grand running order; £37; with sidecar, only used twice, £42.—Turvey and Co., The Motor House, Sunderland. [X4325]

23h.p. Humber Motor Cycle, T.T. twin, 3-speed, 1912 4 model, extra large tank, practically new, not ridden 400 miles, very fast; a bargain, £42, to clear.—Turvey and Co., The Motor House, Sunderland. [X4326]

31h.p. B.S.A. Motor Cycle, 1912, T.T. model, has won 32 several prizes in speed trials, has done over 70 m.p.h., in perfect condition; a bargain, £40.—Turvey and Co., The Motor House, Sunderland. [X4327]



# THE MOTOR CYCLE

ESTABLISHED IN 1903

AND FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

FIVE HUNDRED AND EIGHTH CONSECUTIVE ISSUE.

Subscription Rates : Home, 6s. 6d. ; Canada, 8s. 8d. ; Foreign, 17s. 4d. per annum.

UNITED STATES.—The International News Agency, New York.  
 AUSTRALIA.—Gordon and Gotch, Ltd.; Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania).  
 NEW ZEALAND.—Gordon and Gotch, Ltd.; Wellington, Auckland, Christchurch, and Dunedin.  
 SOUTH AFRICA.—Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

## Next Year's Reliability Trials.

THE proposal to combine the English and Scottish Trials next year has drawn various opinions in our correspondence columns which form interesting reading. Undoubtedly past events have shown that present day motor bicycles are more than equal to a Six Days' Trial over ordinary roads, and the percentage of successes in the Taunton Trials suggested that a trial of longer duration would be an advantage if we are to have a convincing demonstration of the machines which stand out as the best of their type. On the other hand, there are many objections to such a long distance trial, one of which is the obstacle which will be placed in the way of amateur riders who will not only find it almost impossible to spare the necessary time, but may further consider such a test quite unenjoyable, by reason of its strenuous nature. The expense, too, will be considerable. Further, the possibility of such a long distance trial being too much of a physical strain for the average rider must be considered. It is quite true, as a correspondent has mentioned, that last year competitors were only too glad to reach the last day, for even the Six Days' Trial had been rendered particularly severe by reason of the adverse weather, and there is no manner of doubt that if such a trial had been prolonged to twelve days many would have been incapable of surviving it, even if their machines had been equal to the task. It might be argued that the fatigue experienced by a rider is due to the unsuitability of his mount in the matter of springing and comfort, which is true to some extent. It is generally agreed that the annual reliability trials should be made as severe as possible, yet it would be most unfortunate if by reason of the physical strain upon a rider a machine had to be withdrawn. That being so, the first duty of the organisers, should the combined test be approved, is to provide that drivers may be changed. Perhaps it would become too complicated if two drivers were allowed to compete on alternate days, and it would further tax hotel accommodation, so that probably the simplest rule would be to provide that the driver may be changed at the end of the first week.

If, as is suggested, the English trial be conducted from a centre as last year, and the Scottish trial be arranged for the succeeding week on entirely different ground, it would be a comparatively simple matter to

arrange for prospective contestants to enter for the English Six Days' Trials or the Scottish Six Days, or both if they felt sufficient confidence in themselves and their machines to survive such a strenuous ordeal. The fees would, we take it, be similar.

Motor cyclists are inclined to look upon the annual reliability trials as ordinary daily jaunts, and the discussion as to whether a twelve days' trial may prove too much of a strain does not appear at first sight a good advertisement for the pastime, but a study of the mileage chart will show that the distances arranged for each day are much more than the average tourist would plan on a pleasure trip. Let any doubters keep this up for six days, add the mental strain to the rider of the fear that something might happen to his machine (for his reputation depends upon success), and remember that he is, perforce, constantly on the alert owing to the fact that he is riding on strange roads with possible single-figure gradients to encounter at any moment, and their opinion must change. By reason of the dates being separated, makers are able to overhaul their machines completely after the first event, and it is clear that with this attention many a motor cycle of doubtful reliability can survive both ordeals, though if the two events were rolled into one a different tale would no doubt have to be told. There would be less chance of a simply lucky survival in a twelve days' test. When one considers that most of the leading manufacturers support both events, we are inclined to favour the dual event being run conjointly, with the two provisos that (1) entries may be made in either or both events and (2) that drivers may be changed in the case of a manufacturer entering a machine for the combined event.

Whilst on the subject of trials, we think we may reasonably suggest that more care be taken in the matter of selecting test hills. Motor cyclists do not desire machines which will climb sheep tracks, and seldom, if ever, wish to attempt to ride over an exceptionally hilly road strewn with boulders. We suggest that those, whose duty it is to select the hills in these trials, should be guided by the ordnance map, and that no hill should be included unless marked in this map as a first class or secondary road. We have always urged that the severest tests should be included in the annual reliability trials, but we do consider it of paramount importance that the road surfaces should be reasonably passable.



# BROOKLANDS IMPRESSIONS.

## Ten Guineas for Timing a Magneto. Predictions for 1913.

By S. L. BAILEY.

"Neither a great fact, nor a great man, nor a great poem, nor a great picture, nor any other great thing, can be fathomed to the bottom in a moment of time."—*Ruskin*.

IT is with something more than regret that I bid farewell to Brooklands, the awakener of idle dreams, the conqueror of engines, the Waterloo of designers, for it is here I, like many others, have fought numerous battles, not always victorious, but nevertheless always interesting. It is here, too, that I have competed with some of the finest sportsmen it has ever been my good fortune to meet.

But Brooklands is not always serious. The whole atmosphere is full of humour—jokes cracked by knuts, appreciated by knuts; tales of motoring by motorists with a motoristic spirit, and wheezes of every kind by king fakists.

### An Interesting Personality.

Perhaps the most prominent of these was "Sparking Billy," the magneto expert, whose ability to increase the speed of any good engine by five miles an hour was, according to Billy's statement, vouched for by Charlie Collier, G. E. Stanley, and the drivers of the Grand Prix Sunbeams. "Sparking Billy" was in much demand; his success was reported as phenomenal; his fee was the inconsiderate sum of five guineas, but one, evidently of Hebrew origin, gifted with persuasive powers, obtained reduction to the nominal sum of five shillings. But, alas! there came a change. A certain owner-driver, who had obtained a very satisfactory second place at the B.A.R.C. Meeting, and had heard of "Billy's" marvellous deeds, sought his services. On being approached "Billy" was quite prepared to give the necessary extra speed required to win the next event, for a matter of ten guineas. "Billy" always spoke of guineas—it was more professional. The owner was quite satisfied, so "Billy" set to work. Those in the know anxiously watched the finish, with an expression of expectation that surpassed the Fry's chocolate boy. Expectation suddenly changed to disappointment, for the car on which "Billy" had operated was amongst the "also ran." Evidently "Billy" also ran, for he has never put in an appearance from that day to this.

### Brooklands as an Experimenting Ground.

I wonder just how long it would take to conquer Brooklands, to realise one's most idle dream of speed? I should like to spend next season on this famous track, for, like everything else worth experimenting with, it takes time, though doubtless it will come as a surprise to some readers to learn that Stanley, the most successful rider this season at Brooklands, frequents the track less than any other rider I know.

Speaking of riders brings home to me, after an intimate acquaintance, just how little the majority of Brooklanders know of petrol engines. Perhaps I might mention Brewster and Stanley as two of the cleverest; the others are much in the same class, and merely play with carburettors, timing, and compression ratio, or think of some absurd "wheeze" or fake without the least technical knowledge. Probably they obtain speed

by the merest accident, do something sensational, and for a time are in the lime-light. But let them have the misfortune to break up that particular engine, and what do we find? They practically disappear from the successful list. My contention is—that a good rider understands what he is doing, and why he gets speed, so is always in a position to equal his past performances. For proof, where are the riders so much in evidence last season?

I do not wish here to touch upon such subjects as "How to Time" or "How to Get Speed," but hope to do so in a later issue, when I shall deal with points probably unthought of by the majority of riders.

### A Prediction for Next Year.

I predict that the 1913 season at Brooklands will show the distinct merits of the twin engine, with a speed of not less than 80 m.p.h. in the 500 c.c. class, while much better advancement will be shown in Class B with twin engines of 350 c.c., for 70 m.p.h. will not seem fast for the little lightweights.

For engines of 1,000 c.c., I doubt very much if Charlie Collier's record of 92 m.p.h. will be equalled, and I expect very little improvement in the single-cylinders. I fancy I can see smiles at this prediction, but I know at present of one 350 c.c. twin which develops 12 h.p., and whose speed is already known to a select few. This little twin engine will, I think, soon surprise many.

I regret that business compels me to leave Brooklands, the ideal testing ground, the finest track in the world (though admittedly not the fastest)—indeed, the School of Motoring, where none are too learned to be taught.



The writer of the accompanying article, who is leaving for Australia to-day (Thursday), is seen shaking hands with W. W. Douglas. On the right will be recognised W. H. Bashall, the Junior T.T. winner.



OCCASIONAL  
COMMENTSBY  
"IXION"**1913 Carburetters.**

Nothing impressed me more at Olympia than the carburetters. The leading types showed an extraordinary sympathy with our practical needs, and a bewildering wealth of ingenuity. The advance since, say, 1909 is colossal. I must admit that there is an equal advance in metallurgy and in the whimsies by which high engine efficiency is procured; but that is less obvious—you have to take the machine on the road to discover it, whereas a cute observer can estimate the value of a carburetter when a section or a drawing is put in his hand.

**Spring Handle-bars.**

I was particularly pleased to see that a few makers are coquetting with spring handle-bars. I used such a bar on a rigid framed machine nine or ten years ago, and though it was of pretty crude design, I am bound to say that it afforded more comfort, in spite of the rigid fork beneath it, than many a modern spring fork with rigid handle-bar.

Crude devices are apt to be rather "jiggety," owing to the spring action being unduly rapid; but it should not be difficult to combine a refined spring handle-bar with a refined spring fork, designing the two to act in co-operation, after the fashion of the main and supplementary springs of a car chassis. The gain should be equally great in both instances.

Another minor fitting which took my eye was the Air Spring saddle-carrier. Pneumatic springing is generally less bounceable than the metallic type, and this particular patent possesses the great merit of being adjustable. In theory, of course, coiled metal springs can be made of any desired tension, but in practice, so far as machines and forks are concerned, the same springing is generally supplied to heavy men and light.

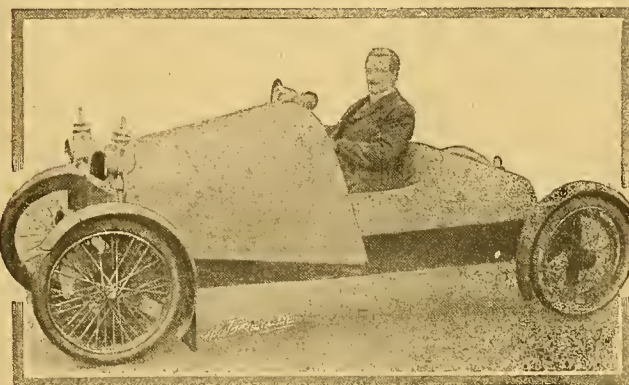
**The 1913 Trials.**

Critics must remember that the organisers of the chief annual trials are beset with many difficulties, of which hotel accommodation is one of the worst. Few towns can accommodate between one and two hundred additional visitors in the busy summer season, and owing to past hooliganism many hotels and a few towns are not at all eager to receive us. Unless discipline be considerably stiffened next year, it will soon become impossible to find six or ten hotels ready to accommodate the Trials for a night apiece. If we are limited to a single headquarters, with the consequence of routes radiating from a centre, the monotonous repetition of mile after mile of flat road is inevitable. In the public interest it is highly desirable that separate English and Scottish Six Days' Trials should be retained. The amalgamation of the two events into a ten days' trial necessitates the elimination of many trying roads, increases the factor of luck, and reduces the amateur entry.

*Per contra*, the amalgamation would be very welcome to the trade, would diminish the time of absence of the chief riders from the works, reduce expense, and penalise a few machines which complete a six day event in rather a decrepit condition. Nevertheless, until quality improves still further, I prefer the two separate trials. 2,000 miles are better than 1,500, amateur entries are more instructive than trade entries, the chance of bad weather is increased, the advertisement is spread over a larger area, and the additional cost is not really appreciable when it is distributed over such a gigantic output.

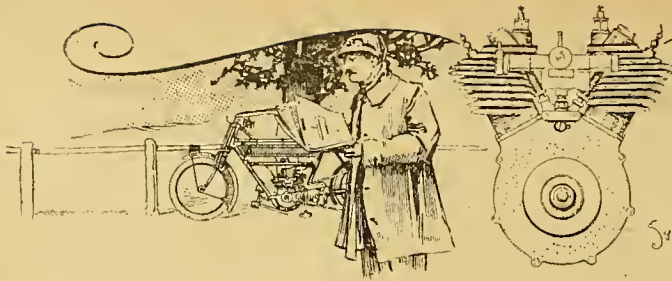
In the near future it may be necessary to limit the number of entries; and it is certainly desirable that each firm should stand or fall by a couple of entries—one professional and one amateur. At present it is possible for a firm to enter a fleet of machines, and for the failure of five machines to be over-shadowed by the success of a single survivor. I recall an actual example of this kind which occurred some years ago. A team of machines was entered, and by the fourth day all the machines, with one exception, had retired with various mechanical troubles. The survivor's engine was in rather a shaky condition, and he wired the firm to say that he thought he would do better to retire after the luncheon interval. At lunch he received a wire imploring him to crawl round to the finish somehow, if he had to do it on one wheel and one cylinder.

He persevered, and on the last day happened to snatch a useful advertisement by a feat compounded of luck and skill. This feat was well boomed, and it is safe to say that within a month the superficial public had forgotten the fate of his fellow teamsters, and the one solitary and somewhat fluky achievement was alone remembered. A longer trial would, of course, prevent shaky machines of this type gaining the maximum award.

**A LIGHT FOUR-CYLINDER RUNABOUT.**

The Parnacott, which is propelled by a four-cylinder air-cooled F.N. engine.  
It is very lightly built.





## CONCERNING POWER UNITS.

**N**OW that the Motor Cycle Show is a thing of the past, those of us who are critically-minded are left wondering what are the most striking features that are likely to gain ground in the coming year. Out of a blurred background of dull sameness a few points stand out vividly, and it will be my endeavour to group these points, and where possible to explain the why and wherefore of their existence. To deal with all new features would be tedious, and require more space than I could reasonably expect from Mr. Editor. Therefore this article will be confined to engines, which subject in itself is so large that only a few points can be dealt with, and those briefly.

On the whole there is disappointingly little alteration in 1913 engines, and the reason of this is only too obvious. There is such a large demand for motor cycles at the present time that the manufacturers can sell all they can produce of their standard models without going to the expense of experimenting with new patterns. Who can blame them? For is not the present-day motor cycle a wonderfully reliable and satisfactory machine?

When the demand has been supplied and the slack time comes, we may expect some radical improvements, many of which are now being tried by small firms whom the public refuse to recognise, as their names are at present little known.

These reasons will account for the majority of innovations being found on machines made by small manufacturers, and possibly for the lack of headway which these innovations have made so far.

### Valves.

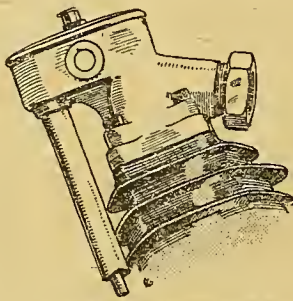
There is very little change in the matter of valves, though in some cases they have been considerably enlarged,

and the lift decreased so that quieter valve movement may be obtained. This looks like a step forward, and one that might be more largely brought into prominence. The chief criticism which may be brought

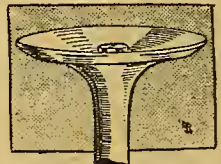
against it is that in the case of the exhaust valve there is a somewhat larger surface to be raised against the pressure in the cylinder. This objection has been cleverly got over by Mr. de Lissa, whose new valve shown on a Motosacoche was one of the most interesting novelties in the Show. For the benefit of those who were unable to get to Olympia, or who missed this item, it may be useful to explain that the valve has two seatings, one in the usual place and one directly above in the head. Thus the valve forms a hollow piston, and is held on its seatings by a powerful spring from above, but operated in the usual manner. In this case the pressure in the cylinder has little effect on the valve gear, tending slightly to open the valve instead of closing it. The device has the additional advantage of exposing a large surface of the valve to the atmosphere and thus cooling it considerably (it was for this purpose that the valve was designed). The tension of the valve spring may be controlled from the handlebar, and thus a decompressor action is obtained, since if the spring pressure be weak the valve opens slightly under pressure. One would naturally think that the two seats would be likely to cause compression leaks, but from all accounts this is not so, as the valve automatically beds itself into both seatings.

### Position of Valves.

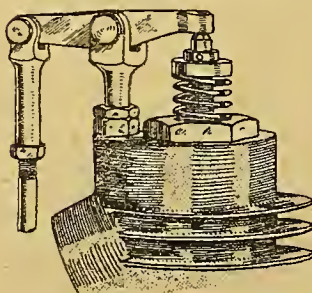
There is a slightly increasing tendency to place the inlet valve over the exhaust, there being quite a dozen different engines so fitted. The obvious advantages of this design are that the waste heating surface is



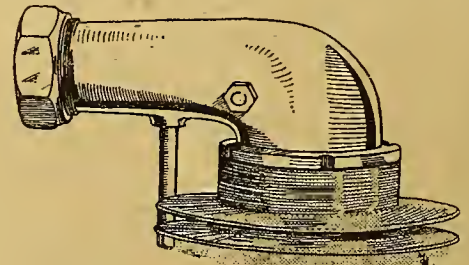
7 h.p. Motosacoche enclosed overhead inlet valve gear.



Valve fitted to the Diamond. This is notable for its large diameter and sunk head.



Quadrant overhead inlet valve mechanism.



J.A.P. enclosed rocker gear on overhead inlet valve engine.

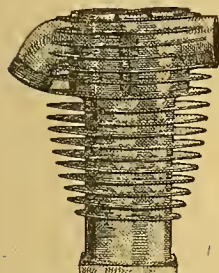
reduced, and that the incoming charge cools the exhaust valve head. However, in only one case are the inlet and exhaust valves interchangeable.

Designs which embody both valves in the head do not appear to be gaining much ground, though the Pope and the new Moto-Rève are newcomers in this



**Concerning Power Units.—**

class: The public seems to be afraid of the valves breaking and causing serious damage to the engines. There is a certain amount of reason in this, as up to the present time valve failure and consequently a broken piston have been only too frequent. It must not, however, be imagined that it is impossible to turn out a good touring engine on these lines, for with an increase in valve diameters and better cooling there is no reason why valve breakages should not become almost extinct, added to which in only two cases out of eight in the writer's experience has a broken valve led to further damage.



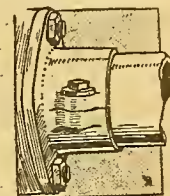
Deep radiating ribs on the overhead valve Precision.

An air-cooled Precision model and the water-cooled Green-Precision are constructed with both valves overhead, and they will be watched with interest, for Mr. F. E. Baker is not the man to place new models on the market unless he is confident of their success. The design lends itself to the construction of the best possible form of cylinder head, *i.e.*, spherical, or failing this spheroidal, though as yet there have been but few attempts to secure this end. Side by side valves still outnumber by far any other form, probably because they are easily made interchangeable and may be operated by simple mechanism, thus saving some moving parts which usually become noisy after a time. There is also very little fear of damage being done should breakage occur, and finally the public has become accustomed to this type of engine, which has proved itself satisfactory time and again.

**Two-stroke Engines.**

The next type of engine which comes under notice is the two-stroke, in which valves are generally replaced by ports in the cylinder walls which are covered and uncovered at certain times by the action of the piston. The two-stroke movement is gradually growing stronger, and the writer has a firm belief in its future in one form or another. To begin with, it does away with the complication of valves, and con-

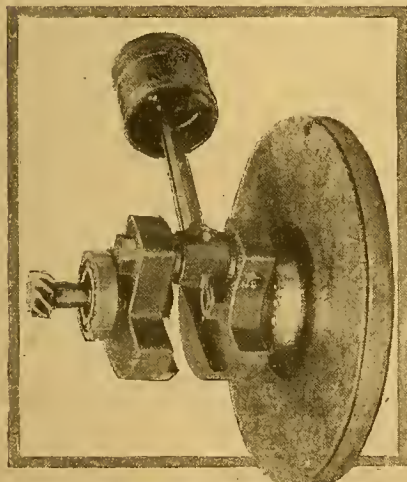
sequently with any noise made by them, and with the extra cost of valve timing gear, rockers, etc. Against these advantages must be set a somewhat increased consumption of oil and petrol, a tendency to overheat if the cylinders are of large capacity, and in some cases decreased efficiency per size. All these disadvantages are, however, being rapidly overcome. Thus we find the Levis winning a petrol consumption trial, another machine of the same make taking a sidecar and passenger through a strenuous reliability trial, though it was fitted with a single-cylinder air-cooled engine of only 70 x 70 mm. bore and stroke. Again, we find the Scott, the holder of the Tourist Trophy, is now fitted with an air-cooled head, the water-cooled head being discarded. The Connaught is a newcomer and looks a very nice piece of work, while the water-cooled Stellar is interesting in many ways, being, as it is to all intents and purposes, a two-wheeled car. The Wooler was to be seen last year, but has been somewhat improved, and is very interesting on account of its decidedly unconventional design.



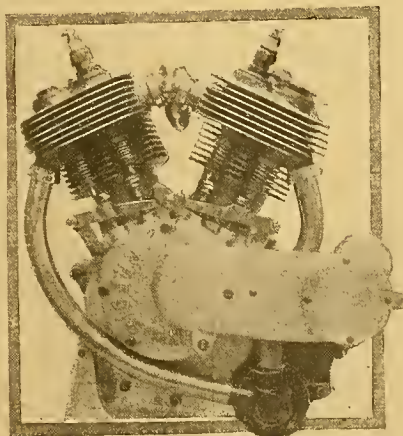
Quickly detachable inlet pipe on 7-9 h.p. twin Premier.

**Outside Flywheels.**

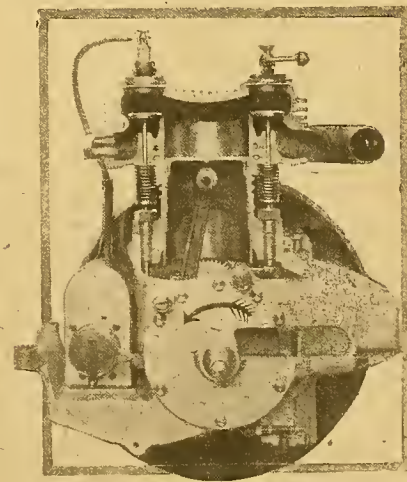
Outside flywheels have made but little progress, and here again public feeling shows itself, for though people appear to put up with the outside flywheel as a feature of two strokes and engines of unusual design, they do not care for it on a standard machine. It is true that, with two exceptions, it is some time since a vertical four-stroke engine has been offered with an outside flywheel, but this is probably because the manufacturer dare not do it. This is curious, especially after the constant successes of Douglas machines, and the smooth running of the Williamson, A.C., and Veloce. With a well-designed outside flywheel a considerable saving of weight may be effected and a solid crankshaft used. At the same time, there are no internal flywheels to throw the oil in the crank case away from the big end bearings, and thus shorten the life of this already much misused part. Much could be written on this subject from both sides but space



Piston, connecting rod, crank-shaft and friction disc of the Girling utility car.



8 h.p. twin-cylinder Precision engine showing adjustable tappets and external valve lifters.



Section of 5-6 h.p. air-cooled engine fitted to A.C. sociables. Observe position of valves.



### Concerning Power Units. —

forbids. I leave the field, however, with an appeal to both manufacturers and public to consider the merits of the outside flywheel before condemning it on its very slight demerits.

### Cylinder Design.

Detachable heads are to be found on a few machines and have the advantages of greatly facilitating the removal of carbon deposit and simplifying valve grinding. These features can also be claimed by certain engines which have detachable valve seatings. Other advantages are also claimed which are too deep to discuss in an article on general design. The Star and Pope are two new machines at Olympia, both fitted with detachable heads.

Against the design may be mentioned the difficulty of making the joint compression tight, but this should not prove serious to any firm capable of building a sound motor cycle engine. Offset cylinders have not become anything like standard practice, though the B.S.A. and little Norton are now so fitted. It is probable that the advantages are not fully realised, or else the advantages obtained are not considered sufficient to warrant the trouble of redesigning present models.

### Lubrication.

Lubrication is possibly the point which is in most pressing need of attention. The present form of splash lubrication works, and that is all that can be said for it. In the hands of an expert, splash with hand pump or drip feed is tolerable, but used as it is by thousands of motor cyclists who give a pumpful every so many miles, or set their drip feeds and leave them, regardless of pace and roads, it is bad and unmechanical, especially as motor cycle bearings (in particular; big ends) are nothing like large enough.

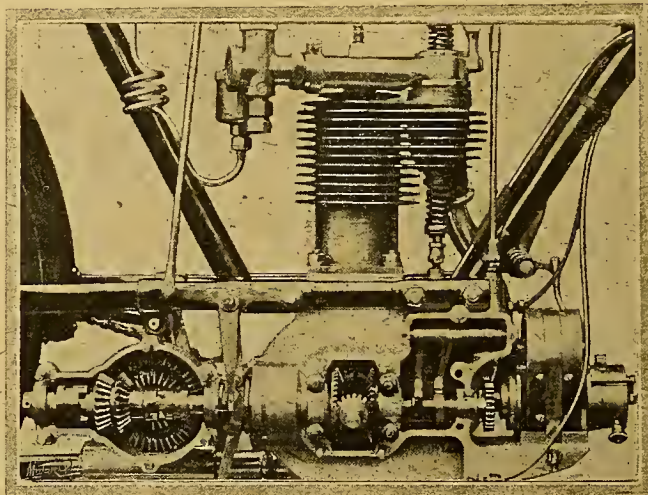
Bearing pressures have been greatly increased during the past few years, and the big ends of many singles and most twins require attention after an absurdly short amount of running. There are obvious difficulties in the way of increasing bearing sizes in the modern light motor cycle engine, so why is not more thought given to increasing their life by the obvious remedy of forced lubrication? There are a few praiseworthy efforts to use the centrifugal action of the revolving parts, and a few more which use a mechanical oil pump to feed some parts of the engine, but they do not go far enough by a very long way. Shame to relate, firms who force oil under mechanical pressure to all their engine bearings can be easily counted on the fingers of one hand, so that it was with joy that I read the description of the new Enfield in the pages of *The Motor Cycle*. I have been fortunate enough to ride a W.D. on more than one occasion, and found that it had a silky feeling peculiar to it, which can only be accounted for by proper lubrication, and its worst enemies could not accuse it of being a dirty engine. In fact, after a strenuous run, I have seldom seen a cleaner crank case. One hears people grumble about the extra complication caused by an oil pump, but this objection is futile, for an oil pump is a simple piece of mechanism and runs under ideal conditions. Let us hope that during the coming year manufacturers will devote some time to this most important item, which will make motor cycles reasonably fool-proof.

### Bearings.

Roller bearings are being fitted to many machines this year; especially are they noticeable in big ends. They score over ball bearings because they give line instead of point contact, and over plain bearings in that they are not liable to seize from under lubrication, and also produce rather less friction. In at least one case they are fitted in the small end bearing, and this seems an excellent place for them, for the small end bearing seldom gets sufficient oil for proper lubrication. The construction, however, must be carefully carried out, or there will be undue weight added to the reciprocating parts. The Pope engine is interesting in that the gudgeon pin is fixed in the connecting rod and oscillates in the piston, a design which has some distinct advantages.

### Cam Gear.

There has been little alteration in the methods of driving cam gear and valve operation, and there are no signs of chain cam gear becoming popular as on cars. The cause of this is that motor cycle timing wheels produce so little noise that alteration is unnecessary. The timing gear on the Diamond is



Diamond power plant, showing bevel gear drive and method of operation.

unusual, being driven by bevels. The whole of this machine is most interesting, and it had the distinction of being fitted with the largest valves for its size in the Show, the port measurement being  $1\frac{3}{4}$  in. ( $44\frac{1}{2}$  mm.), though the bore of the cylinder is only 75 mm.

The timing gear on the twin Brough is also unusual, as instead of one cam being fitted for both inlet and exhaust valve on each cylinder, one cam actuates the inlet valves on both cylinders and one the exhaust; this ensures synchronised valve timing and enables the timing of the inlets to be varied with respect to that of the exhaust.

### Cooling.

Except in a few instances cooling has received but little attention. Water-cooling does not seem to catch on, and curiously enough most twins still have their ribs set at right angles to the cylinder, whatever may be the angle of the cylinder to the vertical. Some Precision models have considerably increased cooling



**Concerning Power Units.—**

surfaces, but on the whole there has been little change in this direction.

**The Low Engine.**

The Low engine attracted a considerable crowd throughout the Show. The cylinder is now partly jacketed with petrol, the head being water-cooled. The heated petrol attains great pressure, and is injected during part of the stroke through a rotary valve. Both inlet and cut-off of this valve are variable. Oil is pumped through the rotary valve and to all important moving parts. The chief feature of the engine is the extraordinary power produced for the size, and its compression of approximately 500 lbs. per square inch. The design is extremely clever and new as applied to motor cycles.

**Decompressors.**

Decompressors are becoming almost standard features, and many and wonderful are the methods employed to reduce the quantity of the charge for starting purposes. Considering the ease of starting on modern motor cycles one is inclined to wonder if it is worth the trouble. Certainly it is a useful refinement, especially on a single-gear mount.

**Moving Parts.**

Pistons, connecting rods, and moving parts remain altered in detail only. It is curious that the solid crankshaft has not a greater vogue, as it removes a fault which is more common than is generally believed. Crankshafts of the present built-up type often get slightly out of line, thus causing excessive wear, vibration, and loss of power. Probably the reasons for not fitting solid cranks are cost of manufacture, and the difficulty of fitting a split big-end to a machine with inside flywheels.

**The Unit System.**

There are a few 1913 machines which have the gears built in the crank case or an extension thereof. This is a practice which the writer particularly admires, as it makes a very neat and compact unit with fewer crevices to catch mud and also saves a certain amount of machining.

The Villiers is a new example of this type, and is very neatly designed. It has a silent chain drive from engine to gears which is a point well worth the attention of manufacturers in general, as the silent chain is somewhat more suitable for running at high speed.

UBIQUE.

## Methods of Finding Winners in Reliability Trials.

THERE are no doubt many motor cyclists, keen riders, who would enter the many club competitions held every year now were it not for the absurd systems of finding first prize winners. Reliability trial riding has reached a fine art, and more depends upon the rider's watch than the machine. as was shown in a recent Midland trial, when a rider of a single-geared Triumph obtained full marks, but was placed fifth in the awards behind four variably geared machines, thus allowing a creditable performance to go practically unnoticed, because he was at a secret check fifteen seconds out of time. In every big competition we find that so many riders obtain maximum marks, and a winner is obtained by a secret check; supposing a trade man wins, he advertises the fact that in such and such a competition his machine made the best performance of the day when he has really done no better than the other competitors who obtained full marks. Anyone who has tried riding through secret checks dead on time will find, when he imagined himself to be absolutely to the second on passing the check, that the results show him to be very much out, to his great surprise.

**Timing by Competitors' Own Watches.**

Some clubs have tried various ways of finding a winner in reliability trials. Flexibility climbs are sometimes adopted, but this is not fair to all riders, because machines differ, and all are not suited to slow conking climbs on hills.

A good idea is timing by competitors' own watches in sealed cases, the time being taken to the minute and second. This rarely results in a tie, and a man knows what time he is arriving at a check, and in the event of his watch gaining or losing there is no difference, because he is timed by *his time*. This practice is used by the Bradford and two Birmingham clubs with success. First prizes in club events, apart from such trials as hill-climbs, speed trials, consumption tests, etc., which clearly give a winner, are un-

necessary, in my opinion. Let the club give a decent medal to all who gain full marks in reliability trials, and it will find a better feeling existing among the competitors and bigger entries for its competitions. Give special medals for amateurs, and let the amateur see that he is being fostered. I am speaking now of the *bonâ fide*. Should any competitor shine conspicuously over the others and be the only one to gain full marks, make him by all means the winner. In this case he would certainly be entitled to receive the honour, but secret checks are an abomination. Suppose the A.C.U. adopted them in the one day trials, etc. What would the trade say? And it is clearly shown in A.C.U. trial that one machine can perform equally as well as its rival, hence the satisfaction obtained by the trade from these events.

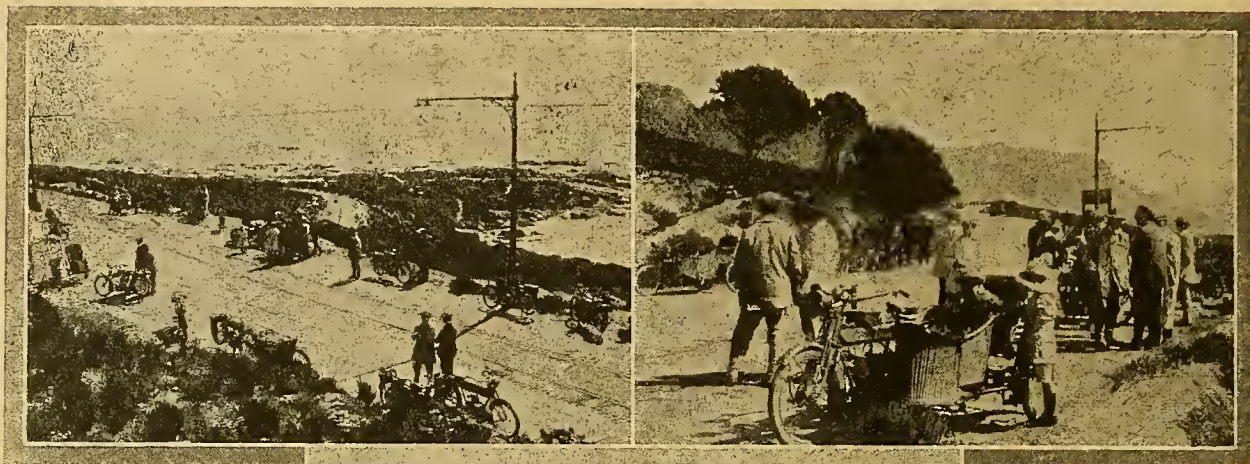
**The Way to Award Trophies and Cups.**

If clubs are fortunate enough to become possessed of a few trophies and cups let them set store by them and keep them in the club members' hands till the end of the season, then classify the results of all competitions under such headings as reliability trials, hill-climbs, and speed contests, and smaller events such as speed-judging and petrol consumption tests, and award a cup for the best performance in each class of competition; if the club has plenty of prize money or spare awards it can give firsts, seconds, and thirds for each class. This method would meet with the approval of thousands of clubmen who are keen on trials but cannot compete in speed events and hill-climbs. A man may get three firsts in a club hill-climb with a machine that would not last twenty miles in a reliability trial, hence the need for classification in awarding trophies. The sooner something is done to equalise performances in trials, and award prizes on fair lines, the better it will be for all concerned. The trade man should be a little less keen on walking over the amateur, because it is the amateur who keeps the trade alive.

S.A.R.



# Flexibility Hill-climb at the Cape.



(1) Competitors lining up along the tramway line.

**T**HIS competition was held on Saturday, November 16th, on the Kloof Road, the active Cape Peninsula M.C.C. organising the event.

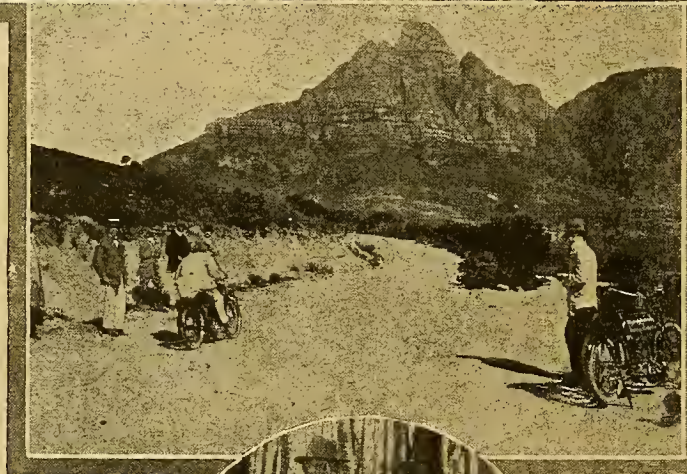
The distance was about half a mile, from Camps Bay to the "Round House," and the eighteen competitors were each given one slow and one fast attempt, the greatest difference determining the winner. There was a class for variable and another for fixed gears, the latter only attracting a couple of entries.

The results on formula of the variable-gear class are:

1. J. Nosworthy (4 h.p. Singer and sidecar).

2. W. F. Duell (3½ h.p. P. and M.)

The winner on his Singer and empty sidecar had in his slow attempt all the advantages of a smooth-acting clutch, his time, 13m. 12½s., beating that of the next man, J. Thornton (3½ h.p.



(2) The Rendez-vous at Kloof road.

Bradbury), by nearly five minutes. The latter, however, made best time in his fast attempt (1m. 49½s.), Nosworthy being considerably slower.

Only one other sidecarist, J. Hopper (3½ h.p. New Hudson), competed.

Several contestants failed to keep the engine going in the slow attempt, the average gradient of the hill being 1 in 7.



(3) Scott (Rudge), in the fast attempt, nearing the bend.

(4) J. Nosworthy (4 h.p. Singer and sidecar), winner of the flexibility climb, (variable gear class).

## ANOTHER CHRISTMAS TRIAL.

Already twenty-four entries have been received for the South Birmingham Motor Cycle Club's reliability trial, which will be run off on Friday, the 27th inst., starting at 9 a.m. from the Gun Barrels Hotel, Bristol Road. The route will be *via* Rose Hill, Worcester, Gloucester, Birdlip, Cheltenham, Evesham, and Alcester.

## SUBSTITUTE FOR PETROL.

*The Sporting Star*, Johannesburg, of September 21st, describes a test with a new motor fuel known as "Parol." A 3½ h.p. Rudge and sidecar was used for the test, and a claim is made of 50% greater efficiency. Both petrol and "Parol" were used, no adjustment to engine or carburetter being necessary with the change of fuel. "High Tension," a contributor to the above-named paper, writes as follows regarding the test: "(1) 'Parol' ignites and performs

the same as petrol. (2) No adjustment or alteration to engine, carburetter, or mechanism is necessary. (3) Can be used in any engine or carburetter. (4) Evaporates less freely when exposed to the air. (5) I have yet to investigate the claim regarding increased efficiency, and have also to see what effect, if any, its use has on cylinders or other parts." Representatives of the principal motor firms in Johannesburg witnessed the test above described.





## SIDECARS AND CYCLE CARS.

**T**HE development of new vehicles is always watched with much interest by everyone interested in motoring, and a year or two will be needed to show whether the cycle car will become a popular vehicle or whether it will eventually be regarded as an unpractical fad like the heavy tricar.

Those of us who can look back over a good many years can remember a host of weird vehicles which have made their appearance since the old high bicycle was first put on the road, and which one never sees now except on the scrap-heap of some small dealer.

Tricycles with large and small wheels arranged in different ways, quadricycles, and the old heavy type of tricar are occasionally seen on the road. Is the future of the cyclecar to be with these, or will it rather replace the popular sidecar?

### Development of Cars and Motor Cycles.

There seems to me to be a considerable difference in the way the development of cars and the development of motor cycles has been engineered in this country. The car makers, for years at any rate, simply followed Continental practice at a distance, while they strove to impress on their customers that their productions were as good as, if not better than, their rivals.

On the other hand, the bicycle maker has undoubtedly done his best to work independently of any foreign example and to give due attention to his customers' needs and wishes. Witness, perhaps better than anything else, the enormous development of variable gears in the last two years.

If it be possible to indicate a fault it is perhaps this, that manufacturers have devoted too much attention to the sporting side and not enough to the touring, so that the improvement of spring frames and other aids to comfort in riding have not kept pace with driving efficiency. Be this as it may, the British motor cycle industry is easily the first of its sort in the world, and can hardly be said to be in any danger of foreign competition. Its goods are deservedly booming.

### Crude but a Practical Success.

The motor bicycle and sidecar combination may perhaps be compared in a way with the old Daimler and Panhard type of car gearing now in common use, of which the celebrated engineer who introduced it said, "It is crude and brutal, but it goes!"

The sidecar attachment is undoubtedly crude as a passenger conveyance; it imposes strains that are brutal, in the French sense, on the frame of the bicycle, and it is wasteful of horse-power, yet it undoubtedly provides a useful and sociable means of carrying a passenger, and is deservedly popular.

The passenger's comfort is well secured, but the driver's place on bad roads, or in bad weather, is much

less enviable even than if he were riding the bicycle solo, and is not to be compared for an instant with the comfort he can obtain in the body of the crudest cycle car. It is in the attempt to remedy these drawbacks that the cycle car has been introduced. Had more attention been given to the development of the springing of the bicycle frame, it is possible that the interest in runabouts would not be so great as it certainly is.

### Increased Comfort.

There is no doubt in the writer's mind that the new movement will be a success, the only question being the measure of that success. The man who has been content up to now with a sidecar combination will welcome the neater appearance, increased comfort, and greater efficiency of a runabout, provided always, as the lawyers say, that it is within his means and will give him satisfactory and lasting service.

It should be remembered by manufacturers that great care must be taken with the workmanship and material of these light four-wheelers, or they will soon shake themselves to pieces on bad roads at the high speeds they are intended to run, and, further, that the price must be kept low.

The bicycle part of the present popular combination, which takes the chief strains, can easily be built strong and rigid, and the present standard of strength and rigidity must be adhered to at least. It is to be feared that some of the experimental machines now being marketed will fail in this respect.

It should not be forgotten, too, that directly the cycle car exceeds a certain weight and cost it has serious rivals. There are several small, light cars on the market with water-cooled engines and costing from £130 to £175, as well as two or three well-known American makes with four-cylinder engines of about 20 h.p., and these cars are wonderfully reliable and light considering their power.

### Weight, Speed, and Horse-power.

It is tolerably safe to predict of the successful cycle car that it must be small, otherwise it cannot be strong enough without being too heavy; it must be as cheap as possible, or the public will prefer to go direct from a sidecar combination to a full-blown motor car when increased comfort is sought; it must be as simple and easily understood as the motor bicycle. People are beginning to understand that cost of upkeep, both as regards tyres and petrol, is a question of weight, speed, and horse-power, and so, above all things, weight must be kept down, and too high speeds should not be aimed at if economy be studied. Five or six hundredweights should be quite sufficient for the complete vehicle.

POTTERER.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the "Editor, The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

#### The Unborn Runabout.

Sir,—I have read with much interest "Cycle Carist's" letter in your issue of November 28th, and should feel extremely obliged if he would give me particulars of the cycle car which cost him £31 to make. I should like very much to make one for myself this winter, so that my wife and I could enjoy a run in the summer months of next year when it comes along. I certainly cannot afford to buy a cycle car at the present price. I have a motor cycle, but it only carries one, and I should like to share the joys of the open road with my partner.

FLY WHEEL.

#### Motor Cycles in Chamonix.

Sir,—With reference to "Twin's" interesting article concerning his tour in Switzerland and France, he was misinformed as to his being the first English motor cycle to reach Chamonix, as in August three of us, riding English 3½ h.p. machines, went there from Geneva. We were also told that the road from Chamonix was almost impossible, but as we wished to reach the Rhone Valley, to save time, we risked it, and went over the Tête Noire and Forclaz passes. The latter proved to be one of the most severe tests for a motor cycle that it would be possible to imagine, the hairpin bends being extremely steep and acute. We, however, reached the top in good style with only one stop to cool down. We would warn your touring readers not to attempt this route in the reverse direction (from Martigny to Chamonix), as the road from Martigny to the top of the pass is in very poor condition in some parts, hardly affording a grip for the wheels. We cannot speak too highly of the joys of motor cycling amongst the Alps.

TRIPLETS.

#### Sidecar Spindles.

Sir,—For the benefit of motor cyclists in general, I would like to give my experience of the other day while taking my boy, age 4½ years, out for a ride. While travelling about 20 m.p.h. on a splendid bit of level road, the sidecar spindle snapped off, and you can guess the result. A high turf hedge hit us in a flash of time, and perhaps you may not believe it, we were both up again in ten seconds absolutely without a scratch or bruise of any kind. On "picking up the bits" I found a very severe flaw in the spindle. It was only ½ in. diameter, which, personally, I do not think is enough even if sound. About twelve months ago I put a query to you re the strength of sidecar axles, to which you kindly replied that I need not worry at all about it. Of course I do not impute any blame to you, but I thought that perhaps you would be interested in this little adventure. I might say I have carried my wife and boy hundreds of miles on all sorts of roads without any kind of mishap, and other "heavy" friends at different times. The sidecar cost £6 10s., and was got from a well-known and reliable firm of dealers. I think there should be a greater margin of safety on all vital parts such as these, so as to allow a little for any possible flaw (which, of course, it is usually impossible to detect from the outside) that might be there. I think the majority of your readers will agree that the attention of the makers of these articles should be drawn to this matter.

AF 274.

[We have enquired of two leading makers of sidecars for the measurements of their standard sidecar spindles, and give them below:

	Max. diam.	Min. diam.
W. Montgomery and Co.	1½ in.	¾ in.
Mills-Fulford	¾ in.	1½ in.

The above dimensions ensure a margin of safety.—ED.]

#### Silencers.

Sir,—With reference to Mr. H. C. Wyley's letter concerning silencers in your issue of the 5th, I have been expecting to see some such letter as this, and, like him, fail to see how the new regulations can affect the cut-out as fitted to present day silencers. In this connection also I fail to see why the Triumph Company are altering theirs and fitting a long exhaust pipe, unless it be that they intend going further than the regulations require. On page 1159 of same issue you publish the text of this new regulation, which reads that no cut-out shall be used which shall allow exhaust gases to pass out *before* having passed through a silencer.

Hence, I cannot understand the alarm of some motor cyclists who talk of taking off the cut-out fitting or of having a long exhaust pipe fitted, etc., etc. Your opinion, Mr. Editor, will be valuable to all your readers on this point. It is my intention still to use, with discretion of course, my cut-out, as it would very materially affect the running of my machine if it were permanently shut. C.M.

Sir,—May I crave a little of your valuable space in which to reply to some of the points raised by Mr. L. J. Austin in his criticism of my article on "Compulsory Silence," which I will endeavour to do as shortly as possible.

1. I hold no brief for the man who makes a nuisance of himself, and if Mr. Austin will kindly read through my article again, with a little more care, he will see that I advocate drastic punishment for those inconsiderate riders who, besides causing great and unnecessary annoyance to other people, bring the whole pastime into disrepute.

2. I do not hold the view that noise and efficiency necessarily go together, nor do I insult our highly qualified designers, who have given us in the motor cycle of to-day what is probably one of the finest examples of modern engineering extant, by telling them that they are incapable of designing a really efficient silencer. But, on the other hand, I must remind Mr. Austin, since he appears to have forgotten it, that efficient silencers have been by no means general in the past, and are not entirely so on 1913 machines. My own machine last season was fitted with one of the finest engines of the day, but if I shut the cut-out the speed visibly dropped, and if it was kept closed for long the engine began to overheat. Now, does Mr. Austin seriously suppose that the enormous number of motor cyclists who ride old machines with inefficient silencers (there are quite a lot of us who cannot run to a new machine every year) are not going to try to get more power with the cut-out closed, whether at the sacrifice of silence or not? And the same applies to the owners of those 1913 models whose silencing arrangements are still inadequate, and there are many such.

3. I disagree with Mr. Austin that the silence of the modern car has not increased its danger, and I think he will find, if he cares to investigate the matter, that a good many accidents may be traced to it. His argument that, granted that the silence of the automobile is dangerous, we ought to keep our cut-outs open in crowded places, is futile, for no motor cycle at present made glides along with the absolute silence of a car, even with the cut-out shut.

Finally, will Mr. Austin please tell me why the makers of the Indian motor cycle, who are strong advocates of silence, after abolishing the cut-out on their 1912 machines, have replaced it for 1913?

RED WHEELS.





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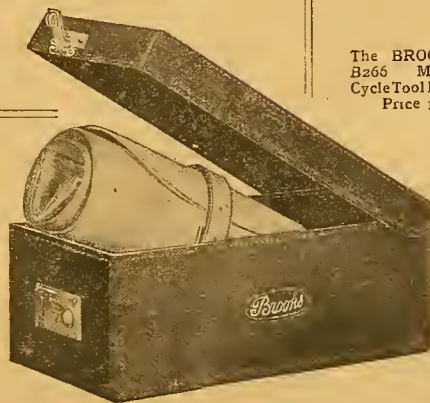
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BROUGH . . . . . DEC.	IVY . . . . . IN STOCK	<b>CYCLE CARS.</b>
B.S.A. . . . . DEC.	IVY LADIES MODEL . . . . . IN STOCK	CROUCH . . . . . 3 WEEKS
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# ROBERTSONS



**Military Motor Cyclists.**

Sir,—As no doubt you remember, some time during last July, the War Office asked for a number of motor cyclists to volunteer for duty with the Army during the Manœuvres. I believe they got the required number, and during and also after the Manœuvres we heard a great deal about how well they performed their work, and what a help they were, but now, apparently, the War Office have forgotten all about them, as no pay or acknowledgment has come along up to date. Now, sir, do you think this is the way to get us another year? I have asked several for their opinion, and they all say "No thanks."

DISGUSTED.

**A Substitute for Petrol.**

Sir,—The ever-increasing price of petrol, which has already reached an exorbitant figure, must result sooner or later either in the adoption of a much cheaper substitute, such as paraffin, or in the serious crippling of a vigorous industry.

Paraffin costs 6d. per gallon, and when one considers the large number of high-class and efficient engines in the marine motor world which run either on petrol or paraffin at will, and which include both two-stroke and four-stroke types, one naturally wonders why a similar choice of fuel is not open to the purchaser of a cycle or a car.

There could be no simpler or more economic engine for car, carrette, or cycle than the two-stroke paraffin motor. The two-stroke engine has already proved itself second to none on the road, and the slight loss of efficiency through the use of paraffin could be borne with equanimity, if the fuel used were obtainable at a reasonable price.

RYNO.

Sir,—Seeing notes at times in your paper about the use of paraffin for motor cycles, I would like to give an experience. On the evening of the 5th inst., at 6.30, I started a 4½ h.p. Calthorpe machine on a carburetter full of petrol, the tank being full of paraffin. After running from Birmingham to Stafford in 1½ hours with sidecar, I obtained another half gallon of paraffin to be sure of having enough to carry me further. I proceeded with my run and reached Manchester by exactly 10.30 p.m. without further use of petrol, the consumption being 1 gal. 1 qt., and the carburetter an Amac. On examination next morning I found the plug quite clean. All the difference I noticed was that the spark needed more variation than with petrol.

FRANK PRICE.

**Shape of Combustion Chamber.**

Sir,—With reference to "Magneto's" ideas upon combustion chambers, he appears to think that because the spherical type gives the greatest petrol economy, it will overheat more than the "pocket type" on hills. From the very fact that, for the same dimensions of engine, the spherical type gives more horse-power for the same strength and quantity of mixture than the pocket type, it is evident that it will prove superior to the latter wherever more horse-power is needed either on hills or for speed.

The cooling explanation is fallacious, as the spherical type will not require so much throttle opening as the pocket type when climbing the same hill, and consequently even if the reduced cooling surface had anything to do with the question, less heat is lost in heating up the cylinder walls than in the pocket type, since the former is more powerful than the latter, for the same cylinder capacity.

"Magneto" is wrong in supposing that as the mixture becomes richer the cylinder temperature becomes higher, as it is well known that the mixture for complete combustion (neither rich nor weak) develops the maximum cylinder temperature; in fact, as the mixture gets weaker or richer than this, the cylinder temperature falls nearly in direct proportion.

Some recent experiments upon exhaust temperatures with different mixture strengths by the present writer confirm the existing beliefs upon this subject.

Further, it is the accepted idea of the leading authorities, such as Messrs. Lanchester, Clerk, Dr. Watson, etc., that the spherical head is the most efficient—that is, gives more horse-power for the same petrol consumption than any other type—apart from such advantages as more rapid ignition velocities and greater charge induction, etc.

"Magneto's" numerical data are interesting, and perhaps it may help matters to mention that completely to combust 1 lb. of petrol requires not 3½ lbs. of air, but 14.75 lbs., according to the ordinary simple chemical calculation and from various authorities (vide Dr. Watson's "Thermal

Efficiency of a Four-cycle Engine," Proc. Inst. Autom. Engrs., 1908], and that the most thermally (not mechanically, as he assumes) efficient mixture is about 17 lbs. of air to 1 lb. of petrol—that is, about one-sixth more air (not double) than for complete combustion—so that his arguments based upon his figures are quite wrong.

D. M. NEWTON.

Sir,—In reply to Mr. Cutbush's criticism of my article I should like to point out to him the following facts: First, the quantity of heat absorbed by a body is no indication of its temperature, other factors having an important bearing on that matter. To take some figures which seem to appeal to Mr. Cutbush, one ton of water will absorb 56,448 gm. calories with a rise in temperature of 1°C., but the same amount of heat will raise 1 lb. of iron through 1,133°C., provided, of course, that no losses occur in the transference.

Again, I do not at all agree with him when he says that the coolest cylinder is the one that presents the least surface to the charge and the greatest to the air. Were this so water cooling would be unheard of, as efficient air cooling could be obtained by simply making a cylinder with sufficiently large radiating mns. and I think most designers of air-cooled engines will agree with me in saying that large surface is not the only factor in satisfactory cooling. Had Mr. Cutbush substituted "effective radiating surface" for "surface exposed to the air" I might have been inclined to agree with him, but that is a different matter.

With regard to Mr. Cutbush's figures I should like to know why he confines his investigations, out of the whole cycle of operations, to the moment of firing, and what law of physics does he use to prove his statement? He takes the temperature of the gases to be 1,500°, but omits to mention whether this temperature is measured from the zero of the scale or from absolute zero. No mention is made of the temperature of the cylinder walls, and assuming, as I suppose he does, that both cylinders start at the same temperature, he tacitly assumes that the spherical combustion chamber will be the cooler when a steady state has been reached. W. McWHINNEY, A.R.C.Sc.I. ("Magneto.")



Miss Marshall, of Clay Cross, a member of the North Derbyshire M.C.C. Her mount, which is fitted with a 2½ h.p. Minerva engine, was built throughout by her father, who is over seventy years of age and has never had an hour's tuition in motor mechanics.



### Engine Bearings.

Sir,—I notice in a recent issue of *The Motor Cycle* a letter from a reader asking for experiences regarding the wear of engine bearings, and think the following particulars may be of interest.

I use a 4 h.p. J.A.P. engine, which has run some 12,000 miles, being used mostly with a sidecar, and geared about  $5\frac{1}{2}$  to 1. The pulley side crankshaft bearing was renewed after 4,000 miles owing to wear caused by an experimental pulley with a large amount of overhang. The big end bush ran for 11,000 miles before being replaced, and the gear side crankshaft bush is still in use after 12,000 miles, as are also the original timing gear bushes!

Owing to a scored cylinder necessitating regrinding and a new piston, the original gudgeon pin bush was replaced after 7,000 miles, being then practically unworn. This bush is hardened steel in the J.A.P. engine.

In connection with the present discussion of the relative merits of air and water-cooled engines, the possibilities of fan cooling seem to have been overlooked. About six months ago I had a three-speed gear fitted to my machine, and at the same time arranged a 7in. fan (driven by belt off the pulley boss and a small bevel gear) in front of the engine, and find that I can drive with sidecar up long hills calling for the bottom gear of  $10\frac{1}{2}$  to 1 without the least sign of overheating, and never have to stop to cool, even after the hardest driving.

ZERO.

### The Experiences of a Beginner.

Sir,—In perusing your paper for the last twelve months I have noticed many questions which have been asked by the unsophisticated or prospective motor cyclist. Summarised, these questions include the following:

1. Cost of motor cycling.
2. Reliability, hill-climbing power, and speed.
3. Pros and cons of chain and belt drive.
4. Horse-power for passenger work, and the question of gears.

My experiences as a beginner may help some others, especially when I state that I motor for pleasure only, and have not the slightest interest in any manufacturing firm. All my riding has been with a sidecar and passenger, including, many times, a fair amount of luggage.

Under the first heading, for a season's mileage of 3,000 miles the cost has been three halfpence per mile. This figure includes depreciation, running expenses, licences—in fact, all my expenses due to motor. My first machine was a powerful single gear belt-driven clutch model. This ran perfectly, with the exception of a slipping belt, which happened approximately every hundred miles, then, as you know, it had to be shortened. A trip in the Peak country at Eastertide settled the question of single gear and belt drive as far as I am concerned. One evening it took three hours to do twelve miles. Further comment is needless. I decided either to go back to Shanks's pony, or buy something that would climb single figure gradients. Result, I bought a James, two-speed, chain drive.

As motorists, we all appreciate the remarkable performances of professionals in reliability and speed trials, but are they of much value to the amateur, and especially the beginner? What we wish to know is, what the ordinary touring machine will do rather than what a machine tuned up every time it leaves the works will accomplish. On my chain-driven machine I have had three stoppages, number one due to a drop of water in the carburetter, therefore no fault of machine; number two, through chain wheel nut on engine-shaft coming loose, which was rectified in a few minutes; number three, chain wheel on counter-shaft came loose; this had to be sent to the makers, and the firm put a newly-designed counter-shaft in, and on this it is impossible for the wheel to come loose, as four raised keys have been embodied in the shaft. No charge was made for it. As to hill-climbing, I have yet to come across a hill which bids me shed my passenger, and I have been in Cumberland, North Wales, and the Peak District. On open roads I can easily average 30 m.p.h., and, if necessary, can do over 40, by speedometer. My petrol consumption is approximately 80 m.p.g., Amac jet used being 29.

Regarding the chain drive, I may say that the chains run beautifully, and have only had to be adjusted once. I am unable to find that harshness in them about which so many devotees of the belt drive talk. Maybe the bath of grease and graphite has something to do with this; anyway, a slipping drive is a thing of the past.

B.A.

The horse-power is nominally four, and I have found it ample. It has been stated in your columns that with low horse-power a machine is soon knocked to pieces, but a thorough overhaul of mine shows that it is as good as when I took delivery last June. The counter-shaft gear is perfectly satisfactory, but not having had experience of an epicyclic hub or engine-shaft gear I cannot make comparisons.

A. ENGLAND, M.Sc.

### The Wear of Small Engines.

Sir,—My motor cycling mileage up to date is composed as follows: 1908 (six months),  $1\frac{3}{4}$  h.p. F.N., 1,253 miles; 1909,  $3\frac{1}{2}$  h.p. Triumph, 4,008; 1910, Triumph-Gradua, 3,365; 1911 (eight months),  $2\frac{3}{4}$  h.p. Douglas, 2,350; 1912,  $2\frac{3}{4}$  h.p. Douglas, 3,700; total, 14,656 miles.

Having done 7,373 of the above with "large" engines, and the remainder, 7,283, with small ones (6,000 of which were with twin cylinders, which might reasonably be expected to give more trouble than singles), I feel that I can express an opinion founded on experience. To have ridden one of the best known medium-powered machines and one of the best known lightweights an approximately equal distance is about as good a test as can possibly be made, bearing in mind that each traversed practically the same roads, under similar conditions, surface and gradient, and were driven by the same rider, with an equal amount of care in each case.

Of course, did one not get a new machine every year, it is possible that some difference would be apparent in a very prolonged mileage, but for a lightweight to cover 3,700 miles with no mechanical trouble to speak of, and to be run often at 30 to 40 m.p.h. into the bargain, is, I think, a sufficient indication of its quality. The engine of my present machine has only had carbon deposit removed and valves ground once, and that after 2,000 miles had been traversed, and the same applied to last year's make. The following extracts from my diary are all the mechanical "troubles" experienced with my last two lightweights:

#### DOUGLAS, MODEL E (1911).

##### Mileage.

- 1,235. Valves stuck with oil, causing misfiring at start. (Needed cleaning.)
- 1,975. Front cylinder bell crank (for tappet) stuck. (Had never been oiled; own fault.)
- 2,150. Front plug sooted.
- (2,290. Carbon removed, etc., for the first time.)
- 2,302. Front plug sooted.

These are absolutely all the "troubles" connected with the engine in 2,530 miles total running, and not one of them is really worth mentioning.

#### DOUGLAS, MODEL K (1912).

##### Mileage.

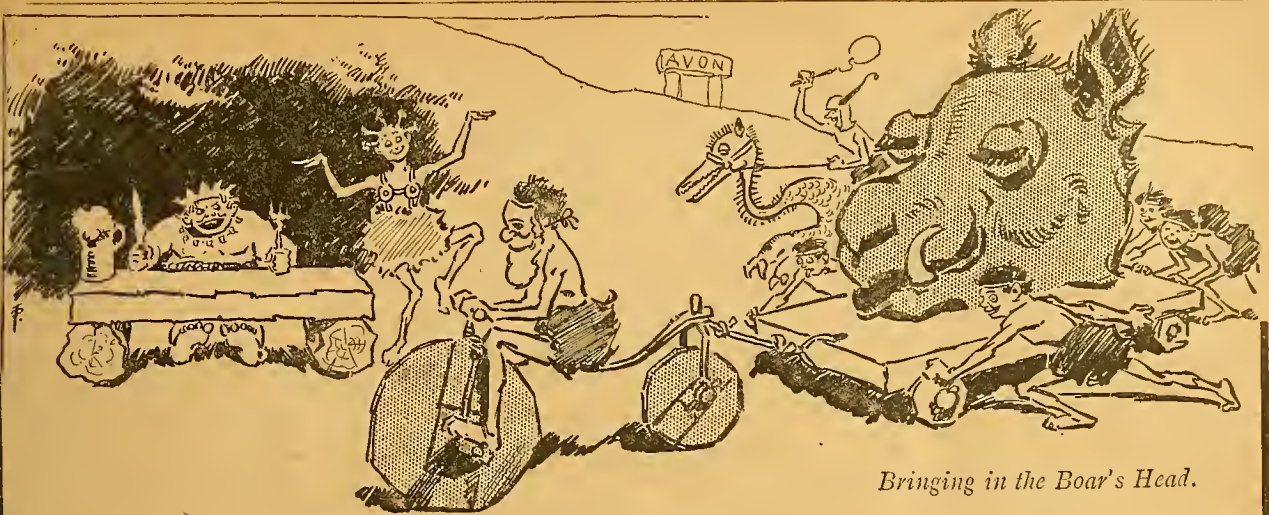
- 475. Exhaust valve stems stuck with congealed oil (when cold). (Rubbed with emery cloth.)
- 685. Ditto. (Put into lathe.)
- 1,165. Ditto. (Only disadvantage, irregular running until warming up of the engine liquefied the oil on the stem.)
- 1,366. Ditto. (Apparently lubricating rather generously.)
- 2,110. Ditto.
- (2,185. Carbon removed and valves ground for the first time. Really unnecessary yet, but taking the machine away when on holidays.)
- 2,715. E.V. stems stuck again (when engine cold).
- 3,160. Cam wheel pin of timing gear loose, upsetting timing, especially when the engine was run at all fast.

These are absolutely all in 3,700 miles to date. There is really only one worth mention, and that is the last (sticky valves at the start being a fairly common experience). The pin was easily tightened up again, but I wrote and worried the makers about it, asking them how I could prevent its recurrence, and they very generously offered to give me a complete new crank case free of charge, and sent me a "locking frame" for the timing gear, which I fitted. But I cannot send the engine to them at present as I am still using it, with every satisfaction, I may say, having done 540 miles since then. I have never broken a valve, and on this year's machine have not even had a sooted plug, and this in 3,700 miles!

In conclusion, I would say that, from my experience, at any rate, the engines of the Triumph and the Douglas appear to give about-equal satisfaction.

OILE.





*Bringing in the Boar's Head.*

## A Prehistoric Banquet.

Our prehistoric forefathers were a sporting lot ; they hunted the woolly elephant and the Iguanasauros with arrows and stone clubs—they had no “Cordon bleu” chef to cook him when caught, but probably enjoyed the eating just as well as we do.

The modern man has greater luxuries—good wine, good food, good cooking, and a comfortable motor cycle to take him to the feast.

But best of all, he has the AVON TYRE wherewith to cover the wheels of his motor cycle and make his journeyings as comfortable as “riding on air,” and a good deal safer.

AVON TYRES are strong, resilient, and durable, and can be retreaded after thousands of miles. Compare the “tyre” of the past with the AVON and give thanks to the makers.

*A Seasonable  
Suggestion :*

If in doubt about **the** Xmas present for your motoring friend send an AVON and give him an agreeable surprise.

**No Advance in Price.**

# Avon Tyres

**LONDON**—35, Long Acre, W.C.

**BIRMINGHAM**—204, Corporation St.

**GLASGOW**—197, Buchanan Street.

**BRISTOL**—Bristol Bridge.

**MANCHESTER**—229, Deansgate.

**Works—Melksham, WILTS.**

**Have YOU tried AVON or NOVA GOLF BALLS. Avon 2/-; Nova, 1/3. Standard, Heavy and Junior.**

*In answering this advertisement it is desirable to mention “The Motor Cycle.”*



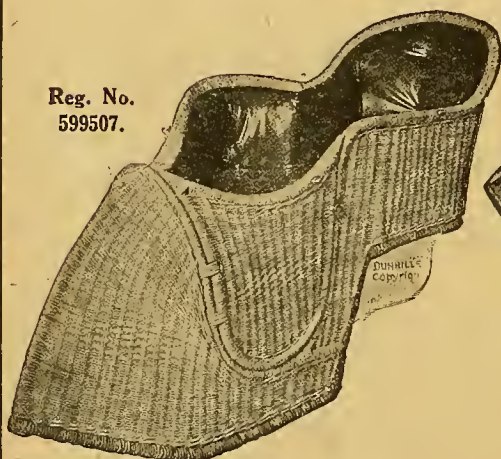
# MOTOR CYCLES FOR 1913.

DUNHILL'S are Agents for the REGAL GREEN PRECISION MOTOR CYCLE.

You are strongly advised to place your order for the 1913 Models at once.

DUNHILL'S have excellent facilities for the supply of 1913 Motor Cycles of practically every known make. Customers can place their orders now without fear of being disappointed.

Reg. No.  
599507.



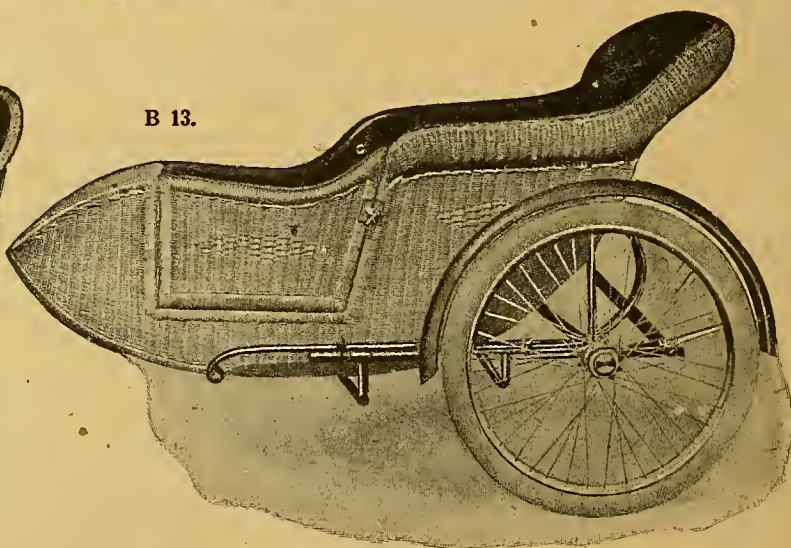
## "THE FAMILY BASKET"

with extra Side Seat.

Cane Body . . . £6 - 10 - 6

Sidecar Combinations from  
£5 - 12 - 6.

B 13.



## 1913 MODEL SIDECAR.

Special Cane Torpedo Body, with side entrance and cupboard.

Body only . . . Price £9 - 8 - 6.

For Chassis, see our Motor Cycle Catalogue—price from £4 - 8 - 6.

OUR NEW MOTOR CYCLE CATALOGUE IS NOW OBTAINABLE, POST FREE.

# Dunhill's

359-361, EUSTON ROAD, LONDON, N.W.

City Branch: 42-43, Lombard Street, E.C.

MANCHESTER: 88, Cross Street.

GLASGOW: 72, St. Vincent Street.



**Judging Distances with One Eye.**

Sir,—In the last issue Dr. Selby Clare enquires if, in the case of a person who has sustained the loss of an eye, would it render such person incapable of safely riding a motor bicycle?

It will interest Dr. Clare to learn that an intimate friend of mine lost one of his eyes some years ago through an accident, but has not in any way been incapacitated from riding or taking part in competitions, and more than once winning such.

Also one year he rode in the Irish End-to-end Trial, and gained a medal. At present his mount is a 6 h.p. Enfield and side car. He wears glasses even when riding to prevent undue strain on his one optic.

R.G.L.

**A Novel Machine Promised.**

Sir,—With reference to "Ixion's" comment on springing in the last issue, I have an engineering friend who is devoting considerable time and attention to the perfecting of a comfortable and economical motor cycle using petrol or a percentage of petrol and paraffin or paraffin alone on full load without a vaporiser.

A machine will be placed on the market in about six months that possesses more comfort than the present best car to ride on. This machine, I understand, will carry one, two, or three passengers without any noticeable difference to the springiness of riding. The wheels are made of aluminium, which will certainly be very convenient to clean and cannot rust. The special feature that takes my eye is the exceeding lowness of the design, which will enable quite a small person to control the balance with ease. It has front wheel drive, back wheel steering, wheel control, and portable seats. In wet weather the whole machine can be covered in by a light waterproof. I understand provision is made to always carry the extra seats and waterproof, and these give to the machine an appearance of a motor car when in use. The appearance of the machine generally is delightful. It does not possess the heavy and clumsy appearance of the present type, and I feel certain my friend's only trouble will be to cope with the enormous demand.

If this should catch my friend's eye, I hope he will not be annoyed at me giving vent to my delighted feelings, as I have not exposed any details that I have been entrusted with.

P. MATHEWS.

**Decompressors.**

Sir,—Our attention has been drawn to an article by Mr. B. H. Davies in the issue of the 5th inst. in which appears the following: "The decompressor has come too late. It is an admirable fitment on a T.T. single gear, or to ease the shove of a kick starter; but a solo rider with a variable gear will not value it excessively, for the engine is so easy to start without it. Four years ago I would gladly have paid £5 for a good decompressor; this year I had one on my three-speeder, and I never used it except for a wheel-pull engine start. Decompressors will be convenient, but scarcely as necessary as once they were."

This may be Mr. Davies's view, but is it not in direct opposition to facts? Curiously enough in the days of the single-speeder, decompressors were non-existent (almost), and it was not until the kick-starter and variable gear became really popular that manufacturers adopted the decompressor.

To those who fully understand what a decompressor will do, it has always remained a mystery that it remained so long neglected. Had manufacturers adopted it seven years ago, it would undoubtedly have exerted enormous influence on the design of motor cycles and the demand for them, doing away, to a great extent, with the demand for expensive clutches and variable gears, and removing, for good and all, nearly every objection that can be made to the push start.

Despite Mr. Davies, we hold the opinion that decompressors are as necessary as ever they were, and they are something more than a convenience. Riders of machines with variable gears will understand how much better it is to run in crowded traffic on low gear with the decompressor in use and preventing the engine tearing its heart out and getting pink hot. As for sidecarists, there must be many who still think that the advantage of a decompressor would not be too dear at £5, though they might not be prepared to pay that amount—and are not asked to do so. We look to the 1913 season to disprove Mr. Davies's statement and modify his views.

THE ENDRICK ENG. CO.

**Fifty-eight Competitions in 1913.**

Sir,—With regard to the 1913 competitions, in my opinion the clubs are quite capable of running all the one day reliability trials needed—in fact more.

Why should the A.C.U. compete with the clubs by running quarterly or half-yearly one day trials? The manufacturers want fewer trials at less expense, not more. The Six Days' Trials waste nearly a fortnight's time.

Why not make them five days? It should still be possible to cover 1,000 miles, and the men would be able to leave home on a Saturday and return the following Saturday.

What an absurd proposition it is to run the A.C.U. and Scottish six days' trials consecutively!

The competitors would be absent from home nearly three weeks, and, as far as manufacturers are concerned, there would be only one advertisement from them instead of two, and only one opportunity of a strenuous test instead of two.

If a machine fail in the A.C.U. Six Days' there would be no time to revise details and try again in the Scottish or vice versa.

A rough analysis of the diary of events for 1913, published on page 1444 of your issue of December 5th, shows fifty-eight in all. Of these nineteen are open trials, including two A.C.U. one day trials and one six or more days. Twenty club trials, including three East Midland Centre A.C.U. events, seventeen hill-climbs, six Brooklands meetings, and the T.T. races. These are without a mention of any Scotch or Irish events.

I would suggest that two 1,000 miles Five Days' Trials be run by the A.C.U. and Edinburgh M.C.C., one as early as possibly the other in August.

MANUFACTURER.

**The Proposal to Combine the Scottish and English Six Days' Trials.**

Sir,—Mr. Talfourd Wood has suggested that the views of manufacturers might be of interest in regard to a ten days' trial. Personally, I am wholly in favour of such a trial—firstly, because I find that on a well-sprung cycle car there is no discomfort after a long ride (my lady passenger in the Six Days' Trial agrees with me), and, secondly, because if the Scottish and English trials are held separately many manufacturers (including myself) will certainly enter for both, and the time and expense will be greater than if they are held together. On the other hand, I know that some riders do feel the strain of even a six days' trial, and the ten days' will probably eliminate the genuine amateur altogether. These trials have had a twofold object—to test the skill and endurance of the riders and to test the reliability of the mechanism. Undoubtedly the latter is becoming the main feature of the trials. Now, ten days may be an unfair test for a rider, but it is certainly not an unfair test for the machine. On the contrary, I cannot imagine a more useful test, not merely as an advertisement, but as an object lesson for the manufacturers.

Would it be possible to allow a rider to compete for half-time, and to win the reward of his riding in the shape of a medal or certificate, and then to allow a second rider to complete the trial on the same machine? This course is already adopted in long-distance trials at Brooklands, such as that of the Duo. This is only a suggestion, which might serve to meet the difficulty of the human element. Personally, I should hope to drive through the ten days, as I do not feel the difficulty.

May I suggest that "an absence for the best part of three weeks" is rather a liberal allowance for a ten days' trial? A car should be ready to start the day after it arrives on the course and to return the day after the trial. If not, it is the fault of the car or of the driver.

H. F. S. MORGAN

**NOTICE.**

The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscript, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed for the purpose.



# QUARTERLY RELIABILITY TRIAL.

Final of the Herts. County A.C. 1912 Series.



SCENES ON MAPLE HILL DURING THE SLOW HILL-CLIMB.

J. Oliphant (Premier) and C. W. Meredith (Bradbury).

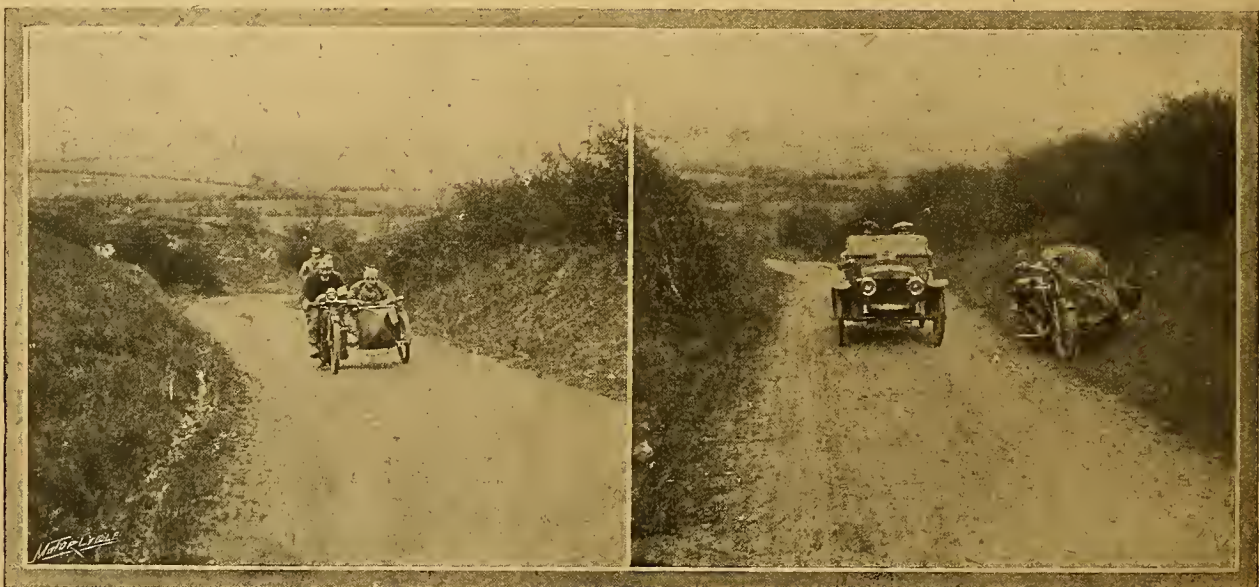
W. F. Newsome making a wonderfully slow climb. He used a T.T. Triumph with Phillips pulley.

**L**AST Saturday, starting at 10 a.m. from St. Albans, the Herts County A.C. held their fourth and last trial of the year over the usual course, with the exception of Kop Hill, which was cut out at the last minute owing to the bad state of the surface. Twenty-six competitors faced the starter, the non-starters being P. C. Vestey (3½ Rudge), C. D. Wright (3½ Humber), and F. Begley (Enfield sidecar), who has been suspended by the A.C.U. for undertaking an unofficial trial. He therefore took our photographer round the course, the machine running splendidly throughout.

The weather was anything but perfect. It was raining at the start, but it cleared as the wind sprang up, which, during the morning, increased to a perfect hurricane. This must have given a great deal of trouble to the lightweight riders, as it was against them all day.

The first hill of note was Sundon, often used by the M.C.C. for hill-climbs. Most of the competitors came up very well, particularly Reg. Holloway (3½ Premier sc.). The failures were A. G. Cocks (2½ Connaught); Mrs. Hare (6 Enfield sc.), who had carburetter trouble all day and finally retired; C. Chatwyn (3½ Ariel sc.); W. Cooper (Humberette), who was suffering from a slipping clutch, and later in the day retired; and B. T. Rice Pyle (8 Bat sc.).

The next was Whiteleaf, but this ascent gave very little trouble, although the wind, which was now blowing harder than ever, was very trying. After Whiteleaf the route lay over a bad stretch of road to Aston Hill, where there was a fast climb, and most of the competitors, who, by now, knew the hill very well, experienced no trouble; the surface in winter is usually rather rutty. Near the foot of Aston W.



G. E. Cuffe (7 h.p. Indian sidecar) on Sundon Hill during the morning's ride.

V. Willberforce (G.W.K.). The 6 h.p. Enfield sidecar used by "The Motor Cycle" photographer is seen by the roadside.





First appearance of the two-stroke Connaught in competition. The machine was ridden by A. G. Cocks in the Herts County Trial last Saturday.

passed Holloway with a broken chain, which took so long to repair that it made him an hour late at the next check.

#### The Slow Climb.

After lunch there was a slow climb on Maple Hill; here Newsome found the benefit of his Philipson pulley, and made a star climb, going up at about four miles-an hour and being passed by three-speed machines. G. Baxter went up a lot too fast, and G. E. Cuffe was troubled again with his clutch slipping. Most of the others went up very well, especially A. E. Walker on his little Hobart-Precision. Below are the complete results:

#### Results of Saturday's Trial.

##### CLASS A.

	Marks.
A. E. Walker (2½ Hobart), bronze medal ...	193
C. E. Searle (2½ Douglas) ...	171
A. G. Cocks (2½ Connaught) ...	118

##### CLASS B.

W. F. Newsome (Triumph), silver medal ...	196
C. W. Meredith (Bradbury), bronze medal ...	187
J. Oliphant (3½ Premier) ...	179
Rex Mundy (3½ Triumph) ...	173
H. Berwick (3½ New Hudson) ...	163
H. L. Meyer (3½ Rudge) ...	162
E. C. Jarvis (3½ Triumph) ...	154

##### CLASS C.

E. A. Colliver (6 Zenith), bronze medal ...	199
R. G. J. Charlesworth (6 Zenith) ...	196

##### CLASS D.—Passenger motor cycles.

J. T. Wood (G.W.K.), gold medal ...	189
C. M. Keiller (G.W.K.), silver medal ...	177
A. W. Lambert (8 Morgan), bronze medal ...	176
V. Wilberforce (G.W.K.) ...	169
G. Baxter (6 Basil sc.) ...	144
R. Holloway (3½ Premier sc.) ...	111
G. E. Cuffe (7 Indian) ...	42



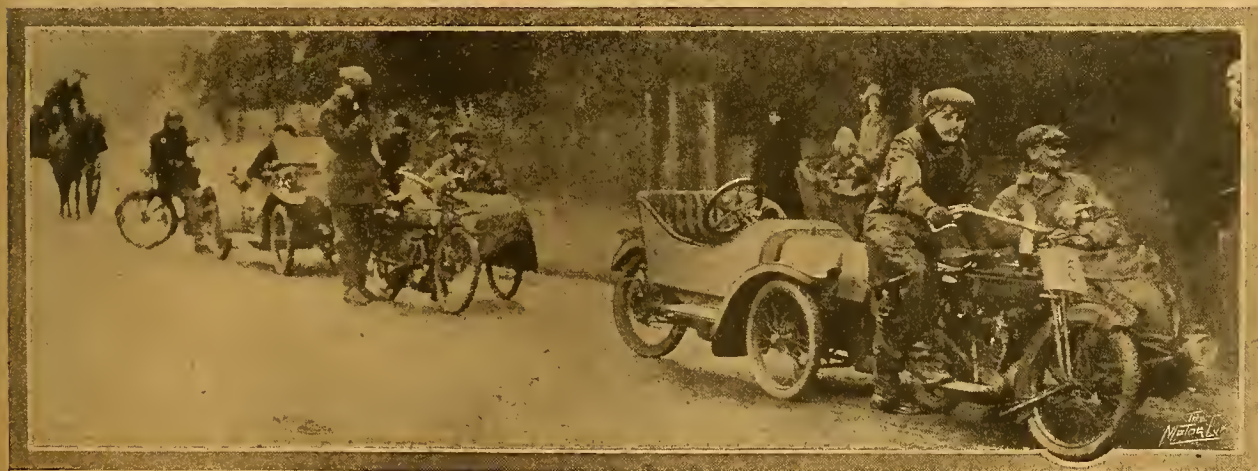
A. W. Lambert (8 h.p. Morgan runabout) climbing Maple Hill.

In Saturday's trial, E. A. Colliver (6 h.p. Zenith) carried off the silver trophy for the best performance of the day by a member of the trade. By the way, Colliver has ridden consistently in all four contests and would have annexed the Amateurs' Cup but for the fact that he has joined the trade in the interim.

R. G. Charlesworth, another Zenith rider, gains the trophy for the best performance of an amateur in Saturday's trial.

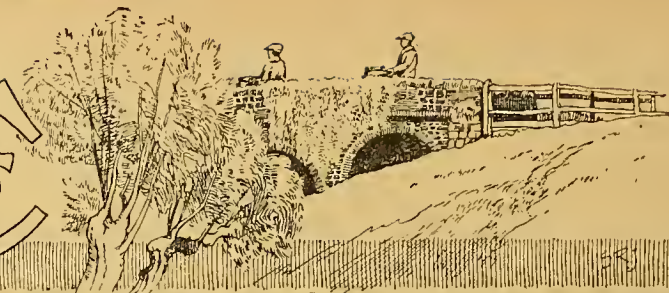
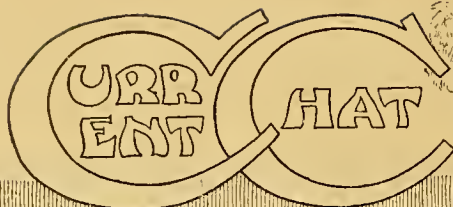
#### Results of the Four Trials.

	Total Marks.
1. F. W. Newsome (3½ Triumph), Trade Riders' Cup	782
2. E. A. Colliver (6 Zenith) ...	738
3. C. W. Meredith (3½ Bradbury) ...	700
4. R. G. Charlesworth (6 Zenith) ...	682
5. J. Oliphant (3½ Premier) ...	665
6. H. Berwick (3½ New Hudson) ...	660



PASSENGER MACHINES AT THE START. An Enfield sidecar followed by a Morgan runabout, a 3½ h.p. Ariel sidecar and G.W.K.





#### TIME TO LIGHT LAMPS.

Dec. 19th	...	4.50 p.m.
" 21st	...	4.51 p.m.
" 23rd	...	4.52 p.m.
" 25th	...	4.53 p.m.

#### Our Christmas Issue.

The next issue of *The Motor Cycle*, dated December 26th, and on sale before Christmas, will contain seasonable articles and illustrations.

#### A Petrol Substitute Wanted.

2,000 guineas is the amount offered by the Society of Motor Manufacturers and Traders as a prize for a home produced fuel which is capable of being put on the market at a commercial price and in sufficient quantities.

#### A.A. and M.U. Notes.

**A STOLEN MOTOR CYCLE.**—The Association has been informed of the theft of a member's motor cycle, on November 30th, from the county surveyor's department, Reading. The machine is a 1912 model, 2½ h.p., twin Douglas, engine No. 6619, frame No. 6370, registered No. BL2744.

#### Dangerous Corners.

Through the instrumentality of the A.A. and M.U. several dangerous corners and high hedges are receiving attention. Among the roads which will probably be improved are Chorley Wood Common to the Railway Station (Rickmansworth), Frimley and Farnborough road, and Coombe Hill on the Tewkesbury-Cheltenham road.

#### Speed Warnings.

Motor cyclists are warned of the vital necessity for the most considerate driving in and around Sevenoaks. There is considerable agitation in favour of a ten-mile limit being imposed in the district, and only by a display of the utmost consideration for other road users can motor cyclists prevent application being made for the scheduling of a considerable area.

The Wolverhampton magistrates have intimated their intention to deal seriously with cases of dangerous driving in the town.

#### Remarkable Speed.

The following paragraph appeared in the *London Mail* of the 14th inst.: "Young George Duller attained a speed of 110 miles an hour on his motor cycle at Brooklands the other day. A third of that speed would have got Koul home at Sandown." A reader asks, Has a motor cycle ever attained the speed of 110 miles an hour? The highest speed reached by a motor cycle on Brooklands track officially checked and timed is C. R. Collier's 91.37 m.p.h. on a Matchless-Jap on August 11th, 1911.

#### Where Motor Cycles Exceed Cars.

On September 1st last, there were registered in Denmark 4,507 motor cycles and 1,587 cars.

#### Indian Compositors' Slips.

The following advertisement appears in an Indian paper: "For sale, four-cylinder F.N. in splendid condition. *Not fire engine model.*" Another advertisement reads: "Beautiful *slop* soiled motor tricycle." The sender of the paragraph says that Indian compositors frequently cannot read, write, or speak the English language.

#### Ghent International Exhibition.

At the present time British goods of all kinds are in high favour in Belgium; therefore the Ghent International Exhibition, which is to be held next year, offers a fine opportunity for British motor cycle makers to gain a stronger hold on the Belgian market. The Board of Trade, Exhibitions Branch, Queen Anne's Chambers, S.W., points out that France and Germany are both erecting special pavilions at this exhibition, France having taken much more space than at Brussels.

#### SPECIAL FEATURES:

CONCERNING POWER UNITS.

NEXT YEAR'S TRIALS.

GOMETZ-LE-CHATEL HILL CLIMB.

#### Motor Cycle "Estafette."

Seven competitors took part in the motor cycle "estafette" (express ride) organised by the Auto Cycle Club de France on the 8th inst. The route was St. Germain, Pontoise, Palaiseau-Longjumeau, and back to St. Germain.

#### Christmas Holidays and Winter Runs.

Most large firms of manufacturers and dealers will close their premises for the Christmas holiday from Tuesday night till the following Monday morning. Those who intend to compete in long-distance winter runs or to take prolonged trips should therefore order any spares or clothing they may require by the end of this week at the latest.

Owing to Boxing Day being our usual publishing day, the next issue of *The Motor Cycle* will be on sale on Tuesday, the 24th inst.



FINAL QUARTERLY TRIAL OF THE HERTS COUNTY A.C.

Outside the control at Aston Hill. The competitors are H. Berwick, W. F. Newsome, J. Oliphant and another.



**London-Exeter Run.**

The Motor Cycling Club's London-Exeter winter run closes with a total of 164 entries—an easy record.

**Output of Cycle Cars.**

Last week Messrs. Humber, Ltd., turned out a record number of Hummerettes, the week's output totalling fifty-two. Several times fifty has been approached. In the new year the output will be greatly increased.

**Saturday's Cycle Car Trial.**

Among the entries for next Saturday's cycle car trial—the first of its kind—organised by the Sutton Coldfield and Warwickshire A.C. are two Perrys, two G.W.K.'s, a Morgan, Rollo, P.M.C., Motorette, and Humberette. The course measures approximately 100 miles, and includes Sunrising and Warmington hills in the morning route, and Edge Hill on the return journey from Banbury.

**Antipodean Road Race.**

The West Australian M.C.C. recently carried through successfully a 150 miles motor cycle handicap on lines described as somewhat similar to the T.T. Race. The winner turned up in Lewis, who rode a 2½ h.p. N. Hudson and negotiated the trying course in 4h. 23m. 58s. He used Dunlop tyres. Fastest time was made by F. Baker (3½ h.p. Rudge), 3h. 56m. 43s. The event created great interest in Perth and all along the route.

**Outputs Sold.**

The Swift Co. and Perrys have sold the whole of their 1913 output of cycle cars, which remarks also apply to the Singer. It is worthy of special mention that the cycle cars mentioned were each first illustrated and described in these columns, and, in fact, *The Motor Cycle* is the only journal to have published detailed illustrated descriptions of the three cycle cars named. We give the dates for reference purposes: Singer, August 29th; Swift, November 7th; Perry, November 21st.

**A.C.U. Notes.**

**UNOFFICIAL ROAD TRIALS, SUSPENSION.**—The A.C.U. has decided to suspend the registration of F. Begley from the 10th inst. to the end of the year, on account of his having taken part in an unofficial road trial a few weeks ago. His passenger will also be held to be incapable of holding registration for the same period.

**PERMIT GRANTED.**—A permit has been granted to the Bournemouth and District M.C.C. for a reliability trial on January 8th over a course measuring 128 miles. The Noble Iddon trophy, which is competed for during the trial, will be awarded to the rider gaining the highest number of marks.

**MISLEADING ADVERTISEMENTS.**—The attention of the A.C.U. has been called to misleading advertisements published in the motor cycle papers, and steps are being taken to remedy the matter.

**THE 1913 COMPETITION PROGRAMME.**—The Mersey M.C. (Liverpool) have booked the following dates for competitions during 1913: March 21st, May 12th, June 27th and 28th, August 4th, and October 28th.

**FUTURE EVENTS**

Dec. 21.—Sutton Coldfield and Mid-Warwickshire A.C. First Cycle Car Trial.

„ 26.—N.W. London M.C.C. Open Winter Run to Gloucester and Back.

„ 27-28.—M.C.C. Annual Winter Run to Exeter and Back.

1913.

Jan. .. —A.C.U. Open Silencer Trial.

„ 18.—North Middlesex M.C.C. Open Trial.

Mar. 1.—A.C.U. Open One Day Trial.

**Novel Fittings.**

One of the Alcyon machines which competed at the Gometz hill-climb not only had double the usual number of valves, but was fitted with two carburettors. It is said that two heads are better than one; possibly the same applies to carburettors.

**Cairo to Alexandria.**

Three Englishmen, on motor cycles, recently rode from Cairo to Alexandria and back, a distance of over 337 miles. The roads are said to be the worst in Egypt. The ride was held under the auspices of the Cairo Sports Club. One of the competitors, J. Price, rode a 3½ h.p. Mead, and on the journey used eight litres of petrol and one litre of oil, and attained a maximum speed of 46½ miles an hour.

**Nice La Turbie Hill-climb.**

The above event was decided on the 15th inst., and drew an entry of twenty-eight competitors. The contest was divided into two classes—those who competed for a club challenge prize, and a purely speed event. The results on speed are: 1st, Yenne (Escoffier-Kochler), 7m. 28½s.; 2nd, Agnero (Peugeot), 7m. 50½s.; 3rd, A. J. Dixon (Singer), 8m. 13½s. The climb is about four and three-quarter miles in length, and comprises several hairpin bends and sharp turnings.

**Bound for the Antipodes.**

P. Weatherilt, the well-known Zenith exponent, is leaving for Sydney with S. L. Bailey to-day (Thursday).

**Motor Cyclists and Charity.**

The Brookdale Club, Catford, is providing a Christmas dinner and entertainment to 300 of the poorest children of the district at its headquarters, Catford. Last Christmas over 200 children were the guests of the club.

**The London-Gloucester Run.**

In addition to the entries for the N.W. London M.C.C. Gloucester run given on page 1529, the following entries have been received: Elswick Co. (Elswick), James (Triumph), Strickland (James), Fletcher (Douglas), Dreydel (Ivy sc.), and Jeffery (Whitgift cycle car).

**Class B Records Broken.**

Late on Tuesday afternoon we received a telegram from the Brooklands Track informing us that S. L. Bailey, on his Douglas, fitted with A.B.C. steel cylinders and fittings, had broken the Class B records for the mile and kilometre. The speed for the kilometre was 72 m.p.h., and for the mile 70 m.p.h.

**Guide Cards through Towns for Motorists.**

To enable motorists to find their way through towns and cities where it is often difficult to follow the main roads the Automobile Association and Motor Union has prepared a series of cards showing selected routes through a large number of towns and cities. These plans are based upon the Ordnance Survey, and, in addition to indicating "recommended" routes, indicate other main roads carrying heavy road traffic which are best avoided. The cards are being distributed to members, upon request, from the head offices and branch offices of the Association. A few towns in respect of which guide cards have been prepared are: Brighton, Burton-on-Trent, Canterbury, Carlisle, Chelmsford, Chester, Colchester, Coventry, Doncaster, Harrogate, Lancaster, Leamington, Newcastle-on-Tyne, Preston, Reading, Stamford, Warwick, York, and further towns are being dealt with.



The English riders who went over to Gometz-le-Chatel to compete in the hill-climb last Sunday. From left to right: W. Pratt (3½ h.p. P. & M. sidecar), H. C. Mills (3½ h.p. Green-Zenith sidecar), F. W. Barnes (3½ h.p. Zenith), and W. G. McMinnies (3½ h.p. Triumph). In the background may be seen Mr. T. W. Loughborough, H. P. Beasley (A.C.U.), and E. M. P. Boileau ("The Motor Cycle").



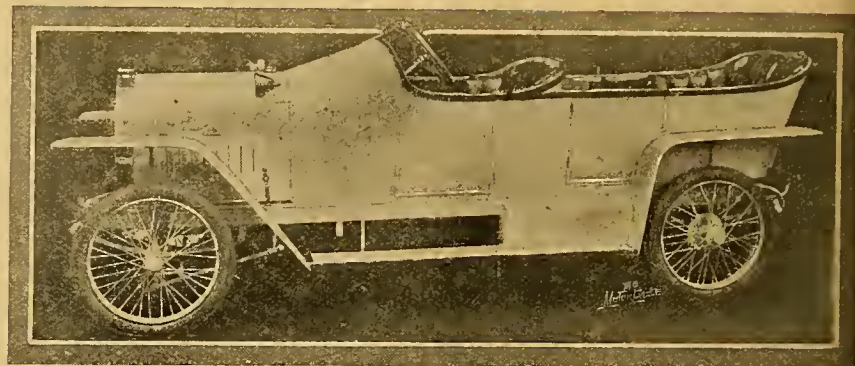
## THE LITTLE SALON.

**A**FTER the Grand Salon de l'Automobile, the Petit Salon was distinctly disappointing. There were only a few cycle cars and one make of motor bicycle to be seen.

The La Roulette cycle car was not without interest, though not shown as a final model. The chassis was of pressed steel, and the motive power a twin water-cooled engine, thermo-syphon circulation, and fed with gas from the new type Longuemare carburetter. The transmission was by chain to the counter-shaft, which carried a leather-to-metal friction clutch and a differential. The final drive was by belts, the rear wheel sliding forward and giving the free position and applying the brake. The model shown had no change speed gear, but we understand that in future models the front pulleys will be of the expanding type. Two brakes are fitted, one of which is applied to the counter-shaft by means of a pedal, the other acts upon belt rims on the back wheels, and is operated by a lever which forces the wheels back. The springing on semi-elliptical springs fore and aft appeared to be very good. The chassis shown with body was also interesting. The seats were arranged tandem fashion, and afforded plenty of room. The front seat would accommodate an adult and a child, while the rear seat would take two adults at a pinch. The coachwork and upholstery were distinctly good. The firm showing La Roulette also showed Kempshall tyres, and were agents for the Sarolea motor bicycle. This latter was shown in two sizes—2½ h.p., 66 × 86 mm., and 3½ h.p., 85 × 88 mm. Both models were built in strict conformity with English ideas, and were fitted with Armstrong three-speed gears and B. and B. carburetters, the whole bearing a very distinct resemblance to a well-known English make.

### Another Friction-driven Runabout.

The La Flèche on En dus Jack, 16, Av. Pereire, Astrière, was a friction driven vehicle with a patent device for varying the pressure of the disc against the friction wheel. It was provided with a lever for starting the engine from the driver's seat, which also, when pushed



8 h.p. Fleche which has a single-cylinder engine and tandem seats.

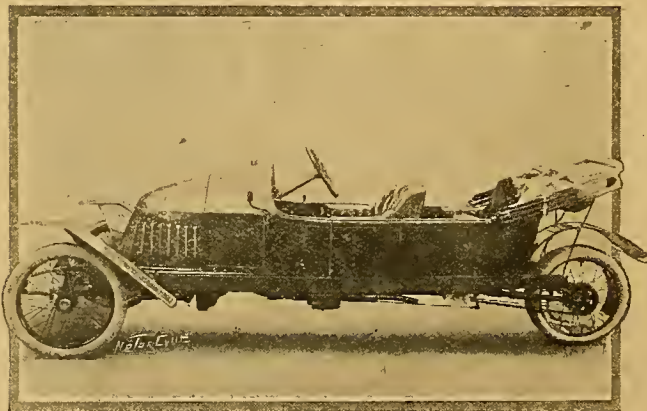
forward, applied the rear brakes. The motive power was a water-cooled 8 h.p. Buchet engine, or a 14 h.p. Chapuis Dornier could be fitted to order. It was shown fitted as a three-seater, the seats being arranged tandem fashion. The back seats were made detachable so that a tradesman's box or racing tail could be fitted. The final drive to the near side rear wheel was by chain. The next item of interest was a tandem seated tricar or three-wheeled cycle car of tremendous length and fairly substantial weight—La Torpille, Perrin et Cie., Annonay (Ardèche). The motive power was a 14 h.p. Chapuis Dornier engine, cooled on the thermo-syphon system by means of a multi-tubular radiator arranged on the Renault principle in front of the dash. From the engine to the three-speed gear box the drive was through a friction clutch and propeller-shaft, the final drive being by chains. The back portion was sprung, the rear wheel being carried in an inner frame. The front portion was suspended on full elliptical springs, the upper leaves of which were clamped on to the upper portion of the chassis. Other points of interest were that the change speed lever worked in a gate and the back wheel was shod with twin tyres. Among the other exhibits were an old and respected friend in the form of an A.C., and the Baby light car lately described in these pages. The latter looked a well-finished and sensibly designed vehicle.

### PILOT SIDECAR.

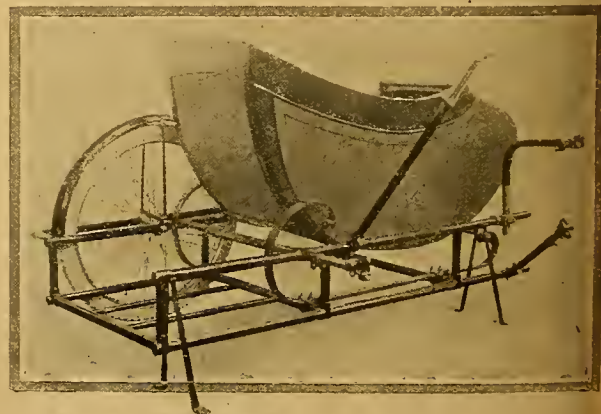
The Pilot Motor and Cycle Co., Soho Road, Handsworth, Birmingham, exhibited several types of sidecars at the Olympia Show last month. One of the models was provided with a hammock springing suspension to the body; the side members were extended behind the body, and at each end were shackles to which long springs were attached. Bolted to these long springs were ordinary C springs on which the body was carried; underneath were two spiral springs supporting the C springs and fastening them to the chassis. The result is that the body is most luxuriously sprung.

Another feature was the four-point suspension, the sidecar frame was, of course, attached to the saddle tube and close to the rear axle of the bicycle, but it was also fastened at two points to the bicycle down tube. The body had a well-padded back and a lid fastening over the front portion on which were pockets for maps.

Another model was the Safety sidecar. The chassis had two longitudinal members on each side, one above the other, and the wheel was carried in a fork. The model shown possessed the ordinary type of C springs, but if it is desired to use a lighter model, a coil spring arranged fashion could be fitted, which saves a good deal of weight. An efficient grid luggage carrier was situated behind the chassis.



La Torpille tandem seated voiturette, which is propelled by a 9 h.p. four-cylinder engine.



Pilot sidecar frame and springing, showing luggage grid and the now popular four-point attachment.



# THE GOMETZ HILL-CLIMB.

British Riders secure Three Firsts.

UNFORTUNATELY, owing to the differences existing between the Federation of French Motor Cycle Clubs, the entry at Gometz did not assume the same proportions as last year. The total entry amounted to thirty-three, of which six were English, and of these Griffith and Rogers were missing. Our readers will remember that the course is up a perfectly straight hill through the village of Gometz-le-Châtel. The road was admirably policed by *gens d'armes* and *gardes-champêtres*. Unfortunately the weather was not too favourable, as just before and during the competition there was a slight rainfall, which increased until the hill climb was over. The road surface was smooth but covered with thick mud, which had a decidedly retarding effect on the machines. The English competitors had crossed over by the 9 p.m. train on Friday, and after a rough crossing *via* Calais reached Paris in the early hours of Saturday morning. Mr. H. P. Beasley, assistant secretary of the A.C.U., travelled with the party. The chief objection to the Calais service is that the machines are placed on deck, but they were covered with a tarpaulin and did not suffer any appreciable damage. Most of the competitors who stayed at the Hotel de Grand Brétagne went to the Salon in the morning, some attended the International Conference, and others visited the Petit Salon and other places of amusement during the afternoon and evening.

## On the way to the Course.

An early start was made for the train to Bures. As the line runs below the level of the road from the Gare de Luxembourg, the first station level with the ground, Gare de l'Enfert, had to be reached. Here the railway people behaved splendidly, and to aid the men a lady came up and did yeoman service as interpreter. Bures is a tiny station about three-quarters of a mile from Gometz, at which a woman fills the several posts of station-master, ticket-collector, and porter. Here M. Longuemare and M. Plazolle, secretary of the A.C.F., brought cars to convey several of the English delegates to the scene of the hill-climb—a kindness which was much appreciated. The weighing in took place in a farmyard, the clerk of the scales being M. Buissard. The course was 800 metres in length, and A.C.F. timekeepers were stationed at the foot and at the summit of the hill, the maximum gradient of which was approximately 1 in 12. There did not appear to be a great improvement in the French machines since the hill-climb last year, but signs of the influence of the English designs were not entirely absent.

## Novel French Machines.

Several French machines presented points of interest. One of the Alcyons possessed not only four valves in the head, but two separate Claudel carburetters. It was also provided with a mechanical oil pump delivering oil through a sight feed to the big end and main bearings.

One of the René Gillets, we noticed, possessed a flat belt, while one of the competing Alcyons had a new spring device on the mainshaft for absorbing the shock of impulses of the engine. A curious machine was the Albatross, which had overhead valves; to provide clearance for the valve rockers the lower horizontal frame tube had been cut away to half its normal thickness. It possessed a huge oil pump, and had a bore and stroke of 76 x 110 mm. Consequently the cylinder was tremendously tall. An Austral tricar was provided with a whip for chastising the savage French dogs.

## The Competition.

The ascents were all made without incident, though several competitors swerved in the mud, which, however, was too heavy and wet to be dangerous. The ascent of Barnes (Zenith) in the 1,000 c.c. class was impressive, and Pratt (P. and M.) made a very good performance. The Clement machines, especially that with the new 3½ h.p. Motosacoche engine, were much admired and are clearly the most up-to-date of the French machines.

Numerous English spectators were present, among whom we may mention Messrs. T. W. Loughborough, W. H. Wells, T. H. Tessier, and F. E. Baker and H. Collier, sen., who arrived too late for the competition, which when once started was very quickly run off. The results were as follows:

### CLASS I. (up to 250 c.c.).

	m.	s.
1. Stoeffel (Alcyon) ... ..	0	42½
2. Canale (Alcyon) ... ..	0	50
3. Bange (Terrot) ... ..	1	7½

### CLASS II. (up to 350 c.c., single).

1. Lehmann (Alcyon) ... ..	*0	74½
2. Franquebalm (Terrot) ... ..	0	40
3. Dacier (Austral) ... ..	0	43

### CLASS III. (up to 350 c.c., multi.)

1. Lacroix (Peugeot) ... ..	0	41
2. Fenton (Clément) ... ..	0	49½

### CLASS IV. (up to 500 c.c., single).

1. W. G. McMinnies (Triumph) ... ..	0	35½
2. Lombard (Albatross) ... ..	0	35
3. F. W. Barnes (Zenith) ... ..	0	39

\* Fastest time of the day.

In this class Mills (Zenith-Green) made the ascent in 38s., but was disqualified, as his entry had not been received in time.

### CLASS V. (up to 500 c.c., multi).

1. Perrin (Peugeot) ... ..	42½	s.
2. Fenton (Clément) ... ..	45	s.

### AMATEUR CLASS.

Baudry (Clément) ... ..	55½	s.
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### SIDECARS.

#### CLASS I.—No entrants.

#### CLASS II. (up to 500 c.c.).

1. F. W. Barnes (Zenith) ... ..	54	s.
2. Fenton (Clément) ... ..	1m.	4s.
3. W. Pratt (P. and M.) ... ..	1m.	7s.

#### CLASS III. (up to 1,000 c.c.).

1. F. W. Barnes (Zenith) ... ..	41½	s.
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### CYCLE CAR CLASSES.

Bourbeau (Bedelia) ... ..	1m.	5½s.
Bonville (Bedelia) ... ..	1m.	4s.

The scarcity of cycle cars was due to the A.C.F. introducing a new regulation which ruled out the heavier types. Happily, however, this was altered at Saturday's meeting, and the limitations are now the same as ours.

As last year, a trumpeter turned up at the start, but this time his services were not employed. After the hill-climb several prominent members of the A.C.U. were entertained to lunch by the A.C.F., whose officials as usual extended a hearty welcome and were most hospitable.



— Lehmann (four-valve single-cylinder Alcyon), who made fastest time of the day at the Gometz-le-Châtel hill-climb, beating 8 h.p. twins. This type of engine was used in the last T.T. race.



# The Congress of the F.I.C.M. in Paris.

International Trial in England next year, and in France in 1914.

ON Saturday the second meeting of the International Federation of Motor Cycle Clubs took place at the Automobile Club de France, Place de la Concorde. The delegates were received by the Baron de Zuylen de Nyvelt, the Chevalier René de Knyff, the Comte de La Valette, and Messieurs Longuemare and Fenton, sen. The representatives of the different countries were then entertained right royally at luncheon by the Automobile Club of France. At the conclusion of the luncheon, the Baron de Zuylen expressed great pleasure at the Federation having chosen the A.C.F. as the meeting place of the second conference. After a brief interval those present adjourned to the committee room. In addition to those already mentioned, Messieurs Fenton, jun., Hugo Storr (chairman Touring Moto Club of France), and Debuilly (chairman Auto Cycle Club of France). England, Messrs. Boileau, Tessier, Pratt, and Loughborough. Belgium, Messrs. Beukelar, Michant, Guillot, and Fagard. Holland and Denmark, Mr. R. toe Laer. Switzerland, Messrs. Mégevet and Neper. Italy, the Marquis Ferrero di Ventimiglia. The United States and Canada, Mr. W. H. Wells. Austria, Mr. Fasbender. Germany, Mr. M. D. Hein.

## An International Trial.

At the beginning of the meeting the Baron de Zuylen took the chair, but later vacated it in favour of the Chevalier René de Knyff. After Mr. Loughborough had read the minutes of the last meeting, Mr. E. M. P. Boileau, speaking in French, and on behalf of The Auto Cycle Union proposed that the international trial for 1913 should be run in connection with the first section of the A.C.U. trials in the North of England. He further suggested that each country should send a team of three riders, and each competing machine should be painted a distinctive colour, the riders to carry armlets and a rosette of the same colour. These colours, which were ultimately accepted, were the same as those employed in the Gordon-Bennett Races, and were, with some additions, as follows: England, green; France, blue; Germany, white; America, white and blue; Belgium, yellow; Spain, yellow and red; Austria, red and green; Italy, red; Switzerland, red and white; Denmark, green and white. In conclusion, Mr. Boileau extended a hearty welcome to the teams on behalf of England, and hoped that the best team would win. (Applause.)

There then ensued a lively discussion, during which everybody tried to speak at once. France claimed priority of dates for the Grand Prix races in July, which clashed with the A.C.U. Trial, and Belgium claimed the week after for its races. After further discussion, it was decided to hold the international trial in England over four days, about September 22nd. The distance is to be 1,000 kilos., 250 kilos. per diem, and the A.C.U. is to draw up separately the rules, while it was also decided to hold the 1914 trial in France.

The rules of the Federation were then passed, the only alteration from the draft submitted by the A.C.U. being that the annual subscription for each country was reduced to 150 francs (£5).



The style of road surface which is encountered in various parts of Holland.

The next procedure was the appointment of a sub-committee to consider the rules of the A.C.F. affecting the classification of motor cycles, and their application internationally. The sub-committee, consisting of Messrs. Longuemare (chairman), Boileau, Fasbender, toe Laer, Wells, Guillot, Mégevet, and Hein, then proceeded to business at once. A lengthy discussion followed, which lasted till seven o'clock. These rules were divided as follows: For motocyclettes, known as two-wheelers, i.e., motor bicycles in England. Motor cycles, i.e., motor bicycles and sidecars or cycle cars. It is interesting to note that the basis of the A.C.F. regulations was the A.C.U. rules; but the chief differences were soon brought into line with the A.C.U., so that all the countries represented will work under practically the same regulations.



THE GOMETZ-LE-CHATEL HILL CLIMB. (See previous page.)

H. C. Mills (3½ h.p. Green-Zenith sidecar), who was disqualified, as his entry had not been received in time.

F. W. Barnes (3½ h.p. Zenith) travelling well. He won Classes 2 and 3 for sidecars.

A lecture on "Carburation" was given by Mr. Charles Binks before the Denton M.C.C. on the 10th inst., and the next evening before the Leeds M.C.C. The paper was much appreciated.

Mr. T. E. Patchett has been appointed "commercial manager and secretary" to the Enfield Cycle Co., Ltd. Mr. Patchett has been with the company for sixteen years, and for several years past has held the position of secretary.





## From London to Le Mans.

**L** E MANS, the scene of one of this year's French road races, is not very conveniently situated. To reach it by rail from England it is necessary to go to Paris and change, consequently the way is by motor cycle over the most direct road. As soon as I heard I was to go there I rang up a friend who was keenness itself when he heard of the proposed trip, and in a short time all was fixed up.

### The Start.

My mount was a brand new  $2\frac{3}{4}$  h.p. Douglas, only delivered the day before, and consequently, so far as I was concerned, untried, and up to the time of starting I was busy fixing number-plates and other odds and ends. Among the latter was the G.B. plate, which everyone who holds the much too bulky International pass must attach to his rear number-plate. This is now made of heavy enamelled iron, as several people have complained to the Royal Automobile Club of the flimsiness of the old kind. The light plate, though not so smart to look at, is practical, and the new one, though it is everything as regards appearances, is too heavy and requires to be fixed very securely. Thanks to the efficiency of the R.A.C. Touring Department, to which motor cyclists have full access through the Auto Cycle Union, the preparations were soon over, and when the buckle of the last strap had been tightened we were off for Newhaven. Dodging tramlines and traffic by sundry back ways, we avoided the whole of Croydon, and at Purley Corner struck the main road. Here a stop was made to tighten up my rather heavy bag, which was enveloped in a waterproof cover, and to which a pair of Hutchinson boots and a macintosh were attached. When the trick of fastening the straps on tightly and securing the ends together was learned everything kept taut. Despite its newness, the little machine pulled well, and an excellent run was made to Lewes, on the outskirts of which a stop was made to light the lamp.

### Dinner at Lewes.

Here we stopped for dinner at the Bridge Hotel and met our companion, who had arrived on his Triumph only two minutes before. The remainder of the journey over the twisty road to Newhaven was not too pleasant. This disgraceful lane is under the consideration of the Road Board, and the sooner that body gets it straightened out the better. It is positively dangerous for any who do not know it to traverse it by night. We had timed our arrival well, and there was plenty of time to empty petrol, weigh the machines, shorten my belt, and see the machines safely stowed. My companion is a sailor, and his practised eye soon told him that the machines as stowed would roll into one another all night, so one was placed fore and aft and the other athwartships. I must congratulate the L.B. and S.C. Railway Co. on their care in covering the motor

bicycles up and making them secure for the voyage. In fact, on both the outward and homeward journeys the machines were most carefully handled on both sides of the Channel.

After a comfortable but rather rough crossing we arrived at about 2.30 a.m. and found that the man with whom we had arranged for petrol had failed us, and all we could get was five litres from a porter, who charged us three francs. Our lamps though lit before burned brightly, and knowing my way out of the town I swung out on to the front, turning left at the extreme end and up the steep hill and on to the road to Rouen, which was in fairly good order. One has to be careful to take the right hand fork at the top, as the other road goes north of Paris.

### A Short Halt for Adjustment.

At the first village we found a level-crossing with the gates shut, but fortunately the old man in charge was awake and let us through. All went well until an ominous noise from the front wheel told me something was wrong. An inspection revealed it to be a loose cone, due I may say in justice to the makers to my own fault. I had had to remove the wheel to fix the front number-plate, and in replacing it had put a washer back wrongly. Luckily, all the balls were retained, and thanks to the skilful help of my friend we fixed things up. Meanwhile dawn had broken, and a quick run over a good stretch of road followed which brought us to the outskirts of Rouen, the *pavé* being of the worst description. After breakfast it was not quite so bad, but on the way to Grande Couronne the road possessed no surface at all. We had both been going pretty hard when we suddenly struck a section which was completely worn out, no other words can describe it, and we both narrowly escaped a bad toss. The next incident was that probably owing to the surface our minds were so much occupied that we found ourselves five miles out of the way beyond Bourg-Achard, where a kindly motor car driver put us right.

### Morning and Better Roads.

The roads were now excellent, the sun came out, and with the wind behind we made splendid progress through old-world market towns and along tree-lined highways through Brionne, Bernay, and on to Gacé. Mostly on the level, but at times climbing long hills, up which the little one needed nursing, as the hard work and her new condition caused symptoms of overheating at times. The way out of Gacé was somewhat complicated, and after we had gone two or three miles we consulted our maps and a signpost. Meanwhile a cyclist came along and my friend addressed him in a mixture of French and English. The cyclist replied in a mixture of English and French, and presently turning to me said, "Sprechen Sie Deutsch?" To which I replied, "Ein bischen" (a little) in fluent



### From London to Le Mans.—

Teuton, which fairly started him. However, he got ahead of me in German, and I had to ask him to re-lapse into French, which I know fairly well. To make a long story short he put us in the right direction, and after covering the distance quickly we struck Route Nationale No. 138 and reached Alençon, where we enjoyed a well earned lunch and a rest. The road to Le Mans was somewhat rough, but we soon got there, arriving at about 2 p.m.

### The Town en fête.

The race has already been described in detail. It was the best Continental road race of the year, and resulted, as our readers will remember, in two British wins, that of Devay on Newsome's Triumph in the 500 c.c. class, and that of Bailey in the 350 c.c. class. It is interesting to record that I saw Bailey's engine taken down at Brooklands for the first time after the great race. Though naturally over-oiled all the time, there was very little carbon deposit and not a shake was traceable in any of the bearings. Mr. Mellano, the late London manager of the Hutchinson Co., was an interested spectator, who rejoiced greatly at the British triumphs.

The evening before the car event the whole town of Le Mans was *en fête*. In the great square, the Place de la République, were thousands of people, many driving cars and cycle cars without cut-outs and making a most unearthly din. In one corner there was a space roped off for fireworks, while the two chief objects of interest in the square were the bandstand, where a full military band discoursed sweet music, and the statue of Jauréguiberry brandishing his sword. It was indeed a lively scene. As the evening wore on the crowd of pedestrians increased and the vehicles became fewer in number.

### Fireworks Galore.

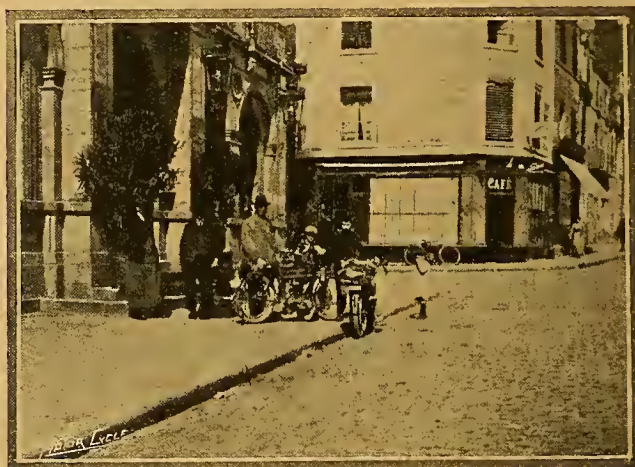
As I had had a long journey the day before and was up at five o'clock that morning, and I had to be up again at five the next morning, I went to bed, but had no sooner put out the light than a deafening report sent me out of bed and to the window with a rush. *Les feux d'artifices* had begun, and very good they were. Rockets and shells shrieked through the air, and rocket sticks and sparks fell on the roofs of the adjoining houses, but everyone was much too happy to care. The show ended, as I thought, with a fine set piece of a racing car with wheels that revolved and *Coupe de la Sarthe* written beneath it in letters of fire. So I went back to bed and to sleep. In five seconds my room was lit up as bright as day, and to the window I rushed again. Jauréguiberry's statue was a mass of flame, to every spike of every railing was lashed a firework, while to his sword arm was tied a stake to which a bunch of fireworks was attached. It was a grand sight. Then a deafening series of explosions, and all was quiet. That afternoon I had met a keen French motor cyclist who spoke perfect English, and, pointing out to him that he had no silencer, he remarked, "You see I'm a Frenchman and I like noise." He spoke the truth—they do.

On the next day at the car races there were many more people. The car race was a most impressive affair. The high speed of the competing vehicles and

the numerous incidents at the depots rendered it most attractive.

### The Return Journey.

We left Le Mans at 3 p.m., and this time took another road back to Dieppe in search of better surface. We began by ascending steadily out of the town and entering fine hilly country we continued to Bellême, at the outskirts of which the Triumph punctured, the only trouble my friend had throughout the trip. The Douglas ran regularly but without power, and as we were racing against nightfall there was only time to adjust a tappet and none for further investigations. So we pushed on all we knew, passing through Mortagne, after which it became bitterly cold, and then entering Verneuil, where the *pavé* is of the vilest. Between this place and Nonancourt the road was somewhat rough, but on the whole its general condition was better than that by which we came, and, moreover, we never once lost our way. The last lap in the twilight was over a plateau on an absolutely straight and smooth road. Two kilometres from



On the way to Le Mans. A stop for lunch at Alençon.

Evreux we stopped to light up, and on asking for water for the lamp it was brought in a bucket. We were indeed glad to see the lights of Evreux and the welcome doors of the Hôtel du Grand Cerf. We had been up at a quarter to five, and between 3 p.m. and dinner time had covered eighty-five miles.

### A Choked Silencer.

The next morning we had a splendid run unmarred save by the *pavé* in Louviers and Rouen. Near the latter place, as we were in good time, I glanced at my silencer, and there saw the cause of the loss of power at a glance. Almost every hole was sooted up, owing, of course, to too liberal a supply of oil to the new engine. When the silencer was clean the old healthy bark returned, and the kilometres swept quickly by. In Tôtes, as I was short of oil, I purchased a tin of Huile A.D., not quite so thick as Price's or Vacuum, but of a respectable consistency, and, though I put it in with some misgiving, I found it suited the engine excellently. Then on to Dieppe and on board the *Brighton*, which brought me comfortably back to England. Thus ended one of the most eventful, interesting, and enjoyable week-ends I have ever spent. E.M.P.B.



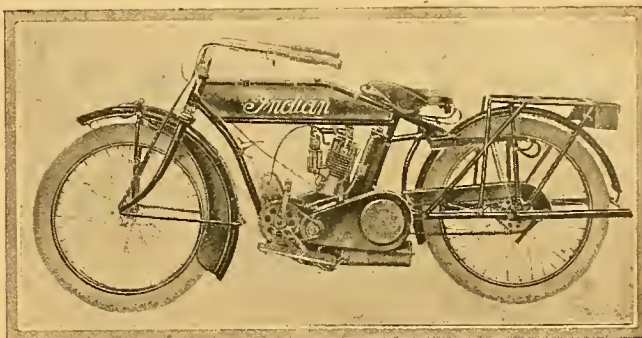
## Essex M.C. Annual Dinner.

Although some few members were in France at the Gometz-le-Chatel hill-climb no fewer than 120 members and guests were present at the annual dinner of the Essex Motor Club on Saturday last at the Great Eastern Hotel.

The Chairman (Mr. Stenson Cooke) in proposing the health of the club, referred at length to the work of its president—Mr. S. G. Cummings—which had gone far to make the club the successful body that it was at the present time. He coupled with the toast the names of Messrs. A. P. Howard and E. J. Bass. He also made a deserved tribute to the past work of Mr. A. G. Reynolds and a reference to Mr. Owen Summers (now in America) and Mr. F. A. Applebee, sen., who was present. Mr. E. J. Bass gave some instructive figures concerning the position of the club, which now numbers 150 members—an increase of 68 on the year. He pointed out that the club was distributing a large number of prizes.

Among those to receive prizes from the hands of the chairman was F. A. Applebee, jun., winner of the Senior Tourist Trophy Race. Mr. R. Selz proposed the health of "The Visitors, Ladies, and Press," to which Mr. H. Rutter and Mr. Whittall, in the absence of Mr. Douglas Leechman,

replied; while Mr. S. G. Cummings proposed the health of "The Chairman," which duly elicited a response. Interspersed with the speeches were the varied items of an admirable musical programme.



1913 3½ h.p. single-cylinder Indian with spring frame and kick-starter.

## North-West London M.C.C. Annual Dinner.

A company of about sixty sat down to the annual dinner at the Richelieu Hotel on Saturday last, the number being augmented later in the evening. Mr. J. W. Thomas (Hippo-Pa-Thomas) acted as chairman. The proceedings passed off in the happy family spirit associated with the club's functions, the usual toasts being interspersed with musical items, among which special mention may be given to Miss Thomas's two contralto songs, the glees of the St. James's Glee Singers, and the humour of that other old favourite, Mr. Cotchin. The Chairman, in a happy speech, when toasting the club, gave a *résumé* of the year's proceedings with a tribute to the work of the officials. Mr. Pooley, in reply, called on the club to select carefully their officials for the coming year to take the place of the rather large number who are compelled to vacate office. Club life must continue on other lines than a purely competitive programme in future if clubs are to last—the perfection of modern machines is undoubtedly weakening the sporting side of competitions run on the stereotyped lines. The new challenge cup presented by Mr. E. Gwynne is a most handsome piece of

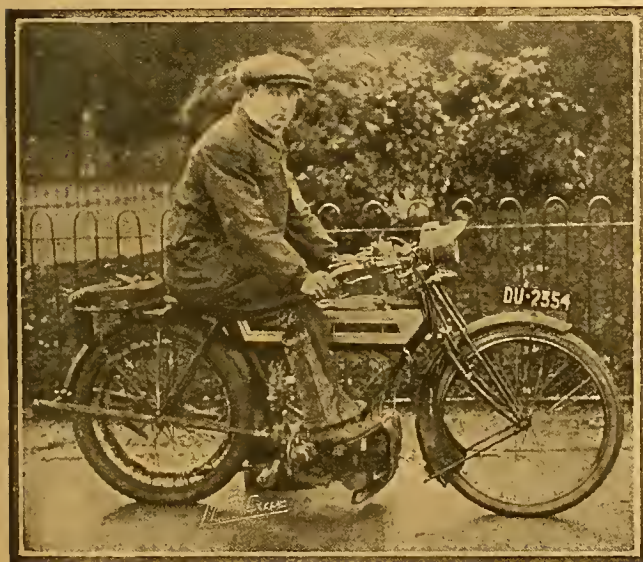
plate in silver gilt. The trophy is a perpetual one, and was gained for the first year by H. J. Pooley. The Thomas Cup fell to H. Karslake, and in all about 250 prizes and medals were presented to the successful competitors by Mrs. J. W. Thomas.

## ANNUAL LONDON-GLOUCESTER RUN.

Entries for the annual twelve hours open trial of the North-West London Motor Cycle Club are coming in satisfactorily, and it has been decided to extend the closing date for entries until to-morrow, the 20th inst. We are asked to state officially that entries posted to-day, Thursday, the 19th inst., will be accepted at the ordinary fee 12s. 6d. and should be addressed to Mr. H. E. Taylor, 17, Taverton Street, Gordon Square, W.C. This concession is in order to allow motor cyclists who see the notice of the event for the first time in this journal still to partake in the run. Later entries can only be accepted at double fees and if posted at the latest on Saturday, the 21st inst. This event marks the anniversary of the first open winter run under A.C.U. permit, the corresponding event last year being the first of its kind. The North-West London club events are always carefully organised, and as the winter run is free from irksome conditions, it should be an excellent holiday fixture.

The following is an early list of entrants received up to last Tuesday:

Rider and machine.	Rider and machine.
W. C. Knight (8 Zenith sc.)	Chas. Janicker (Rudge Multi)
W. Cooper (8 Humberette)	J. Beal (—)
H. F. S. Morgan (8 Morgan)	G. Nott (8 Matchless sc.)
R. Scott (3½ Triumph)	E. Rose (7 Indian)
Frank Thomas (7.9 G.N.)	C. L. Mowbray (3½ James sc.)
Osmond Hill (8 G.N.)	W. Ford (—)
G. D. Hardee (3½ Triumph)	H. J. Pooley (3½ Premier)
C. Meredith (3½ Bradbury sc.)	V. Garland (5-6 Clyno sc.)
R. G. Mundy (8 G.W.K.)	C. A. Werner (6½ N.S.U. sc.)
J. Cocker (4½ Singer sc.)	P. A. Goddard (2½ Douglas)
D. R. O'Donovan (4 Singer sc.)	Claude Rose (7 Indian)
A. A. Brinkman (5-6 Clyno sc.)	H. E. Taylor (5-6 F.N. sc.)
W. O. Oldman (3½ Bat)	C. J. Burton (10 Mors car)
M. P. Gibbins (Rudge Multi)	



THE AGGREGATE CUP WINNER.

W. F. Newsome (Triumph), who in the four Quarterly Trials of the Herts County A.C. has easily scored top marks.

In the description of the Moto-Rève exhibit at the Paris Show in our last issue, we inadvertently mentioned that the Moto-Rève Co., Ltd., Alpertown, Middlesex, were the British agents for this make of machine, whereas the English Moto-Rève Co. is an entirely British concern, manufacturing the whole of its machines in England with the exception of the engine, and using English frames and fittings.





**Brookdale Club, Catford (Motor Section).**

The annual dinner will be held at headquarters, Brookdale Hall, Catford, this evening (the 19th inst.)

**Birmingham M.C.C.**

The smoking concert on Saturday last, at the Imperial Hotel, was well attended, and the evening proved most enjoyable. Mr. F. Lewis occupied the chair. The arrangements were admirably carried out by Mr. S. K. Jones.

**Surrey M.C.C.**

A penalty run will take place on Boxing Day, starting at 10.15 a.m. Route: Guildford, Godalming, Petworth, Arundel, Littlehampton, and return. Distance, seventy miles. The annual general meeting will be held on January 14th at headquarters.

**Brighton and Hove M.C.C.**

An enthusiastic meeting took place on Tuesday, December 10th. A committee was elected, with Mr. C. C. Spurin as chairman, and a club was duly formed with a membership of thirty. All interested are invited to communicate with the secretary, Mr. E. S. Northam, 52, Norfolk Square, Brighton.

**Manchester Amateur M.C.C.**

The annual dinner and prize distribution was held on the 12th inst. at Ingham's Hotel (Whilloughby's). There was a good attendance of members and friends, the chair being taken by the captain of the club, who distributed the prizes to the successful members. The prize winners were: Gold medals, S. H. Y. Birley, R. Birkett, and H. D. Ashworth; silver medals, R. N. Earwaker and J. McCann; special prizes, F. Taylor, jun., H. Marsden, T. L. Timperley, and J. McCann.

**Liverpool A.C.C.**

The annual supper and prize distribution of the above club were held on the 11th inst. in St. Margaret's Hall, and were attended by between seventy and eighty members and friends. The speeches were cut down to a minimum, and even then the evening's programme was not completed until 11.30. During the evening prizes were offered by the following for competition next year: Messrs. Lamb, Great-wich, Copland, Smythe and Wade, the Mead Motor Co., Pobjoy, Phillpott, and Baxter.

**Luton and South Beds M.C.C.**

The first annual dinner took place at the Red Lion Hotel on the 14th inst. The chairman, Major E. W. Brighton, announced that cups had been given to the club by Captain H. Green (president) and Mr. Harold Karslake, the latter to be called the Dreadnought Cup.

**Western District M.C. (London).**

The annual supper and prize distribution took place on the 4th inst. Mr. M. G. Tweedy, the retiring honorary secretary, was presented by the club with a cakestand. A committee meeting was held on the 8th inst. Hon. sec., Mr. E. S. Ritter, 27, Ennismore Avenue, Chiswick.

**Bristol B. and M.C.**

The annual supper was held at the Full Moon Hotel on the 7th inst., when about forty members were present. A pleasant evening was spent, the usual toasts being proposed and acknowledged. The speeches were interspersed with songs and music and by the presentation of prizes, something like thirty prizes and medals being distributed.

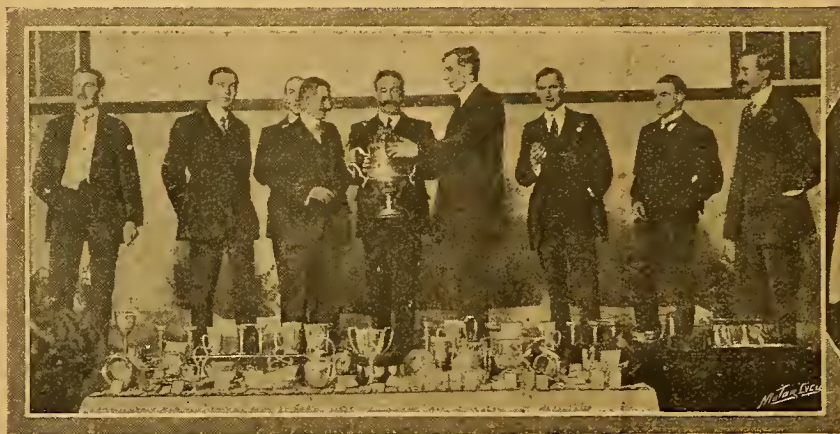
**Exeter and District M.C.C.**

The third winter reliability run from Exeter to Penzance and back, for motor cycles, sidecars, and cycle cars, will be held on Saturday, January 11th, 1913. Regulations.—The first machine will start at 7 a.m., and the route will be: Exeter, Moreton, Two Bridges, Tavistock, Callington, Liskeard, Lostwithiel, St. Austell, Truro, Redruth, Camborne, Hale, and Penzance. The speed from Exeter to Penzance and from Penzance to Liskeard will be calculated at twenty miles per hour. The speed from Liskeard to Exeter will be reduced to fifteen miles per hour. Cycle cars must not exceed 7 cwt., unladen.

**Dublin and District M.C.C.**

A company of members and friends, numbering a few short of one hundred, sat down to the third annual dinner of the Dublin and District Motor Cycle Club on Saturday evening at the Dolphin Hotel, the chair being filled by Mr. F. A. Wallen. The proceedings throughout the evening were most enthusiastic and enjoyable, and were characteristic of the manner in which all the undertakings of the club are carried out. A considerable portion of the evening was occupied in the distribution of the prizes won during the past season. There was an excellent musical programme.

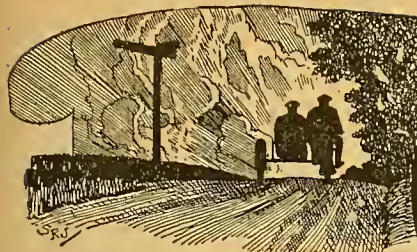
**LIVERPOOL A.C.C. ANNUAL PRIZE DISTRIBUTION AND SUPPER.**



Members of the committee on the platform. Mr. Roberts is seen handing the 50 Guinea Reliance Cup to the president Mr. Sellers, who in turn hands it over to the winner, Mr. E. F. Baxter. From left to right the members are: Messrs. Barton, Baker, Hobbs, Roberts, Sellers, Baxter, Mogridge (Chairman), Longton, and Phillpott.

Mr. and Mrs. Baxter loaded up with prizes. This photograph is suggestive of "collaring the lot!" All have been won on Rex machines.





## The New Petrol Substitute.

**N**O doubt, by this time, many of our readers have read in the newspapers varied accounts of the new petrol substitute. The steady increase in the price of petrol, coupled with the prospect of a still further increase in price owing to the growing demand for the commodity, is causing scientists and motor cycle manufacturers to turn their attention to the possibility of increasing the supply, or discovering a suitable substitute, in order to reduce the price.

At present, benzole seems to be the most popular competitor, and, as already pointed out, it can be obtained as a by-product of coal. As the chief mining centre of the world, South Wales will probably take the lead in producing the new substitute, and already South Wales colliery owners, alive to the value of the commodity and the rapidly increasing demand for it, are setting up plant at the most important of their collieries. What has yet to be discovered is whether it can be produced at such a cost as satisfactorily to compete with the imported article, and many scientists believe this possible.

It is asserted that, properly treated, South Wales coals, excepting, of course, the steam and the anthracite, will yield from 7% to 35% of their own weight in valuable oils similar in quality to petroleum. Refined oils have been made in Germany for some years, and great importance is attached to the recovery of the spirit in that country.

### Mining Expert's Opinion.

To gain further particulars regarding the new substitute, our Glamorganshire representative interviewed a well-known South Wales mining expert, who said that the cost of producing benzole from South Wales coal seams was such as to make the laying down of plant an exceedingly doubtful speculation.

The amount of benzole recoverable from, say, 100,000 tons of coal would be so small that even with the present high price of petrol the profits accruing to colliery owners would be very small. This would not allow the producer to grant a very material reduction in the price of the spirit. This fact would seem to throw cold water on the whole scheme, but, on the other hand, there will be an increased demand for petrol in the near future, and it naturally follows that there would be improved machinery and plant for the recovery of the spirit, so that with both combined it is more than probable that a modern plant, efficiently managed, would more than justify its production.

On the Continent for years the recovery of by-products has been a considerable factor in connection with a large number of collieries, and in Belgium many collieries would be financial failures if they depended solely upon the profits from the sale of coal. But the expert chemist, has stepped in to assist the mining engineer, with the result that the mines are working advantageously from a financial standpoint.

The recovery of by-products commenced at the Great Western Collieries, Powell Duffryn Collieries, Lewis Merthyr Collieries, and elsewhere is only an augury of future progress in this direction. The excellence of South Wales coals has been in a certain way a cause of loss. The mining engineer, having depended almost entirely upon the market price of his large and medium coal, has frequently "gobbed" the small, which could be utilised to advantage. The oils which are obtained by distilling coal at a low temperature have been completely ignored owing to the fact that a considerable proportion of small valuable coal has been "gobbed."

### A Profitable Use for Small Coal.

However, it is expected that the mine owner will now see the advisability of turning his small coal to greater advantage than hitherto. Of course the idea of utilising this coal extract is as yet in its birth. Nevertheless the fact that mining and engineering students are turning their attention to the study of the subject is taken as a very hopeful sign of eventual success. The Blaenavon Colliery Company have already placed orders for new coking ovens, which are now almost completed. The coking ovens will, of course, form a considerable factor in the production of the spirit. The company have also decided to set up extensive plant for this purpose, and expect to commence operations in the course of a few weeks, and to be recovering refined benzol in the early part of next year. Of course, the success of the scheme is not definitely assured, but the Blaenavon Co. are evidently very sanguine as to the ultimate success of their enterprise, for in their report issued to shareholders they point out that with the coming into operation of the new plant, and with anything like the usual conditions in the coal trade, they expect to realise large profits.

Surely the time is now far enough advanced when an effective petrol substitute should be brought into use, for with petrol controlled by a trust, which is credited with pressing the prices to an extravagant height, there has been a continuous enquiry for a suitable spirit which would serve consumers equally as well as petrol. It is really interesting to notice the shameful manner in which petrol has advanced in price since the end of last year, when it is generally supposed an arrangement took place between those who control our only constant supply. This action placed both dealers and the motoring public completely at the mercy of monopolists.

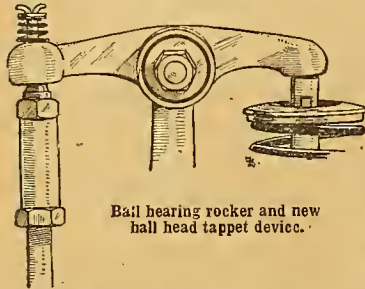
However, should the new discovery prove as efficient and economic as it is generally believed, then perhaps, after all, the way is open to freedom from the exactions of monopolistic trusts. It is also quite within the bounds of possibility that, should the substitute exhibit any marked success in the early stages of its trials, the present inflated price of petrol will fall.



# THE CHOTA RUNABOUT.

A True Cycle Car with Single-cylinder Engine and Belt Drive.

**N**OT long ago we published a description of the Buckingham engine, manufactured by Buckingham and Manly, of Spon Street, Coventry, and last week we were given an opportunity of examining the complete cycle car to which it is now fitted. We may recall that the engine has a single

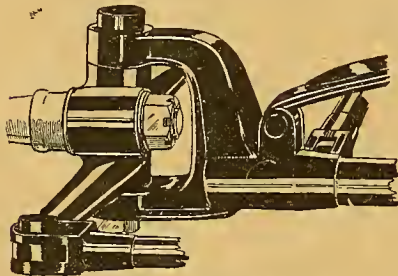


Ball bearing rocker and ball head tappet device.

cylinder of 89 x 120 mm. bore and stroke, overhead valves, and a large outside fly-wheel. A Senspray carburetter is fitted.

With the exception of minor improvements, such as a ball-head tappet and a magneto running at engine speed, the

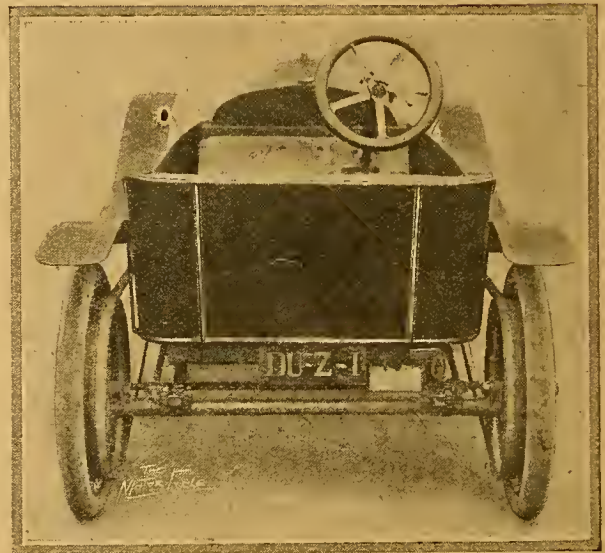
engine remains the same. Two chains transmit the power to clutch drums on the counter-shaft, which is placed well forward in the chassis, and either of



Front axle and springing of the Chota.

these clutches may be engaged by a single operating pedal. Pushed right forward, the low gear clutch is engaged; on being allowed to come backwards, first a free engine position is obtained

and maintained by a trip pedal mounted on the main pedal, then when the trip is released the high gear is engaged. The process is extremely simple, and it is impossible to change gear badly. The clutches are of large diameter, and, instead of sliding on the usual keyed or squared shaft, are held

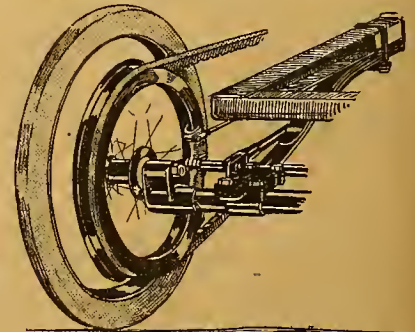


Rear view, showing the low build and simple construction.

to the shaft by four steel arms of ample strength, on which they slide.

## Belt Transmission.

From the counter-shaft, long belts drive the rear wheels and no differential is employed. The chassis is of channel steel, and all the wheels are mounted on similar spindles so that they can be changed with ease. The front of the frame is mounted on a single transverse spring, the rear being supported by two quarter elliptical springs, which are allowed to slide on plates on the rear axle. Long radius rods are used to maintain the correct belt tension.

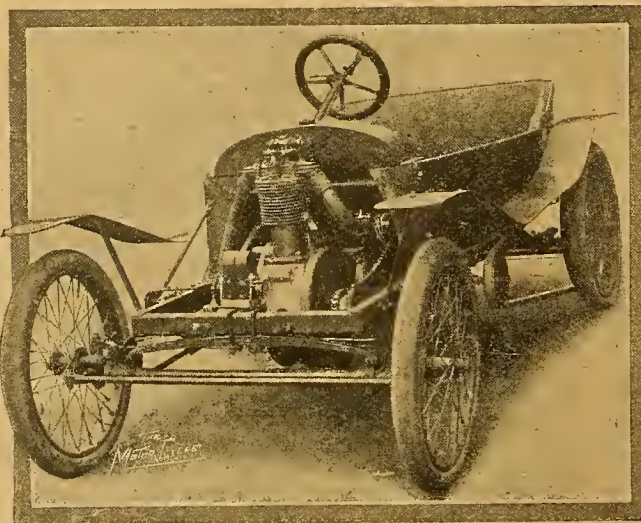


Rear springing, belt drive, and brakes on the new Chota.

Both brakes are of the shoe type, acting on the belt rims and placed one above the other.

The machine is particularly noticeable for its simple and stout construction; it is in every way a true cycle car, but considerably stronger than many at present on the road. Thus it should meet the requirements of those who require a light but substantial cycle car.

The engine is extremely flexible and runs very smoothly, its most noticeable feature being that it will stand with comfort a very high gear. With a top gear of approximately  $3\frac{1}{2}$  to 1, we are assured that it will easily go from Coventry to London and back with two up and without changing gear, which speaks well for its power.



The power plant. The single-cylinder engine measures 89 x 120 mm., and has overhead valves.



## The Taxation of Cycle Cars.

FROM the number of enquiries we receive on the above subject it appears that many people do not realise that all four-wheeled cycle cars are taxed as cars, and that the taxation is based on the R.A.C. horse-power formula  $\left(\frac{D^2N}{2.5}\right)$ ; that is to say, on the bore of the cylinder or cylinders only.

Below we give the taxes most likely to affect owners of cycle cars:

Single-cylinder engines up  
to 102 mm. bore ... £2 2 0 tax  
Over 102 mm. and up to  
138 mm. bore ... £3 3 0 tax

With single-cylinder engines, there will not be many who will have to pay more than £2 2s., but in the two-cylinder class all users of 8 h.p. engines will have to pay £3 3s., as will be seen below:

Twin-cylinders up to 72  
mm. bore ... £2 2 0 tax  
Over 72 mm. and up to  
98 mm. bore ... £3 3 0 tax

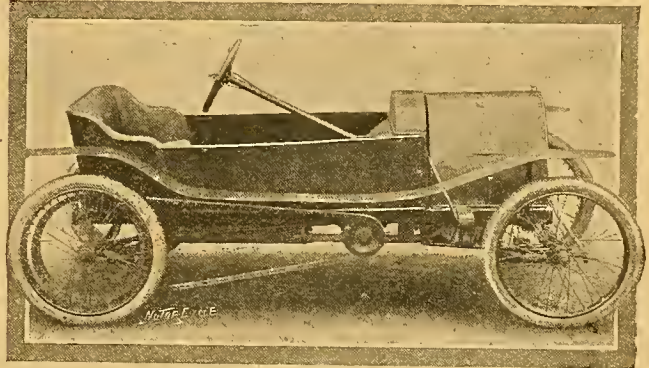
Four-cylinder engines start at £3 3s., and few cycle cars would exceed this tax, as to keep inside the 1,100 c.c. capacity allowed for cycle cars, the bore would seldom reach 68 mm.

Four-cylinders up to 68 mm. ... £3 3 0  
Over 68 and up to 80 mm. ... £4 4 0

Then there is the registration fee, which is £1, the same as for cars.

As regards three-wheeled runabouts, if the weight be less than 3 cwt. a 5s. registration fee will suffice. The annual tax for three-wheeled machines, no matter how much they weigh, is £1.

We publish this list for the benefit of those who are unaware of the facts, but, although it seems unfair to tax a light cycle car upon the same basis as a big car, those who can afford a cycle car will scarcely be deterred by the extra tax.



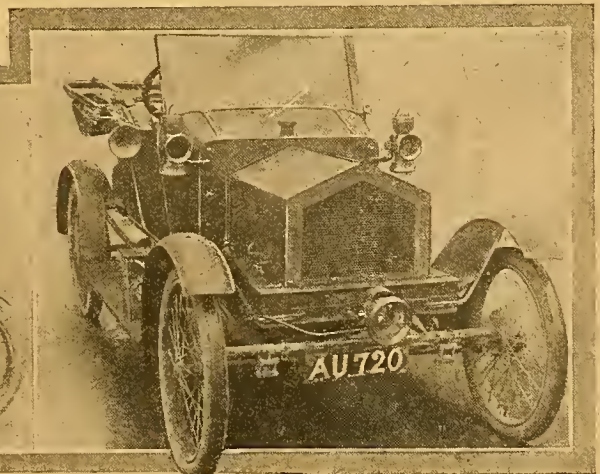
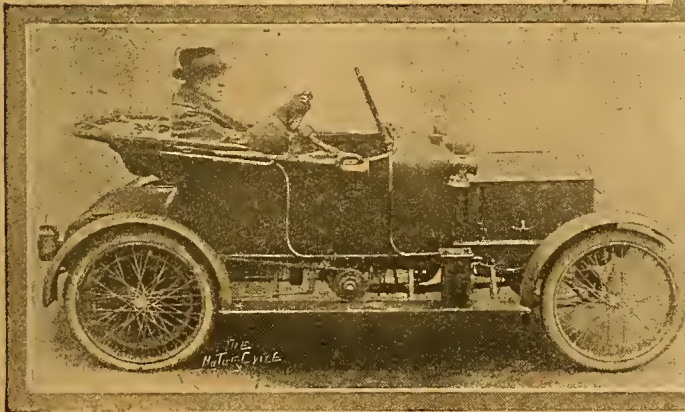
Broadside view of the single-cylinder Chota, described on previous page.

## Belt Drive and no Differential.

AN amateur-built runabout which has been driven nearly 10,000 miles this year is the subject of our illustration. The designer, who is seen at the wheel, is Mr. Noel Crane, of Nottingham. In sending us the photographs, he mentions that the machine still has the original tyres (700 x 65 mm. Michelins). This long life the owner largely attributes to the belt drive, which he considers splendid for a light machine, provided it is arranged in a proper manner, which only road experience will prove. Mr. Crane has had no trouble on the road through breakdown; also he finds his vehicle steady to steer at all speeds, whilst in wet weather skidding is almost unknown. One reason for this may be attributed to the fact that the

frame is underslung and the centre of gravity is kept low.

The engine is an 8 h.p. J.A.P. twin, and has splendid pulling qualities, enabling the little car to climb all ordinary hills on top gear. The maximum speed is about 40 m.p.h. The Whittle belts have stood the test splendidly, we are told. The consumption is given as fifty miles to the gallon. The designer does not consider there is the slightest need for a differential; at any rate, he has not suffered from the absence of one on his machine, nor has abnormal tyre wear suggested its desirability.



An 8 h.p. runabout built by a Nottingham reader to his own designs.



# QUESTIONS and REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

## Oil Leakage.

**C.** I have a 1912  $3\frac{1}{2}$  h.p. two-speed B.S.A. Would you tell me if there is any way to prevent oil being blown out through pulley (crank case release)? After riding about five miles at a moderate speed the side of my boot is bespattered. Drip-feed lubrication is fitted. —J.M.B.

The best way to obviate the trouble is not to lubricate too freely. Another thing you can do is to fit some sort of guard. The same difficulty is experienced with all machines having hollow crankshafts. There should be a sort of baffle or guard in front of the outlet so that the oil is not blown straight out.

## Fixing a Sidecar.

**C.** (1.) Is it absolutely necessary for the wheel of a sidecar to be the same size as that on the motor cycle? (2.) What is the best method of fitting a sidecar? I assisted a friend with one, and we did it by using straight edges on the rim of the sidecar wheel, and on that of the motor cycle back wheel, then measuring the distances between the ends of the two.—T.E.

(1.) It is not necessary, though desirable, for the sidecar wheel to be the same size as that of the motor bicycle. (2.) The method referred to of fixing a sidecar is quite satisfactory.

## Cut-out Regulations.

**C.** On page 1159 of *The Motor Cycle*, I notice in the note on cut-outs that "any apparatus or device which will allow the exhaust gas to escape into the atmosphere without first passing through an expansion chamber" will not be allowed. My Rudge is fitted with Chanticleer exhaust whistle. (1.) Would you be good enough to tell me if I shall have to have this removed? (2.) Could it be fitted the other side the exhaust box—by a law-abiding citizen? (3.) Is this now law or just a proposal.—W.B.V.

(1.) We think you may safely take it that the Local Government Board will not count an exhaust whistle as an offence against the regulation. (2.) Whether the whistle would be efficient on the far side of the exhaust box depends upon the design of the latter. (3.) The regulation referred to comes into force on the 1st March.

## Low Gear Climbing.

**?** (1.) My machine is a  $2\frac{1}{2}$  h.p. Hobart, 1912, three-speed and clutch. After mounting a hill on low gear (which the machine does splendidly), I find at times that the engine will not "pick up" again on the high, or even the second speed. Is this due solely to overheating, as when the engine cools, matters are quite right again? (2.) Although the compression seems fairly good when the engine is running, I can feel a leakage from under the compression tap washer, also the sparking plug. How can I bed the washers better? Both are screwed up as tightly as possible. Do you think it necessary for them to be absolutely air tight or gas tight? (3.) Should oil be drained from the crank case frequently?—S.B.

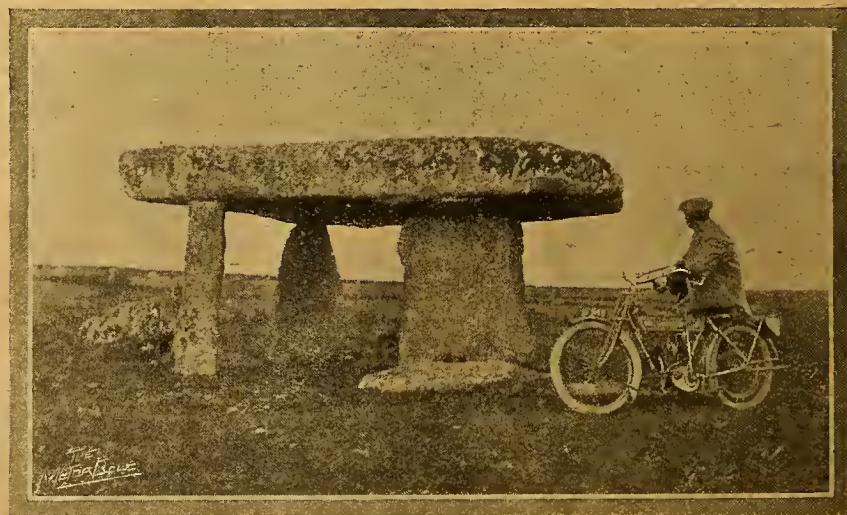
(1.) The symptoms certainly seem like overheating, which would be due to running continuously on low gear. Use plenty of oil. (2.) You had better fit a new washer to the compression tap and sparking plug, and see that the surfaces of the joints are clean and true. It is necessary for all joints to be absolutely gas tight. (3.) Yes, oil should be drained from the crank case every three hundred

miles, and the crank case well washed out with paraffin after which inject two pumps of oil.

## Maintaining Compression.

**?** (1.) I have a  $2\frac{3}{4}$  h.p. a.o.i.v. and cannot get compression after cleaning deposit of cylinder and fitting new piston rings which fit dead true. Provided that cylinder walls are not worn, what is the most likely cause of loss of compression? (2.) Before disturbing the cylinder compression was perfect. Am I right in concluding that slight eccentric wear in cylinder is met by the same wear in piston rings, and therefore preserving compression? (3.) What is the cause of eccentric wear in cylinder?—M.I.J.

(1.) You do not say how long the machine has been running since you cleaned out the cylinder. Probably after about a couple of hundred miles the compression will return and the machine will run as well as ever. Probably the loss of compression is due to the new rings requiring to be run in, and also to the fact that you have disturbed several joints which had eventually become sealed up with burnt oil. (2.) We think you are correct. (3.) Eccentric wear is caused by the weight and side thrust of the piston.



## ANCIENT AND MODERN.

Our photograph shows a two-speed lightweight Enfield beside the Lanyon Cromlech. There are three or four of these cromlechs in Cornwall, and they are supposed to represent the headstone or monument of a chieftain during the Druidical period.



## Licences.

**Q** I bought a motor cycle last October, and obtained my driving licence and transferred the number, but I did not take the carriage tax licence. What I want to know is, am I forced to take this out for this year, provided I do not ride the machine, which I have not done yet, as I have been altering and repairing it? My neighbours tell me the police have been enquiring about the machine, but they have not asked me about it yet.—W.H.

You are not liable for the local taxation licence—10s., available until December 31st—if you have not used the machine on any occasion at all. Of course, the fact that you have registered the machine and bought a driving licence naturally gave the authorities the information that you were keeping a machine, which, for all they knew, you had been using.

## Electric Lamps.

**Q** Could you recommend a really first-class electric head lamp for  $3\frac{1}{2}$  h.p. 1912 Triumph? I have at present Lucas's best lamp. Would the electric lamp be as powerful? A really good lamp is essential here (Co. Tipperary), as the road is regarded as a good sleeping place for donkeys, etc.! I should want a lamp capable of burning for one month without recharging, but actually burning about twenty-four hours a month.—ELECTRIC LIGHT.

The C.A.V. and Hunt electric lamps are very good, but would not be quite so powerful as a good acetylene lamp. Full particulars can be obtained from Messrs. C. A. Vandervell and Co., Ltd., Warple Way, Acton Vale, W., and A. H. Hunt, 115, Cannon Street, E.C. We should recommend at least a 20 amp. accumulator. It would be advisable to have two.

## Petrol Consumption.

**Q** I have ordered a T.T. roadster James for 1913 with the racing universal model B. and B. carburetter, with variable jet and variable bottom air-shutter. As petrol may reach a prohibitive price next year, I am anxious to get a very economical carburetter. The machine will be run with a 4 to 1 gear (round London mostly). (1.) I am thinking of ordering the new Binks two-lever carburetter in addition to the variable B. and B. Do you consider that the former should give the limit in low consumption, and, if not, what make can you advise? It seems to me that a variable jet type such as the new B. and B., if properly handled, should be fully equal in this respect to a two-jet instrument which has fixed jets. On my 1912 T.T. Bradbury I get 95-100 m.p.g., averaging 28 m.p.h. On the other hand, I know a man with a 600 c.c. single-cylinder Precision motor and 4 to 1 gear who gets 120 m.p.g. and reaches 30 m.p.h. on the pilot jet with the standard touring one-lever Binks. I also should like to get 120 (I have got 120-140 m.p.g. with a 32 jet standard 1910 Triumph carburetter, averaging 22 an hour). What do you recommend? I want to average 25 an hour. Easy starting, of course, is a *sine qua non*. (2) Which is the better for low consumption in your opinion (round London)—a high gear, say  $3\frac{1}{2}$  or 4 to 1, or a lowish one of say  $4\frac{1}{2}$  or  $4\frac{3}{4}$  on the make in question? Different men tell me exactly opposite things, and the B. and B. people recommend a very high gear for the purpose. (Expert driving allowed of course in either case.) Weight of rider, 10 st. 10 lbs.—C.P.

We think you would get very good results from the B. and B. Universal or the Binks two-lever carburetter. Petrol

consumption is mysterious on some motor bicycles. Some machines will run economically and others do not, and if any attempt be made to make them run economically they sometimes lose a great deal in efficiency. Experiments with the two should be interesting, and we should be glad to hear the result. If you are running in London, for low consumption we should say that a  $4\frac{1}{2}$  to 1 gear would be better. If by round London you mean the country roads surrounding London you should gear just as high as it is comfortable to ride the machine.

## EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"R.W.M." (Ashton).—T.T. Rudge and Singer, also Binks carburetter.

"H.W." (Co. Armagh).—Coronet and Farrar's sidecars with  $3\frac{1}{2}$  h.p. machine.

"Codfish" (Cromer).—Morgan runabout, reliability, consumption, and average speeds on long runs.

"V.M.D." (Chester).—Martin-Jap and Multi-Rudge, cost of upkeep, particularly tyres and petrol.

"W.D." (Birmingham).—G.W.K. petrol consumption, speed, hill-climbing, and tyre wear.

"H.R.J." (Kimberley).—Scott, its reliability, chain and gear wear, and petrol consumption?

"G.M." (Greenhithe).—4 h.p. twin Hobart for sidecar work; as regards wear and reliability.

"A.A." (Nelson).—Binks and Senspray carburetters on  $2\frac{1}{2}$  h.p. Enfield or similar lightweight. Also the use of paraffin instead of petrol with Senspray.

"U.W.M." (Dublin).—Any type of variable gear fitted to a model G Douglas.

"G.W." (Dublin).—5 h.p. four-cylinder two-speed F.N.,  $4\frac{1}{2}$  h.p. three-speed Excelsior, and  $3\frac{1}{2}$  h.p. two-speed belt drive Bradbury for sidecar work. Experiences as regards petrol consumption and hill-climbing.

"B.M.V." (Crouch Hill).—Exhaust whistle for 1912 Indian with long exhaust pipe.

"M.B." (Surrey).—Reliability of "Auxiliary motor set" made by City Motor Works, Gloucester.

"A.J." (Rotherham).— $3\frac{1}{2}$  h.p. Bradbury, engine-shaft two-speed gear with sidecar, reliability, hill-climbing, and consumption.

"Lieut. R." (Bouillon).—(1.) 5-6 h.p. F.N. two-speed and  $3\frac{1}{2}$  or 6 h.p. N.S.U. two-speed for use in the Ardennes, occasionally with a light sidecar. (2.) Best non-skid (a) steel-studded tyre or (b) Kempshall.

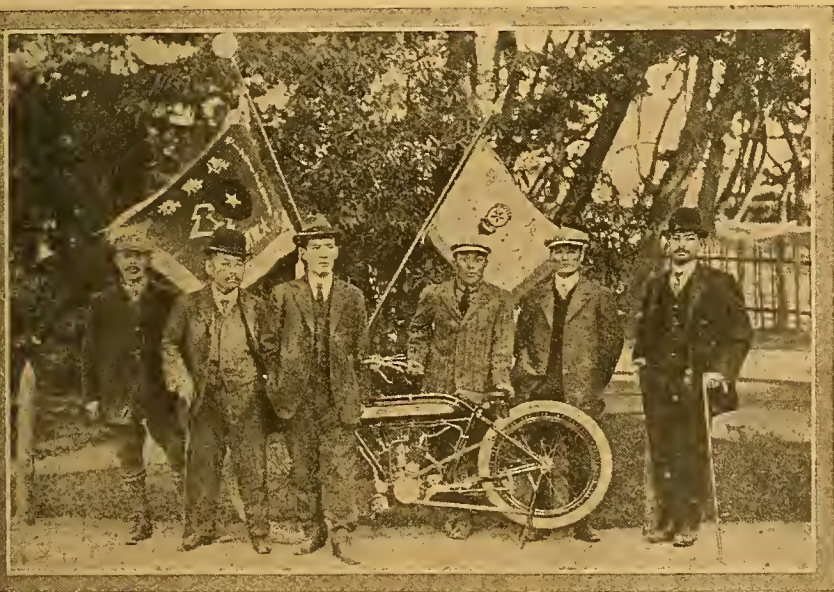
"C.W.C." (Surbiton).—Cowe speedometer, accuracy of registering.

"P.A.W." (Chatham).—Private owners' experiences with Matchless, Williamson, and Veloce. Binks two-jet carburetter and electric lighting on motor cycles.

"H.W.C." (Brockley).—Levis. Consumption and reliability.

## THE MOTOR CYCLE IN JAPAN.

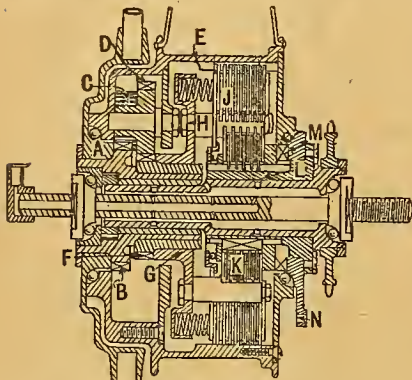
Motor cycle racing is being taken up with enthusiasm in Japan. A meeting was held on the 10th ult. at the Naruo Race Course. A  $2\frac{1}{2}$  h.p. twin Humber, ridden by Shigesaburo Emi, took part in eight races, winning seven and obtaining second place in the eighth. In addition, the rider secured the Championship of Japan; the speed in this contest was approximately 56 miles per hour.





**A Two-speed Gear.**

This gear is stated in the specification to be applicable as an engine-shaft, counter-shaft, or hub gear, the latter being the one illustrated. The belt pulley carrier A is formed with a gear wheel B engaging planet pinions C, which in turn gear with pinions D mounted on fixed spindles in the hub shell E. The pinions D engage a further pinion F on a sleeve G, which is formed with a carrier or abutment H. This carrier is provided



with projecting drivers engaging two sets of clutch plates J K, the former for clutching to the hub shell and the latter for securing it to a fixed member L, which is anchored to the frame of the machine. Operation of the clutches is effected by means of face cams M provided with an operating lever N. When the clutch plates K are in engagement the carrier H and pinion G are held stationary, and the drive is transmitted through the gear train B C D F. When the clutch plates J are in engagement the drive is direct, the mechanism running solid, and when both clutches J and

**Winter Hill Climb.**

Continental tyres were fitted to L. Mogridge's  $3\frac{1}{2}$  h.p. Mead when he won a gold medal and the "Percy Butler" challenge shield in the Liverpool A.C.C. hill-climb on November 30th.

**Change of Address.**

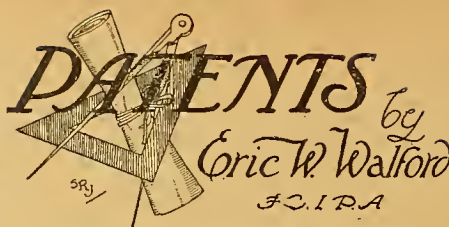
Lodge Bros. and Co. are moving from 14, New Street, Birmingham, to larger and more convenient premises immediately adjoining their works. On and after the 24th inst. all communications should be sent to Lodge Bros. and Co., Wrentham Street, Birmingham.

**Heavier Tyres for Special Work.**

The Kempshall Tyre Co. inform us that the Triumph Cycle Co. have given their depots instructions to recommend Kempshalls to any rider wishing to order a stronger or heavier tyre than that which they fit as standard pattern. This decision has naturally caused great satisfaction to the makers of the Kempshall.

**Neat Sidecar Fittings.**

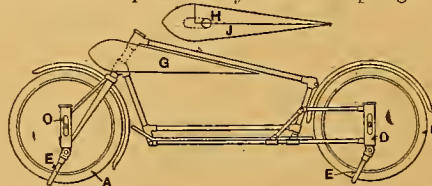
The new design of quickly detachable sidecar clips illustrated on page 1474 in our issue of the 5th inst., are manufactured by the Carroll Sidecar Co., Ltd., Conybere Street, Birmingham, which company hold the patent for the clips. It is claimed for them that they are the most rigid and the most easily detached clips on the market.



K are in the neutral position a free engine is provided.—A. E. Hooke, No. 25,535, 1911.

**Wooler's Anti-vibratory Frame.**

The frame itself is on original lines as can be seen from the illustration, and both the front and rear wheels A and B are mounted in spring housings C and D, the former carried by the steering fork and the latter built into the rear stays. Supports or stands E, whereby the machine may be held vertical when stationary, are pivoted to the housing C and D, and are retained in position by internal springs



actuating a detent (not shown). The tank G is of a novel type, being made in two parts, H and J, which can be assembled around the head of the machine and secured together. The shape of the tank and the fact that a large part of it projects forward of the head of the machine enables a tank of large capacity to be used without cramping the space available for the engine, etc.—J. Wooler, No. 26,152, 1911.

**SPARKLETS****Cycle Car Trial Runs.**

Stewart and Arden, Ltd., 18, Woodstock Street, Bond Street, W., have acquired the sole London and district agency for the Morris-Oxford light car. Trial runs can be given the first week in January next.

**Phoenix Sidecars.**

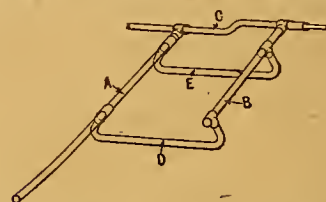
Excellent business in sidecars is reported from the sidecar depot of Phoenix Motors, Ltd., 736, Holloway Road, London, N., where a full range of different types of chassis and bodies is on view in their showrooms.

**A Comfortable Saddle.**

Mr. Gibbon, who recently completed the first A.C.U. official trial with an Alldays motor cycle and sidecar, informs us that he used a Leatheries saddle, and states that during the 1,076 miles covered he never suffered from saddle soreness. The type of saddle used was the Empire de Luxe, made by Messrs. Leatheries, Ltd., Birmingham.

**Sidecar Frame.**

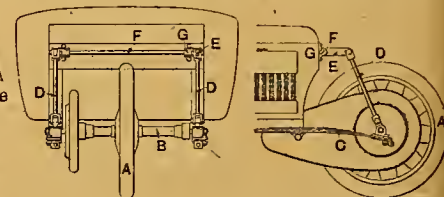
In order to provide a low body position while retaining the usual main axle tube, the frame comprises two longitudinal members AB connected at the rear by



the cranked axle tube C. The cross tubes DE supporting the body are U shaped, affording a low position.—E. Farrer, No. 5,070, 1912

**Rear Wheel Mounting.**

The rear driving wheel A of a tricar is mounted upon an axle B carried by the ends of a pair of laminated springs C. To maintain the wheel A in its correct plane a pair of rods D are provided, and



these rods are connected at their upper ends to cranks E, on a shaft F, free to rotate in bearings on the body G. The springs C are, therefore, free to work in a vertical direction, whilst twisting is prevented.—Alldays and Onions Pneumatic Engineering Co., Ltd., and C. E. Simms, No. 25,189, 1911.

**Liverpool Repair Depot.**

A special department for the repair and overhauling of all makes of motor cycles has been opened by the Mead Cycle Co., 11-13, Paradise Street, Liverpool. H. A. Brayshaw, recently in charge of the motor cycle special competition department of Humber, Ltd., has been engaged to supervise overhauling, repairing, and testing of machines.

**Catalogues Received.**

An excellently arranged and printed catalogue of the 1913 Rover motor cycles is just to hand. It contains among other items an account of the ascent of Snowdon by Mr. Spencer on a  $3\frac{1}{2}$  h.p. three-speed Rover, a list of Rover successes accomplished by private owners and the firm's own trade riders. There are also good illustrations and specifications in detail of the  $3\frac{1}{2}$  h.p. Rover motor bicycle and the new sidecar with brake on sidecar wheel. This catalogue can be obtained from the Rover Co., Ltd., Coventry.

The catalogue of Martin motor cycles, handled by Cars and Motor Sundries, Ltd., 175, Shaftesbury Avenue, W., contains particulars and illustrations of the following:  $3\frac{1}{2}$  h.p. standard roadster, 85 x 85 mm.; 4 h.p. standard T.T., 90 x 77½ mm.; 4½ h.p. Brooklands T.T., with same sized engine; a twin 6 h.p., 76 x 85 mm.; and an 8 h.p. twin. The catalogue also contains a list of Harry Martin's records.



"The Pullman Car  
of Motor-cycles."

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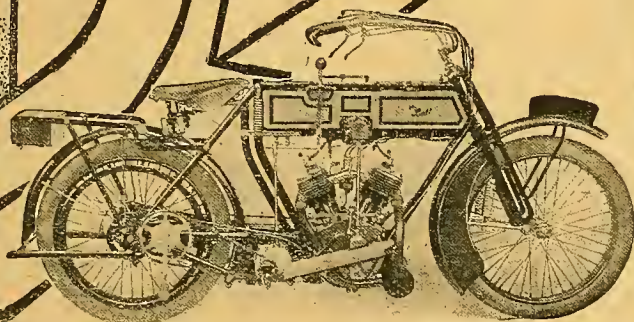
## The Machine of the Year.

1912 saw the introduction of the BAT Model No. 3, and a comparison with any machine shown at Olympia must have convinced any rider that nothing has yet been produced to excel it as the

### IDEAL SIDECAR MOTOR CYCLE.

Spring Frame : Two-speed Gear :  
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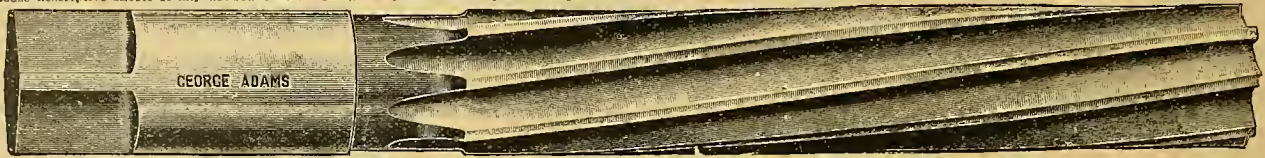
In answering these advertisements it is desirable to mention "The Motor Cycle."



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  $23\frac{3}{4}$   $23\frac{7}{8}$   $24$   $24\frac{1}{8}$   $24\frac{1}{4}$   $24\frac{3}{8}$   $24\frac{1}{2}$   $24\frac{5}{8}$   $24\frac{3}{4}$   $24\frac{7}{8}$   $25$   $25\frac{1}{8}$   $25\frac{1}{4}$   $25\frac{3}{8}$   $25\frac{1}{2}$   $25\frac{5}{8}$   $25\frac{3}{4}$   $25\frac{7}{8}$   $26$   $26\frac{1}{8}$   $26\frac{1}{4}$   $26\frac{3}{8}$   $26\frac{1}{2}$   $26\frac{5}{8}$   $26\frac{3}{4}$   $26\frac{7}{8}$   $27$   $27\frac{1}{8}$   $27\frac{1}{4}$   $27\frac{3}{8}$   $27\frac{1}{2}$   $27\frac{5}{8}$   $27\frac{3}{4}$   $27\frac{7}{8}$   $28$   $28\frac{1}{8}$   $28\frac{1}{4}$   $28\frac{3}{8}$   $28\frac{1}{2}$   $28\frac{5}{8}$   $28\frac{3}{4}$   $28\frac{7}{8}$   $29$   $29\frac{1}{8}$   $29\frac{1}{4}$   $29\frac{3}{8}$   $29\frac{1}{2}$   $29\frac{5}{8}$   $29\frac{3}{4}$   $29\frac{7}{8}$   $30$   $30\frac{1}{8}$   $30\frac{1}{4}$   $30\frac{3}{8}$   $30\frac{1}{2}$   $30\frac{5}{8}$   $30\frac{3}{4}$   $30\frac{7}{8}$   $31$   $31\frac{1}{8}$   $31\frac{1}{4}$   $31\frac{3}{8}$   $31\frac{1}{2}$   $31\frac{5}{8}$   $31\frac{3}{4}$   $31\frac{7}{8}$   $32$   $32\frac{1}{8}$   $32\frac{1}{4}$   $32\frac{3}{8}$   $32\frac{1}{2}$   $32\frac{5}{8}$   $32\frac{3}{4}$   $32\frac{7}{8}$   $33$   $33\frac{1}{8}$   $33\frac{1}{4}$   $33\frac{3}{8}$   $33\frac{1}{2}$   $33\frac{5}{8}$   $33\frac{3}{4}$   $33\frac{7}{8}$   $34$   $34\frac{1}{8}$   $34\frac{1}{4}$   $34\frac{3}{8}$   $34\frac{1}{2}$   $34\frac{5}{8}$   $34\frac{3}{4}$   $34\frac{7}{8}$   $35$   $35\frac{1}{8}$   $35\frac{1}{4}$   $35\frac{3}{8}$   $35\frac{1}{2}$   $35\frac{5}{8}$   $35\frac{3}{4}$   $35\frac{7}{8}$   $36$   $36\frac{1}{8}$   $36\frac{1}{4}$   $36\frac{3}{8}$   $36\frac{1}{2}$   $36\frac{5}{8}$   $36\frac{3}{4}$   $36\frac{7}{8}$   $37$   $37\frac{1}{8}$   $37\frac{1}{4}$   $37\frac{3}{8}$   $37\frac{1}{2}$   $37\frac{5}{8}$   $37\frac{3}{4}$   $37\frac{7}{8}$   $38$   $38\frac{1}{8}$   $38\frac{1}{4}$   $38\frac{3}{8}$   $38\frac{1}{2}$   $38\frac{5}{8}$   $38\frac{3}{4}$   $38\frac{7}{8}$   $39$   $39\frac{1}{8}$   $39\frac{1}{4}$   $39\frac{3}{8}$   $39\frac{1}{2}$   $39\frac{5}{8}$   $39\frac{3}{4}$   $39\frac{7}{8}$   $40$   $40\frac{1}{8}$   $40\frac{1}{4}$   $40\frac{3}{8}$   $40\frac{1}{2}$   $40\frac{5}{8}$   $40\frac{3}{4}$   $40\frac{7}{8}$   $41$   $41\frac{1}{8}$   $41\frac{1}{4}$   $41\frac{3}{8}$   $41\frac{1}{2}$   $41\frac{5}{8}$   $41\frac{3}{4}$   $41\frac{7}{8}$   $42$   $42\frac{1}{8}$   $42\frac{1}{4}$   $42\frac{3}{8}$   $42\frac{1}{2}$   $42\frac{5}{8}$   $42\frac{3}{4}$   $42\frac{7}{8}$   $43$   $43\frac{1}{8}$   $43\frac{1}{4}$   $43\frac{3}{8}$   $43\frac{1}{2}$   $43\frac{5}{8}$   $43\frac{3}{4}$   $43\frac{7}{8}$   $44$   $44\frac{1}{8}$   $44\frac{1}{4}$   $44\frac{3}{8}$   $44\frac{1}{2}$   $44\frac{5}{8}$   $44\frac{3}{4}$   $44\frac{7}{8}$   $45$   $45\frac{1}{8}$   $45\frac{1}{4}$   $45\frac{3}{8}$   $45\frac{1}{2}$   $45\frac{5}{8}$   $45\frac{3}{4}$   $45\frac{7}{8}$   $46$   $46\frac{1}{8}$   $46\frac{1}{4}$   $46\frac{3}{8}$   $46\frac{1}{2}$   $46\frac{5}{8}$   $46\frac{3}{4}$   $46\frac{7}{8}$   $47$   $47\frac{1}{8}$   $47\frac{1}{4}$   $47\frac{3}{8}$   $47\frac{1}{2}$   $47\frac{5}{8}$   $47\frac{3}{4}$   $47\frac{7}{8}$   $48$   $48\frac{1}{8}$   $48\frac{1}{4}$   $48\frac{3}{8}$   $48\frac{1}{2}$   $48\frac{5}{8}$   $48\frac{3}{4}$   $48\frac{7}{8}$   $49$   $49\frac{1}{8}$   $49\frac{1}{4}$   $49\frac{3}{8}$   $49\frac{1}{2}$   $49\frac{5}{8}$   $49\frac{3}{4}$   $49\frac{7}{8}$   $50$   $50\frac{1}{8}$   $50\frac{1}{4}$   $50\frac{3}{8}$   $50\frac{1}{2}$   $50\frac{5}{8}$   $50\frac{3}{4}$   $50\frac{7}{8}$   $51$   $51\frac{1}{8}$   $51\frac{1}{4}$   $51\frac{3}{8}$   $51\frac{1}{2}$   $51\frac{5}{8}$   $51\frac{3}{4}$   $51\frac{7}{8}$   $52$   $52\frac{1}{8}$   $52\frac{1}{4}$   $52\frac{3}{8}$   $52\frac{1}{2}$   $52\frac{5}{8}$   $52\frac{3}{4}$   $52\frac{7}{8}$   $53$   $53\frac{1}{8}$   $53\frac{1}{4}$   $53\frac{3}{8}$   $53\frac{1}{2}$   $53\frac{5}{8}$   $53\frac{3}{4}$   $53\frac{7}{8}$   $54$   $54\frac{1}{8}$   $54\frac{1}{4}$   $54\frac{3}{8}$   $54\frac{1}{2}$   $54\frac{5}{8}$   $54\frac{3}{4}$   $54\frac{7}{8}$   $55$   $55\frac{1}{8}$   $55\frac{1}{4}$   $55\frac{3}{8}$   $55\frac{1}{2}$   $55\frac{5}{8}$   $55\frac{3}{4}$   $55\frac{7}{8}$   $56$   $56\frac{1}{8}$   $56\frac{1}{4}$   $56\frac{3}{8}$   $56\frac{1}{2}$   $56\frac{5}{8}$   $56\frac{3}{4}$   $56\frac{7}{8}$   $57$   $57\frac{1}{8}$   $57\frac{1}{4}$   $57\frac{3}{8}$   $57\frac{1}{2}$   $57\frac{5}{8}$   $57\frac{3}{4}$   $57\frac{7}{8}$   $58$   $58\frac{1}{8}$   $58\frac{1}{4}$   $58\frac{3}{8}$   $58\frac{1}{2}$   $58\frac{5}{8}$   $58\frac{3}{4}$   $58\frac{7}{8}$   $59$   $59\frac{1}{8}$   $59\frac{1}{4}$   $59\frac{3}{8}$   $59\frac{1}{2}$   $59\frac{5}{8}$   $59\frac{3}{4}$   $59\frac{7}{8}$   $60$   $60\frac{1}{8}$   $60\frac{1}{4}$   $60\frac{3}{8}$   $60\frac{1}{2}$   $60\frac{5}{8}$   $60\frac{3}{4}$   $60\frac{7}{8}$   $61$   $61\frac{1}{8}$   $61\frac{1}{4}$   $61\frac{3}{8}$   $61\frac{1}{2}$   $61\frac{5}{8}$   $61\frac{3}{4}$   $61\frac{7}{8}$   $62$   $62\frac{1}{8}$   $62\frac{1}{4}$   $62\frac{3}{8}$   $62\frac{1}{2}$   $62\frac{5}{8}$   $62\frac{3}{4}$   $62\frac{7}{8}$   $63$   $63\frac{1}{8}$   $63\frac{1}{4}$   $63\frac{3}{8}$   $63\frac{1}{2}$   $63\frac{5}{8}$   $63\frac{3}{4}$   $63\frac{7}{8}$   $64$   $64\frac{1}{8}$   $64\frac{1}{4}$   $64\frac{3}{8}$   $64\frac{1}{2}$   $64\frac{5}{8}$   $64\frac{3}{4}$   $64\frac{7}{8}$   $65$   $65\frac{1}{8}$   $65\frac{1}{4}$   $65\frac{3}{8}$   $65\frac{1}{2}$   $65\frac{5}{8}$   $65\frac{3}{4}$   $65\frac{7}{8}$   $66$   $66\frac{1}{8}$   $66\frac{1}{4}$   $66\frac{3}{8}$   $66\frac{1}{2}$   $66\frac{5}{8}$   $66\frac{3}{4}$   $66\frac{7}{8}$   $67$   $67\frac{1}{8}$   $67\frac{1}{4}$   $67\frac{3}{8}$   $67\frac{1}{2}$   $67\frac{5}{8}$   $67\frac{3}{4}$   $67\frac{7}{8}$   $68$   $68\frac{1}{8}$   $68\frac{1}{4}$   $68\frac{3}{8}$   $68\frac{1}{2}$   $68\frac{5}{8}$   $68\frac{3}{4}$   $68\frac{7}{8}$   $69$   $69\frac{1}{8}$   $69\frac{1}{4}$   $69\frac{3}{8}$   $69\frac{1}{2}$   $69\frac{5}{8}$   $69\frac{3}{4}$   $69\frac{7}{8}$   $70$   $70\frac{1}{8}$   $70\frac{1}{4}$   $70\frac{3}{8}$   $70\frac{1}{2}$   $70\frac{5}{8}$   $70\frac{3}{4}$   $70\frac{7}{8}$   $71$   $71\frac{1}{8}$   $71\frac{1}{4}$   $71\frac{3}{8}$   $71\frac{1}{2}$   $71\frac{5}{8}$   $71\frac{3}{4}$   $71\frac{7}{8}$   $72$   $72\frac{1}{8}$   $72\frac{1}{4}$   $72\frac{3}{8}$   $72\frac{1}{2}$   $72\frac{5}{8}$   $72\frac{3}{4}$   $72\frac{7}{8}$   $73$   $73\frac{1}{8}$   $73\frac{1}{4}$   $73\frac{3}{8}$   $73\frac{1}{2}$   $73\frac{5}{8}$   $73\frac{3}{4}$   $73\frac{7}{8}$   $74$   $74\frac{1}{8}$   $74\frac{1}{4}$   $74\frac{3}{8}$   $74\frac{1}{2}$   $74\frac{5}{8}$   $74\frac{3}{4}$   $74\frac{7}{8}$   $75$   $75\frac{1}{8}$   $75\frac{1}{4}$   $75\frac{3}{8}$   $75\frac{1}{2}$   $75\frac{5}{8}$   $75\frac{3}{4}$   $75\frac{7}{8}$   $76$   $76\frac{1}{8}$   $76\frac{1}{4}$   $76\frac{3}{8}$   $76\frac{1}{2}$   $76\frac{5}{8}$   $76\frac{3}{4}$   $76\frac{7}{8}$   $77$   $77\frac{1}{8}$   $77\frac{1}{4}$   $77\frac{3}{8}$   $77\frac{1}{2}$   $77\frac{5}{8}$   $77\frac{3}{4}$   $77\frac{7}{8}$   $78$   $78\frac{1}{8}$   $78\frac{1}{4}$   $78\frac{3}{8}$   $78\frac{1}{2}$   $78\frac{5}{8}$   $78\frac{3}{4}$   $78\frac{7}{8}$   $79$   $79\frac{1}{8}$   $79\frac{1}{4}$   $79\frac{3}{8}$   $79\frac{1}{2}$   $79\frac{5}{8}$   $79\frac{3}{4}$   $79\frac{7}{8}$   $80$   $80\frac{1}{8}$   $80\frac{1}{4}$   $80\frac{3}{8}$   $80\frac{1}{2}$   $80\frac{5}{8}$   $80\frac{3}{4}$   $80\frac{7}{8}$   $81$   $81\frac{1}{8}$   $81\frac{1}{4}$   $81\frac{3}{8}$   $81\frac{1}{2}$   $81\frac{5}{8}$   $81\frac{3}{4}$   $81\frac{7}{8}$   $82$   $82\frac{1}{8}$   $82\frac{1}{4}$   $82\frac{3}{8}$   $82\frac{1}{2}$   $82\frac{5}{8}$   $82\frac{3}{4}$   $82\frac{7}{8}$   $83$   $83\frac{1}{8}$   $83\frac{1}{4}$   $83\frac{3}{8}$   $83\frac{1}{2}$   $83\frac{5}{8}$   $83\frac{3}{4}$   $83\frac{7}{8}$   $84$   $84\frac{1}{8}$   $84\frac{1}{4}$   $84\frac{3}{8}$   $84\frac{1}{2}$   $84\frac{5}{8}$   $84\frac{3}{4}$   $84\frac{7}{8}$   $85$   $85\frac{1}{8}$   $85\frac{1}{4}$   $85\frac{3}{8}$   $85\frac{1}{2}$   $85\frac{5}{8}$   $85\frac{3}{4}$   $85\frac{7}{8}$   $86$   $86\frac{1}{8}$   $86\frac{1}{4}$   $86\frac{3}{8}$   $86\frac{1}{2}$   $86\frac{5}{8}$   $86\frac{3}{4}$   $86\frac{7}{8}$   $87$   $87\frac{1}{8}$   $87\frac{1}{4}$   $87\frac{3}{8}$   $87\frac{1}{2}$   $87\frac{5}{8}$   $87\frac{3}{4}$   $87\frac{7}{8}$   $88$   $88\frac{1}{8}$   $88\frac{1}{4}$   $88\frac{3}{8}$   $88\frac{1}{2}$   $88\frac{5}{8}$   $88\frac{3}{4}$   $88\frac{7}{8}$   $89$   $89\frac{1}{8}$   $89\frac{1}{4}$   $89\frac{3}{8}$   $89\frac{1}{2}$   $89\frac{5}{8}$   $89\frac{3}{4}$   $89\frac{7}{8}$   $90$   $90\frac{1}{8}$   $90\frac{1}{4}$   $90\frac{3}{8}$   $90\frac{1}{2}$   $90\frac{5}{8}$   $90\frac{3}{4}$   $90\frac{7}{8}$   $91$   $91\frac{1}{8}$   $91\frac{1}{4}$   $91\frac{3}{8}$   $91\frac{1}{2}$   $91\frac{5}{8}$   $91\frac{3}{4}$   $91\frac{7}{8}$   $92$   $92\frac{1}{8}$   $92\frac{1}{4}$   $92\frac{3}{8}$   $92\frac{1}{2}$   $92\frac{5}{8}$   $92\frac{3}{4}$   $92\frac{7}{8}$   $93$   $93\frac{1}{8}$   $93\frac{1}{4}$   $93\frac{3}{8}$   $93\frac{1}{2}$   $93\frac{5}{8}$   $93\frac{3}{4}$   $93\frac{7}{8}$   $94$   $94\frac{1}{8}$   $94\frac{1}{4}$   $94\frac{3}{8}$   $94\frac{1}{2}$   $94\frac{5}{8}$   $94\frac{3}{4}$   $94\frac{7}{8}$   $95$   $95\frac{1}{8}$   $95\frac{1}{4}$   $95\frac{3}{8}$   $95\frac{1}{2}$   $95\frac{5}{8}$   $95\frac{3}{4}$   $95\frac{7}{8}$   $96$   $96\frac{1}{8}$   $96\frac{1}{4}$   $96\frac{3}{8}$   $96\frac{1}{2}$   $96\frac{5}{8}$   $96\frac{3}{4}$   $96\frac{7}{8}$   $97$   $97\frac{1}{8}$   $97\frac{1}{4}$   $97\frac{3}{8}$   $97\frac{1}{2}$   $97\frac{5}{8}$   $97\frac{3}{4}$   $97\frac{7}{8}$   $98$   $98\frac{1}{8}$   $98\frac{1}{4}$   $98\frac{3}{8}$   $98\frac{1}{2}$   $98\frac{5}{8}$   $98\frac{3}{4}$   $98\frac{7}{8}$   $99$   $99\frac{1}{8}$   $99\frac{1}{4}$   $99\frac{3}{8}$   $99\frac{1}{2}$   $99\frac{5}{8}$   $99\frac{3}{4}$   $99\frac{7}{8}$   $100$   $100\frac{1}{8}$   $100\frac{1}{4}$   $100\frac{3}{8}$   $100\frac{1}{2}$   $100\frac{5}{8}$   $100\frac{3}{4}$   $100\frac{7}{8}$   $101$   $101\frac{1}{8}$   $101\frac{1}{4}$   $101\frac{3}{8}$   $101\frac{1}{2}$   $101\frac{5}{8}$   $101\frac{3}{4}$   $101\frac{7}{8}$   $102$   $102\frac{1}{8}$   $102\frac{1}{4}$   $102\frac{3}{8}$   $102\frac{1}{2}$   $102\frac{5}{8}$   $102\frac{3}{4}$   $102\frac{7}{8}$   $103$   $103\frac{1}{8}$   $103\frac{1}{4}$   $103\frac{3}{8}$   $103\frac{1}{2}$   $103\frac{5}{8}$   $103\frac{3}{4}$   $103\frac{7}{8}$   $104$   $104\frac{1}{8}$   $104\frac{1}{4}$   $104\frac{3}{8}$   $104\frac{1}{2}$   $104\frac{5}{8}$   $104\frac{3}{4}$   $104\frac{7}{8}$   $105$   $105\frac{1}{8}$   $105\frac{1}{4}$   $105\frac{3}{8}$   $105\frac{1}{2}$   $105\frac{5}{8}$   $105\frac{3}{4}$   $105\frac{7}{8}$   $106$   $106\frac{1}{8}$   $106\frac{1}{4}$   $106\frac{3}{8}$   $106\frac{1}{2}$   $106\frac{5}{8}$   $106\frac{3}{4}$   $106\frac{7}{8}$   $107$   $107\frac{1}{8}$   $107\frac{1}{4}$   $107\frac{3}{8}$   $107\frac{1}{2}$   $107\frac{5}{8}$   $107\frac{3}{4}$   $107\frac{7}{8}$   $108$   $108\frac{1}{8}$   $108\frac{1}{4}$   $108\frac{3}{8}$   $108\frac{1}{2}$   $108\frac{5}{8}$   $108\frac{3}{4}$   $108\frac{7}{8}$   $109$   $109\frac{1}{8}$   $109\frac{1}{4}$   $109\frac{3}{8}$   $109\frac{1}{2}$   $109\frac{5}{8}$   $109\frac{3}{4}$   $109\frac{7}{8}$   $110$   $110\frac{1}{8}$   $110\frac{1}{4}$   $110\frac{3}{8}$   $110\frac{1}{2}$   $110\frac{5}{8}$   $110\frac{3}{4}$   $110\frac{7}{8}$   $111$   $111\frac{1}{8}$   $111\frac{1}{4}$   $111\frac{3}{8}$   $111\frac{1}{2}$   $111\frac{5}{8}$   $111\frac{3}{4}$   $111\frac{7}{8}$   $112$   $112\frac{1}{8}$   $112\frac{1}{4}$   $112\frac{3}{8}$   $112\frac{1}{2}$   $112\frac{5}{8}$   $112\frac{3}{4}$   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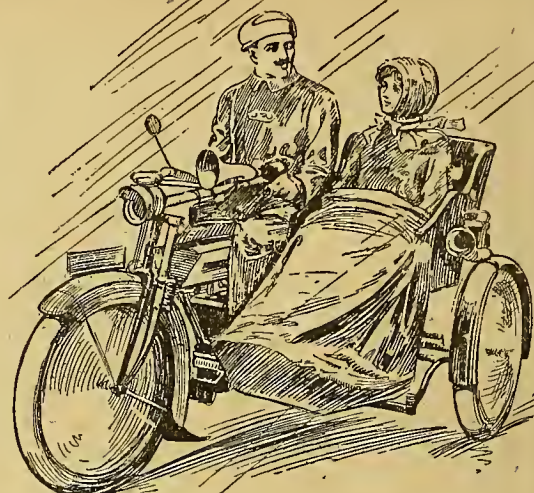
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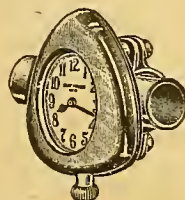
## FOR MOTOR NOVELTIES AND ACCESSORIES



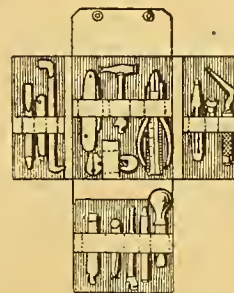
Motor Cycle Watch, strongly made; in nickel case.....4/3



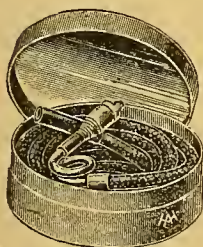
Spare Bell or Tube Case. In solid leather. 6½ ins. diameter, 3½ ins. deep.....5/-  
Larger size to take both spare tube and belt, 9½ ins. diameter, 3½ ins. deep. With division inside.....6/9



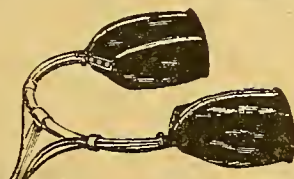
The "Nebo" Motor Cycle Watch, in dust and water proof nickel case. Guaranteed for 12 months...12/6



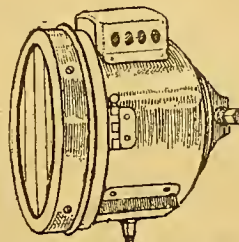
Motor Cyclist's Tool Kit; best quality folding leather case, containing 16 tools, 10/6



Repairlite. A portable light for use on the road. Can be fitted to any acetylene generator and packs up neatly in a flat circular tin.....1/9



Motor Cyclist's Hand Protectors; self-supporting and flexible. Covers all levers, but does not interfere with free access to them. In black waterproof, lined grey cloth, pair 9/6  
In best black waterproof, lined Tamo, pair 15/6  
In tan leather waterproof, lined fur, pair 22/6



"Agros" Motor Cycle Head Lamp. Fitted with genuine Mangin lens, mirror, reflector, and Bray's Roni burner. Diameter of front lens...12/9  
Generator....7/9 and 15/6



The "Agros" Gaiter, clips into the bead of the rim. It is correctly moulded and heavily rubber. One of the most necessary and valuable spare. To fit 2, 2½ and 2½ ins. tyres...2/-

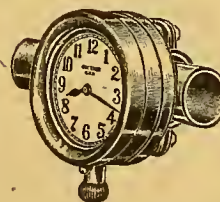


Jack for Sidecar. Very light in weight, and convenient for travelling as it takes up very little space...3/6



Motor Cyclist's Cap. Is designed with a specially made elastic round the bottom, which can be tightened or made loose at will. It is absolutely waterproof and about the lightest cap made. Can be worn as an ordinary cap or as illustrated.....6/6

"Flat" Motor Cycle Watch; high quality finish, in dustproof nickel case. Guaranteed for 12 months....9/6



Motor Cycle Box Spanner Set. Set of three spanners with tommy and screwdriver...1/6  
Pigskin case (as sketch) 9d. extra



The Eagle Mascot, in nickel finish; will fit the majority of handle bars. 3/11

### MOTOR CYCLES & SIDECARS

We are prepared to supply any make of Motor Cycle or Sidecar on the most

#### EASY TERMS OF DEFERRED PAYMENT.

The interest is charged on balance only, after a deposit of 20% is paid. The rate of interest is from 2½%. Packing and crates free.

We are so very busy booking orders for 1913 models that you will benefit greatly by making early application. Call or write for particulars.

We pay carriage throughout the United Kingdom.



Billiken Mascot: will fit 2 and rim. bat. Nickel finish.....5/6



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Motor Cycle Purchase

**PAGETS have in Stock and for Early Delivery:**

## 1913 MODELS.

- 8 h.p. **MATCHLESS**, chain or double belt, 2-speed gear.  
 7 h.p. **INDIAN**, 2-speed gear, chain drive.  
 5-6 h.p. **BAT**, spring frame, chain drive and 2-speed gear.  
 5-6 h.p. **C.YNO.**, 3-speed gear box, all transmission encased.  
 3½ h.p. **BRADBURY**, 2-speed gear and chain drive.  
 3½-4 h.p. **NEW HUDSON** and Sidecar, 3-speed gear, belt and chain drive.  
 3½ h.p. **ZENITH-GRADUA**, belt drive and "Gradua" gear.  
 2½ h.p. **DOUGLAS**, all models.  
 3½ h.p. **TRIUMPH**, 3-speed gear, belt drive.

Also **RUDGE, SCOTT**, etc., etc.

**Sidecars - - - - - from £8**

Order now. Only £5 required, with order, and the balance on Pagets Plan of deferred payments. Write to-day for particulars and price lists. Unbiased advice given as to best machine to suit your requirements. We pay carriage and crate. Deliveries guaranteed.

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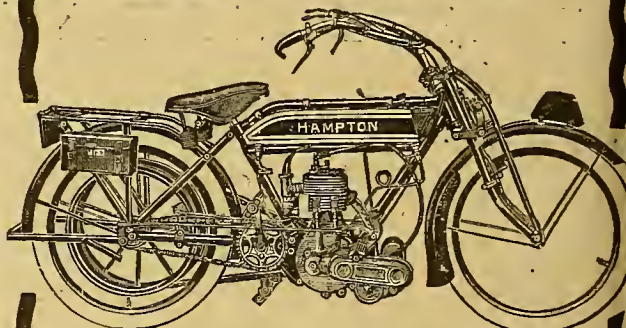
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London, S.W.  
Telephone—City 9134.

**PAGETS**  
for Sidecar  
Machines.

**WASH IT WITH A HOSE.**

## THE NEW HAMPTON

**ALL-BLACK WINTER MODEL**



Finish is Guaranteed not to Crack, Chip, or Tarnish. No Japan used. Will not Rust. For Winter Riding. Saves Time and Temper.

3½ h.p. Free Engine Model, complete with all Accessories,

**£49 - 10 - 0 complete.**

SEND FOR LIST NOW.

The Hampton Engineering Co., Lifford Mills, King's Norton



Can be fitted in a few minutes to any handlebar.

**THE IDEAL ROAD CLEARER FOR THE MOTOR CYCLIST.**

**PENETRATING AND PERSISTENT.**

**COMPLETE OUTFIT**, comprising Electric Horn, Handle-bar Push, Flexible Connecting Wire, 6 Volt Special Batteries and Satchel Container, Price 16/-.  
 Spare 6 Volt Batteries, 2/6 each. Additional Pear Push for Sidecar, with flexible connecting cord, 1/-

Spare 6 Volt Batteries, 2/6 each. Additional Pear Push for Sidecar, with flexible connecting cord, 1/-

## The Famous VOLEX GIANT Dry Battery

The Most Powerful and Lasting Primary Battery in the World.



As an Ignition Battery it is pre eminent—better than accumulators for many purposes.

Price—  
 4½ volt, 4/6 each. Post 5d.  
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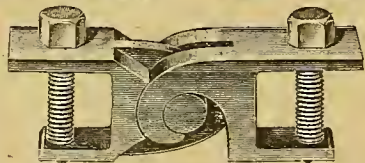
In ordinary use for Motor Cycle head or sidecar lighting lasts about 6 months without renewal.

It will pay you to send for our M. & E. Catalogue. An invaluable guide to things electrical.

**WARD & GOLDSTONE,**

Contractors to H.M. Government.  
**SALFORD, MANCHESTER.**

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PRICE

**2/6**

ONE YEAR'S GUARANTEE. MADE OUT OF SOLID STEEL BARS. HARDENED—UNBREAKABLE.

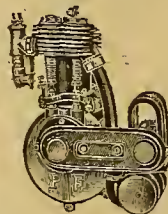
**ASTON MOTOR ACCESSORIES Co. Ltd.**  
 Talford Street, Aston, BIRMINGHAM.

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**WORLD-RENOWNED**

## 'PEUGEOT' ENGINES.

**"O. G." ADJUSTABLE PULLEYS.**



**Do you require a Bosch Magneto?**

**J. TAYLOR, "O. G." Works,**  
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# CORONET SIDE CARS

are built of the finest materials by skilled workmen. Every car is as perfect as human knowledge and skill can make it.

The springing means riding comfort; the construction, freedom from sideslip. Every time you take the car out you can depend upon security, comfort, beauty, perfection. A **CORONET SIDECAR** embodies all the latest improvements; carries the fullest possible guarantee. Our free booklet explains why it will pay you to secure a **CORONET**. May we send it?



Prices from **£6:6:0**

Can be obtained from all dealers.



**TEE BEE LOW  
SEAT-PILLAR,**  
5/- each.

**20 NEW AMAC CARBURETTORS**  
fitted with variable jet and handle-bar control.

Price 17/6 each.

Now is the time to obtain an up-to-date carburettor at a great reduction.

**Binks 2-Jet Carburettors.**

Increase your power by fitting a Binks. We will take your present carburettor in exchange. Write for quotation.

**Weather-Proof Magneto.**

Get rid of your out-of-date magneto, coil, or accumulator, and let us take them in exchange for the latest water-tight magneto.

**BOOTH'S MOTORIES,**

Keighley Mills, Bedford Street North,  
**HALIFAX.**

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**MOTOR BICYCLES FOR SALE.**

**L. HITCHINGS', Ltd.,**  
**LIVERPOOL, 74, Bold St.**

**TRIUMPH, Matchless, and James** motor cycles, and Crescent cycle cars; sole agents: courteous service and absolute satisfaction guaranteed. Your enquiries invited by Hitchings', Ltd., 74, Bold St., the pioneers of motor cycling in the north. (Established 35 years ago. No connection with any other firm.) [0179]

**B. BIRKENHEAD, Liverpool, and Manchester.**

**SALE** of new and second-hand at the leading depots for the north, Colmore Depots; agents for Douglas, Scott, Matchless, Bat, Clyno, Premier, etc., etc.—Colmore Depots, 18, Renshaw St., Liverpool, and 261, Deansgate, Manchester. [9164]

**1912** Scott, practically new; £55.—Ewbank and Co., Castleford. [9186]

**1908** Triumph, just been re-done up at the Triumph works, like new; £30.—A. H. Burrell, Lynton House, Castleford. [9185]

**2 1/2** h.p. N.S.U. Motor Cycle, brand new mag., B. and B. carburettor, in perfect running order; £10.—Ewbank and Co., Castleford. [9187]

**1911** T.T. Triumph, just had new engine fitted at works, like new; £36.—Ewbank and Co., Castleford. [9188]

**IMMEDIATE** Delivery of Humberettes, Scotts, Triumphs, New Hudsons, and Douglas motor cycles.—Ewbank and Co., Castleford. [9184]

**PRESTON**—1913 Scotts, Zenith, Rex, Jap. Matchless, Lewis, Alldays, and most others; early deliveries guaranteed.

**PRESTON**—1913 cycle cars: delivery from stock; G.W.K.'s, also the Baby; fix up a trial run now.

**PRESTON**—1912 several good second-hands, must be cleared: room wanted.—The Motor Cycle House, Fishergate, Preston. [X5347]

**B.S.A.** 3 1/2 h.p., 1911, Mabon clutch, not done 3,000, like new; £33.—10, Haymarket, Sheffield. [X5247]

**2 1/2** h.p. De Dion, 1912 B. and B., 26 Palmers, footboards, low and fast, 29/10: 5-6 h.p. twin Rex tri-car, 1911 B. and B., engine recently re-bushed, tyres good, Lomax on back, cantilever seat, £12: good gramophone part exchange for either.—F. Axup, Attercliffe, Sheffield. [X5252]

**2** h.p. Motosacoche, free engine, Bosch, condition new, mileage 400; £18.—80, Bispham Rd., Southport. [X5217]

**3 1/2** h.p. Quadrant, running order; £26/10, offers, or ex-22 change.—320, Manor View, Cudworth, Barnsley. [X5268]

**P. and M.** 1911, particularly good machine, 1912 carburettor; £42.—G. H. Wilson, Pannal, York-shire. [9171]

**ROYAL** Enfield, 2 1/2 h.p., free engine, 2-speed, 1911, excellent condition; £35.—Turnbull, Kirkcraze, Thirsk. [X4995]

**1912** Douglas H. in perfect condition, with many extras.—Dr. McManus, County Asylum, Lancaster. [8948]

**2 1/2** h.p. J.A.P., excellent condition, has 2 new Dunlop tyres; bargain, £8/10; must sell.—168, The Moor, Sheffield. [0224]

**1912** Free Engine 3 1/2 h.p. B.S.A., new Easter, perfect condition; any trial; £42.—Highgate House, Looe, Bolton. [X5151]

**B.S.A.**—Two 1912 machines, standard £36, 2-speed model £48: both splendid condition.—Darling, Sunnyside, Keighley. [X5086]

**TRIUMPH**, 1911, F.E., speedometer, Whittle, lamp, generator; bought car; best offer over £35.—30, Grovehall Drive, Leeds. [X5183]

**1913** Triumphs, Rudge, Excelsiors, A.J.S., and Ford cars; book now for early deliveries.—Rediera and Co.'s Garage, Rotherham. [X4397]

**8** h.p. Bat Motor Cycle and Mills-Fulford Cabrio side-car, new August 1912, also Lucas acetylene head light.—Shaw, Wellington St., Salford. [X5150]

**1910** T.T. Triumph, perfect, £32: 1909 Triumph, £20: 4 h.p. twin N.S.U., £12, bargains; must sell.—Robinson, West View, Gainford. [X5313]

**1911** Ladv's Motosacoche, perfect running order, and excellent condition, real good machine; £22.—Mrs. Burrell, Lynton House, Castleford. [9189]

**3 1/2** h.p. Minerva, in first-class condition, tyres almost 22 new; £9: exchange lightweight and cash, or 4-cyl. magneto, Bosch, and cash.—Below.

**3 1/2** h.p. Minerva, in new condition, Bosch, N.S.U. 2-speed, B. and B., 1912, low; £20, with sidecar £22/10.—Below.

**3 1/2** h.p. Minerva, new engine 2 months ago, 1912 £22 Mabon free engine, with almost new sidecar; bargain, £22.

**5** h.p. Rex, magneto, free engine; £13.—Jones, 7, Chorley New Rd., Horwich. [X5165]

# PREMIER Cycle Cars.

**BEST VALUE FOR 100 GUINEAS.**

If you wish to secure early delivery of one of these high-class cycle cars, it will be necessary to place order now. They will be going at a premium in another month. Save money by purchasing now.

## BARGAINS IN REXES.

**7** h.p. **REX**, M.O.V., 2 speeds, handle starting, complete with £10 sidecar (1911) ..... £42 10  
**5** h.p. **REX**, 1911, M.O.V., 2 speeds, complete with Rex spring wheel £12 sidecar ..... £40 0  
**5** h.p. **REX**, 1910, M.O.V., 2 speeds, handle starting ..... £32 10  
**3 1/2** h.p. **REX**, 1909, with 1910 engine ..... £18 10  
**5** h.p. **REX**, 1908, 2 speeds, handle starting ..... £22 0  
**5** h.p. **REX**, 1910 magneto, h-b. control ..... £18 10  
**3 1/2** h.p. **REX**, 1910, M.O.V., magneto, etc. .... £19 10  
**3 1/2** h.p. **REX**, 1908, spring forks, magneto ..... £16 10

## VARIOUS BARGAINS.

**3 1/2** h.p. **PREMIER**, brand new, 1911 1/2 model .... £34 10  
**3 1/2** h.p. **PREMIER**, 3-sp. Sturmeys, 1911 1/2, new .. £44 10  
**3 1/2** h.p. **PREMIER**, 1912, 3-sp. model, run 1,000 mls. £39 0  
**6** h.p. **DOT**, 1912, J.A.P. engine, M.O.V., 2 speeds, complete with sidecar; cost £80 ..... £47 10  
**3 1/2** h.p. **BAT**, 1910 model, J.A.P. engine, spring frame, speedometer ..... £22 10  
**3 1/2** h.p. **P. & M.**, 1910, with speedometer, horn back rest, other spares, and sidecar ..... £40 0  
**3 1/2** h.p. **TRIUMPH**, 1911, free engine, complete with sidecar ..... £39 0  
**3 1/2** h.p. **HUMBER**, 1911, 2 speeds, handle starting, with Millford sidecar ..... £33 15  
**3 1/2** h.p. **HUMBER**, 1910, 2 speeds, handle starting ..... £31 0  
**3 1/2** h.p. **N.S.U.** 1908, M.O.V., magneto ..... £13 10  
**3 1/2** h.p. **QUADRANT** magneto, spring forks ..... £13 10  
**3 1/2** h.p. **Twin ENFIELD**, 1910, lightweight ..... £17 10  
**2 1/2** h.p. **WOLF**, lightweight, 1911, magneto ..... £15 0  
**2 1/2** h.p. **WOLF**, lightweight, 1911, model ..... £18 10  
**3 1/2** h.p. **R. & P.**, vertical engine, 2610, wheels .... £15 15  
**2 1/2** h.p. **MINERVA**, nice order ..... £6 10  
**2 1/2** h.p. **ANTOINE**, vertical engine, spray ..... £6 15  
**3 1/2** h.p. **QUADRANT**, vertical engine, spray ..... £5 10  
**5** h.p. **SAROLEA** Tricar, twin, P. & M. gear ..... £8 10  
**3 1/2** h.p. **PHENIX** Tricar, Minerva engine, M.O.V., 2 speeds, fan-cooled, coach-built ..... £10 10  
**PUSH CYCLES TAKEN IN EXCHANGE.**

## EASY STARTING for 12/6.

**ENDRICK DECOMPRESSORS** enable you to start your machine without effort. Screws into valve cap; no alteration required. Supplied to fit all engines.

12/6 each. Postage 3d.

Send valve cap with order, and we will bore and fit decompressor for 1/- extra.

## MISCELLANEOUS.

New Sidecar Frame and Wheel ..... 35/-  
Rin. Plated Horns, each ..... 2/8  
New 26 x 2 Continental Cover ..... 10/-  
New Motor Cycle Frame, suit J.A.P. .... £3 7/6  
Darracq 3-speed and Reverse Gear Box ..... £3 10  
Binks' Racing Carburettor ..... 20/-  
Bosch Magneto, suit Triumph ..... 37/6  
New Canoe Sidecar Body, side door ..... 45/-  
Coronet Pistons, new, 81 mm. bore ..... 2/6  
New 26 x 2 1/2 in. Wood-Milne Cover ..... 35/-  
Shop-soiled High-tension Magneto ..... £2 12  
Bosch Magneto, suit Twin Rex ..... 57/6  
Nearly New 1912 Senspray ..... 19/6  
Bradbury Pattern Handle-bars, rin. stems ..... 4/8  
Sidecar, complete with art cane body ..... 38/5  
Long Handle-bars, dropped ends ..... 5/6 and 6/6  
Coronet Silencers, up to 5 h.p. .... 3/3 and 4/5  
New Sidecar Basket, canoe front ..... 21/-  
B. & B. and Amac, h-b. control ..... 13/6  
New Amac Carburettor, h-b. control ..... 17/6  
Albion Free-engine Clutch ..... 30/-  
Mills-Fulford Sidecar ..... £3 15  
New Druid Soring Fork, heavy model ..... 45/-  
New Pair Saxon Spring Forks ..... 32/6

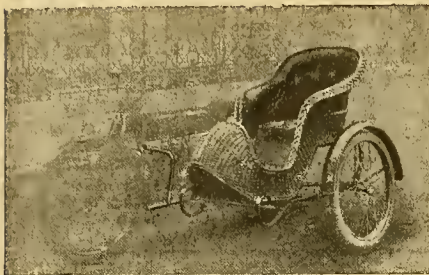
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**HALIFAX.**

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# THE PORTLAND SIDECAR



MODEL "DE LUXE B."

Price £7 17s. 6d.

A Sidecar makes a very fine Xmas gift, and moreover is very acceptable. Prices range from six to sixteen guineas, and all models are guaranteed 12 months. LIST POST FREE.

## 1913 MODELS MOTOR CYCLES.

IMMEDIATE DELIVERY  
EX STOCK OF 1913

DOUGLAS (MODELS N. P. & R.)

TRIUMPHS (1912 with 1913 engines) £2 below list price.

A.C. SOCIABLE (De Luxe model with front wheel brakes).

ENFIELD (6 h.p. Sidecar Combination).

ZENITH (6 h.p. model).

RUDGE 3½ h.p. MULTI, 3½ h.p. STANDARD.

REXES 6 h.p. De Luxe 6 h.p. Sidette 6 h.p. Tourist 6 h.p. T.T.

PREMIER (3½ h.p. 2-speed model) EARLY DELIVERIES OF

SCOTTS (MARCH 21st).

TRIUMPHS (2-speed, JAN.) (Clutch, FEB.)

MORGANS (JANUARY).

PREMIER CYCLE CAR (JANUARY).

G.W.K. (JANUARY).

B.S.A.'s (All models including chain driven, 10 days).

Other Models can be delivered on best dates, and terms cash or exchange, or for deferred payments.

THE LIMIT IN LUXURY.

# THE PORTLAND SIDECAR

THE PROPOSITION FOR 1913.

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LONDON W

Telephone 552 Mayfair  
Telegrams "Ahd.ente" London

(LISTS POST FREE)

## MOTOR BICYCLES FOR SALE.

1909 3½ h.p. Quadrant, low, h.b.c., cut-out, Bosch mag., Amac carburettor, in splendid order; £14/10.—Baron, 386, Blackburn Rd., Accrington. [9180]

ROVER, late 1912, 3-speed, perfect condition, £40; XFall pax saddle, 50/-; self-contained sidecar lamp, 10/-.—Bainford, Manchester Rd., Marsden, Yorks. [X5087]

1912 3½ h.p. 2-speed Lincoln Elk, run 200 miles, just soiled, kick start, chain-belt drive; £28, offer, or exchange.—W. Burrows, Cudworth, Barnsley. [X5267]

3 h.p. Rex, spring forks, Continental tyres, splendid goer; would take £12 cash, or cycle and gramophone taken in part exchange; after 6 p.m.—Young Maack, 35, Porter St., Hull. [9197]

FOR Sale, 3½ h.p. 1912 2-speed Humber motor cycle, 2 tanks, 1½ gallons, Tourist Trophy, ordinary handle-bars; can be seen by appointment any time.—Bernard Glover, 9, Newton Rd., Leeds. [X5212]

RUDGE, free engine, shop-soiled only, £45; ditto, Multi, £50; B.S.A., free engine, £45; 3½ h.p. 2-speed Humber, 1911 £29/10; new sidecar, £7/7 model for £5/5.—Carrs, Knowlesy St., Bury. [X4666]

NORTHERN Depot, Ltd., Everything Motorish, Leeco St., Liverpool.—Only 4 new 1912 models left; cash offers considered; standard Kerry-Abingdon, Colonial New Hudson, clutch Rex-Jap, A.C. Sociable.

REX-J.A.P. Specialists.—A few early delivery dates still open for 1913; trade supplied.

A.C. Sociables; immediate delivery.

ZEBRA, 6½ h.p. single, 8 h.p. 4-cyl., small care; £150 and £175 complete.—See above. [X5246]

FOR Sale, a Peugeot-Chatel-Lea, 7-h.p. D.H.K. free engine in back hub, only 6 months old, done 500 miles, lamp, horn, generator, speedometer; £47, or near offer.—W. H. Bunting, Alton, Shawheath, Stockport. [9214]

PHELON and Moore, April, 1912, special model, black handle-bars, 2½ tyres, extra stays to front forks, chain guard, Brooks new B170 saddle, Cowey speedometer, just overhauled; £54.—Byrom, Albion St., Leeds. [9241]

MY Competition Rudge Multi, 1912, for disposal, winner gold and silver medals, complete with speedometer, lamp, horn, generator, many spares, and sidecar, quick detachable, run 1,800 miles; £59 or offer.—Proud, Birkdale. [9030]

PARISH, Preston.—Agent for Douglas, Bradbury, Williamson, Sunbeam, Premier; the superior machines; exchanges; sidecars; cycle car buyers learn about the Premier; best value for 100 gu.; built in Coventry.—Agent, Parish, Preston. [X5277]

TWIN Rex, 5 h.p., 1910, thoroughly overhauled, engine re-bushed, B.B. carburettor, Mabon var. gear, free engine, decompressors, tyres nearly new, Clincher back, Bates front, Lycett saddle, new Sphinx plugs, powerful, fast, solo or sidecar; £26, lowest.—Bell, Carr Lane, Acomb, York. [9240]

1912 6 h.p. T.T. Bat-Jap, side valve engine, special timing, not done 1,500 miles, equipped for touring purposes, spring forks, extra wide mudguards, 2½ in. tyres, automatic and hand pump lubrication, speed 7 to 70 m.p.h. guaranteed; cost over £70, accept £55, at offer; approval, deposit system.—Grudell, 128, Colman St., Hull. [9136]

## SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SCOTTS, 1913 model due this month; new 1912 Scott and Phelon and Moore in stock.—Moss, Wem. [X5206]

DOUGLAS, 1913, immediate delivery of any model; Model R, actually in stock.—Moss, Wem. [X5207]

LEVIS, 2½ h.p., one month old, only ridden 150 miles; £29/10 for quick sale.—May, Tyn-y-Fiordd, Colwyn Bay. [X5250]

1913 Scott, A.J.S., Triumph, James; book now for early delivery.—Nelson, Gloddaeth St., Llandudno. [X4392]

LATE 1911 Standard Bradbury, in perfect condition, lamp, horn, etc.; £25.—Fox, Barrocks Golf Club, Lichfield. [X5213]

ZENITH, 3½ h.p., 1912, good as new, with all accessories; £40, or nearest offer.—Makin, Abbey Rd., Ashton-on-Mersey. [X5124]

HUMBER, 2½ h.p., free engine, handle starting, fast, reliable, tools and spares; first cheque £6.—M. C. Fletcher, Hill St., Clay Cross. [X5178]

1913 Triumphs, P. and M., Indians, B.S.A., at models; book now for early delivery.—Blackheath Motor Depot, Blackheath, Staffs. [X3015]

BARGAIN.—2 h.p. Minerva, in splendid running order, nearly new tyres, all ready to drive away; £5.—W. Jones, 64, Rhoddu Rd., Wrexham. [X5201]

LATE 1911 3½ h.p. Bradbury, with 1912 fittings, complete with tools and spares; any reasonable offer taken.—G. Pettit, Pied Bull Hotel, Chester. [X5221]

PREMIER, T.T., selected engine, Sep., 1912, 1913 improvements, not ridden 100 miles; any trial; £42.—Lovatt, 70, Stafford St., Hanley, Staffs. [X5205]

FOR

10% CASH DISCOUNT off all these machines.

XMAS only.

SECOND-HAND.

MATCHLESS, 1910, 8 h.p., T.T., spring forks.... Offers

INDIAN, 1912, 7-g h.p., 2-speeds £50

CLYNO, 1912, 6 h.p., 2-speed, just been re-enamelled..... £52

ENFIELD, 1912, 2½ h.p., twin, 2-speeds, chain drive £36

ZENITH, 1912, 6 h.p., Gradua gear, like new throughout.... £57

ENFIELD, 1912, 2½ h.p., twin, chain drive, 2-speeds... £35

HUMBER, 1912, 3½ h.p., 2-speeds, handle start, as new... £41

PREMIER, T. T. model, like new, 6 h.p., 1912, sidette, like new, only done 500 miles..... £32

REX, 6 h.p., 1912, sidette, like new, only done 500 miles..... £56

DARRACQ, Car, 8 h.p., 3 speeds and reverse, seater, exchange £25

MATCHLESS, 8 h.p., 1911, 2-speeds, with sidecar, as new... £60

REX, 1911, 3½ h.p., de luxe, excellent order, 2-speeds, handle start... £30

F.N., 1911, 5-6 h.p., four-cylinder, shaft drive, beautiful condition... £28

REX, 1911, 3½ h.p., cone clutch, free engine, handle starting..... £26

PHENIX, 8 h.p. duocer, water-co., 2 speeds and reverse... £32

MINERVA, 4½ h.p. Twin, spring forks, low built... £16

ZENITH, 3½ h.p., 1911, Gradua gear, excellent order... £36

ARIEL, 2½ h.p., handle-bar control, 26 in. wheels..... £12

A.J.S., 2½ h.p., twin, just been overhauled and re-enamelled... £24

F.N., 5-6 h.p., four-cylinder, exceptionally good order..... £26

MOTO REVE, 2½ h.p., grey finish, 1910 model twin... £22

ZENITH, 3½ h.p., 1911 model, 1910 model 3½ h.p., 2-speeds, handle starting... £32

N.S.U., 1½ h.p., 1908 model, magneto, low built, good order..... £12

F.N., 2½ h.p., shaft-driven model, two speeds..... £22

HUMBER, 1910, 2½ h.p., twin, belt drive, khaki finish... £30

ENFIELD, 1910, 2½ h.p., twin, belt drive, khaki finish... £20

LINCOLN ELK, 3 h.p. magneto, low built, MOV. good tyres... £14

BRADBURY, 1912, 3½ h.p. 2-speed, sidecar, speedometer... £53

all accessories.....

NAPIER CAR, 15 h.p., 1910, 5-seater, excellent order, fully equipped, lamps, horn, whistle, speedometer (Stepney), two screens, hood, spare cover and tubes, condition as new. Entertain motor cycle exchange..... £190

THESE PRICES STRICTLY NETT.

FULL LIST OF THESE AND OTHER MACHINES POST FREE UPON REQUEST

DEFERRED PAYMENTS, 5% EXTRA, 1 DOWN AND BALANCE 12 MONTHLY PAYMENTS.

SEND FOR XMAS LIST OF CLEARANCE & ACCESSORY BARGAINS.

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Telephone 552 Mayfair  
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(LISTS POST FREE)



## The Halifax Motor Exchange

**Largest Rex Dealers,**  
**16, WESTGATE, HALIFAX.**  
 'Phone: 766. Telegrams: "Perfection."

**Prompt Deliveries of**  
**1913 REX, REX-JAP,**  
**BRADBURY,**  
**DOUGLAS,**  
**WILLIAMSON,**  
**PERRY & CHATER-LEA**  
**CYCLE CARS.**

**EXCHANGES QUOTED.**

Until our market is satisfied we are prepared to offer unprecedented allowance for ALL TYPES of second-hand machines in part payment for these:

**NEW REX BARGAINS.**  
**FROM STOCK.**

Maker's Price. Our Price.  
 1911-12 3½ h.p. 2-sp. de Luxe £59 17 43 guineas.  
 1911-12 5 h.p. 2-sp. Twin de Luxe, special price 51 Gns  
 1912 2½ h.p. 2-speed Rex Junior de Luxe .. £45 0  
 1912 4 h.p. Tourist, 84½ bore x 95 stroke .. £48 0  
 1912 4 h.p. Rex Speed King .. £46 0  
 1912 4 h.p. Tourist, clutch model .. £49 10  
 1912 4 h.p. 2-speed de Luxe, handlestarting .. £56 0  
 1912 6 h.p. 2-speed Twin de Luxe .. £62 10  
 1912 6 h.p. Twin de Luxe, chain drive .. £70 0  
 1912 6 h.p. 2-speed Sidette de Luxe .. £75 0  
 1912 REX Cane Sidecar .. £12 10

**Offers wanted. Cash or exchange.**  
**SOLD UNDER MAKER'S GUARANTEE.**

### SECOND-HAND REXES.

REX, 1911, 3½ h.p., 2-speed, shop-soiled .. 37 Gns.  
 REX, 1912, 2-speed, Junior, soiled only .. £29 10  
 REX, 5 h.p., 1909, 2-speed, de Luxe .. £29 10  
 REX, 5 h.p., 2-speed, and sidecar .. £29 10  
 REX, 1912, Twin 2-speed, de Luxe, as new .. £43 10  
 REX, 5½ h.p., Twin, spring forks .. £15 10  
 REX, 1912 4 h.p., Tourist, done 200 miles .. £38 10  
 REX, 7 h.p., twin very-powerful .. £29 10  
 REX, 3½ h.p., magneto, spring forks .. £17 10  
 REX, 2½ h.p., magneto, lightweight, h.b. con. .. £16 10  
 REX, 1911, 5 h.p., 2-speed, Rex de Luxe .. £38 10  
 REX, 5½ h.p., free engine, h.b. control .. £18 10  
 REX, 3½ h.p., light and low, h.b. control .. £11 10  
 REX, 5½ h.p. Twin de Luxe, mag. ignition .. £21 10

### MISCELLANEOUS MACHINES.

RUDGE, 3½ h.p. Tourist, grand condition .. £37 10  
 HUMBER, 3½ h.p., 1911, 2-speed, grand condition .. £34 10  
 NEW HUDSON, 3½ h.p., 3 speeds .. £35 10  
 TORPEDO, 1912, 3½ h.p., tourist, very smart .. £32 10  
 PRECISION (Ivy), Druids, h.b. control .. £33 10  
 1910 6 h.p. 2-speed N.S.U. & CHATER-LEA coachbuilt sidecar .. £38 0  
 ROVER, 1911, clutch model, cost £55 .. £39 10  
 GLOBE, 2 h.p., lightweight, little used .. £6 10  
 P. & M., 2½ h.p., h.b. control, bargain .. £21 10  
 ANTOINE, 6 h.p., magneto, Saxo forks .. £12 10  
 P.C., 5 h.p., 2-speed, wants attention .. £19 10  
 R.F., special machine, 3½ h.p., vertical engine .. £9 10  
 BROWN 3½ h.p., h.b. control, good order .. £11 10  
 HUMBER, 3 h.p., chain drive, runs well .. £8 10  
 4½ h.p. w.c. 2-speed MONOCAR, wants tuning .. £11 10  
 2-speed HUMBER Tricar .. £11 10  
 REXETTE, w.c., wants attention .. £9 10  
 WOLSELEY 4-cylinder 2-seater Car .. £39 10  
 ROVER, 6 h.p., 2-seater, hood, screen, and electric lamps .. £39 10

Easy Payments quoted on any machine.

### DON'T FAIL ON HILLS.

Fit a 2-speed gear to your present machine whilst you have time. We give you a golden opportunity NOW. DON'T MISS IT.  
 1912 Armstrong 3-speed Gear; new and complete; Mark II., £5 19 8.  
 Mark III., for passenger work, £6 12 6.

### MOTOR BICYCLES FOR SALE.

1913 A.J.S., 5-speed, the perfect motor cycle, solo or sidecar, delivery January. — F. W. Salmon, Birmingham, Chesterfield. [X4481]  
 BARGAIN.—3½ h.p. Brown, mag., 1912 B.B., new Lyso belt, good tyres, low, fast, excellent condition; £18—46, Corporation St., Stafford. [X5264]  
 6 h.p. A.J.S. 1913 Motor Cycle, delivery end of week, complete with horn, speedometer, and £2/10 suit overalls; owner unable to take delivery; cost £20; offers wanted.—Apply, 203, Dicksch Rd., Walsall. [X5287]  
 TRIUMPH, free engine, new Nov., 1911, splendid condition, just overhauled by makers, new 1, and h. lamp, horn, 2 belts, extra tyre, spares, complete with sidecar fittings; £41, bargain.—Withers, Walsall, Walsall. [X5120]

The North Wales Motor Exchange, Helt St., Wrexham. Tel.: 253.—We have a magnificent stock of good, sound 2nd-hand motor cycles at very reasonable prices; a visit will put money in your pocket if you are looking for one; we specialise in exchanges, and have the cream of the agencies from which you can select your 1913 model, including the Singer and Humberette cycle cars; your enquiry will receive our most careful and immediate attention. [X5216]

### SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

BIRMINGHAM and Leicester.

SALE of new and second-hand at the leading depots for the Midlands; agents for Douglas, Scott, Matchless, Enfield, Triumph, Premier, Bat, Zenith, Olym, Chater, etc., etc.—Colmore Depots, 31, Colmore Row, Birmingham, and 62, High St., Leicester. [9163]

BIRMINGHAM.

SALE of New and Second-hands.

DOUGLAS, 1912, Model K, fine condition, powerful engine, mechanical valves; cost £50, price £37.—Colmore Depot, 27, Colmore Row, Birmingham. [X5270]

DOUGLAS, 1911, Model E, 2-speed, free engine, overhauled, good condition; only £29.—Colmore Depot, Birmingham. [X5271]

P. and M., 1912, Colonial model, just received, £65 model; take £59 for quick sale.—Colmore Depot 27, Colmore Row, Birmingham. [X5272]

3½ h.p. N.S.U., early 1911, Mabon clutch, 1912, Brooks B105, accessories.—Firth, Balderton, Newark. [X4994]

1912 Bradbury N.S.U. 2-speed, lamp, horn, speedometer, mirror, spares, 1½ Dunlop belt; £45.—Below.

1911 Bradbury, N.S.U. 2-speed, and sidecar, splendid condition, lamp, and horn; £40.—Clay, Wigston, Leicester. [X5202]

MOTOR Cycle, new 2½ h.p. Riley engine, mag., good gear, but shabby; £15.—Hodge, 8, Grosvenor Rd., Coventry. [X5344]

2½ h.p. Minerva, m.o.v., modern frame, tank, B. and 24 B.; £10; take sidecar part.—Hoya, Evington Rd., Leicester. [X4671]

1911 Bradbury, 3½ h.p., splendid order; exceptional bargain, £25, complete.—Lloyd, 159, Leam Terrace, Leamington. [X5223]

1910 Douglas, condition excellent, new pistons, September, all spares; £19.—Box 1,959, The Motor Cycle Office, Coventry. [X5346]

T.T. Triumph, 1911, splendid condition, Kempshall, horn, tools, spares, etc.; 29 gns.—A. W. Catt, 21, St. Nicholas St., Coventry. [X6273]

1911 3½ h.p. F.E. Triumph, perfect condition, all accessories, only wants sear.—J. H. Paire, 69, Sparkenhoe St., Leicester. [9169]

ZENITH-GRADUA, 1912, 3½ h.p., with Millford art cane sidecar, new condition; £46, or separate.—14, Pakenham Rd., Edgbaston. [X5210]

1911 Bat-Jap, 8 h.p., 2-speed, Cowey, Chater sidecar, splendid condition; £45, lowest.—Dobson, Yardley Road Sanatorium, Birmingham. [X5121]

INDIAN, 1912, late August, 7 h.p., free engine model, 2-speed motor cycle; price £60; excellent condition.—Massey, Westdale St., Spalding. [9121]

1913 Matchless, Triumph, Scott, Zenith, Douglas, Bramble, Canelet sidecars; immediate deliveries; get our prices.—Clifford's Motories, Eastwood. [9133]

TRIUMPH, 1912, F.E., run rather more than 2,000 miles, tyres and belt renewed, as good as new; £44.—A. Lord, Kerquon, Styvesdale Av., Coventry. [X5352]

HUMBER, 3½ h.p., late 1911, 2 speeds, free engine, new Dunlop tyres 2 months ago, art cane sidecar, horn, tools; £37/10.—Wilson, 175, Walsgrave Rd., Coventry. [X5094]

REX 5 h.p. Twin, 1911, free engine, 2-speed, m.o.v., Bosch mag., Druids, in capital condition; accept £29, must sell.—Box 2,010, The Motor Cycle Office, Coventry. [X5275]

CLUTCH Bradbury, Sept., 1911, just overhauled by makers, not run 5,000, new Palmer, new belt, etc.; £47; getting large twin.—Miles, Scotland Passage, Birmingham. [X5110]

# REY

THE NAME WITH A REPUTATION. (Established 1900!)

**5, HEATH HAMPSTEAD, N.W.**  
**STREET.**

Tele: "Rey, Hampstead." Tel.: 2678, P.O., Hampstead.

### FOR IMMEDIATE DELIVERY.

DOUGLAS, any model.  
 BAT, 7-8 h.p., 2-speed.  
 ZENITH, any model.  
 MATCHLESS, 6 or 8 h.p., 2-speed.  
 BRADBURY, any model.  
 TRIUMPH, T.T. Roadster.  
 TRIUMPH, 3-speed.  
 INDIAN, 7 h.p., 2-speed.  
 SCOTT, 3½ h.p.  
 NORTON T.T., HUMBERS, 3-speed.  
 RUDGE, any model.  
 SINGER, 4½ h.p., 3-speed.  
 SINGER, 3½ h.p., T.T.  
 NEW IMPERIAL, 6 h.p., 3-speed.  
 ENFIELD, 6 h.p., 3-speed.  
 NEW HUDSON, 3½ h.p., 2-speed.  
 LINCOLN ELK, 2-speed.  
 MORGAN.  
 G.W.K.  
 A.C.

**TRADE SUPPLIED WITH VARIOUS MAKES, INCLUDING SIDECARS AND CYCLE CARS. LIBERAL DISCOUNT.**

### SECOND-HAND.

OUR SECOND-HAND STOCK OF MACHINES comprises the FINEST IN LONDON, AT LOWEST PRICES:

£25. DOUGLAS...	1910	£48. ZENITH, 6 h.p.	1912
£28. F.N., 5-6 h.p.	1911	£39. SCOTT	1911
£25. F.N., 5-6 h.p.	1910	£12. MINERVA	1909
£36. RUDGE T.T.	1912	£39. BRADBURY	1912
£28. TRUMP J.A.P., Twin, good order			1912
£33. MATCHLESS, 5 h.p., Twin			1912
£38. KERRY ABINGDON, 3½ h.p. 2-speed and sidecar			1912
£38. NEW-HUDSON, 3½ h.p., 3-speed			1912
£37. REX, 6 h.p., clutch, speedometer and sidecar			1911
£36. TRIUMPH, 3½ h.p. T.T. Roadster			1911
£0. PREMIER, 3½ h.p., 2-speed			1911
£28. J.A.P.-CHATER, 4 h.p.			1912
£280. F.N. Car, 10-14 h.p., as new			1912

All Accessories included on S.H. at the price advertised.

### NEW 1912 MACHINES TO CLEAR—CHEAP.

RUDGE, T.T. Roadster .. £36  
 TRIUMPH, free engine .. £48  
 SINGER, 4 h.p., 3-speed .. £54  
 CLYNO, 5-6 h.p. .. £59

**Sole London Wholesale Agent for Norton, New Imperial, and Corah Motor Cycles, also Canelet Sidecars, and shall be pleased to appoint Agents for same.**

### THE FAMOUS "REY" SIDECARS.

ALL MODELS IN STOCK.

Wicker body, £5 5s. Torpedo, £6 5s.  
 Side-entrance Models, Wicker, £7. Coach-built, £9 10s.  
 2 Elegant Cane Models, Side-entrance, £10 10s.  
 All complete with Hutchinson or Michelin 26 x 2½ in. tube and tyre, and quick detachable joints.

—LIBERAL DISCOUNTS TO THE TRADE.—

# REY

**AND 173, GT. PORTLAND ST., LONDON, W.**



## ALL OUR SIDECARS ARE GUARANTEED 12 MONTHS



MODEL D DE LUXE,  
£6 5s.

MODEL C,  
with Cane Body, £7.



MODEL E,  
with Reversible and  
Detachable Child's Seat,  
£7 5s.

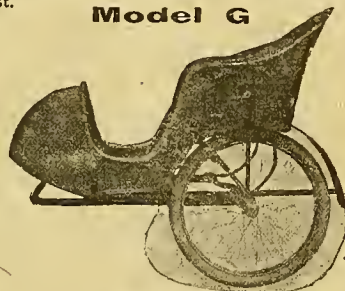
MODEL D,  
with Coach Built Body,  
£8.

## OUR REED CANE BODIES

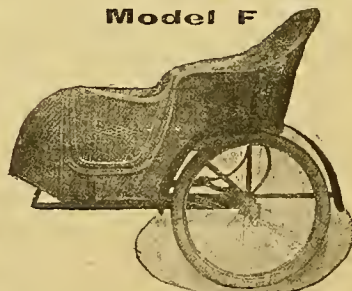
have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wickerwork, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

### Model G



£7 10s.  
Model F



£8 8s.

All our Sidecars are supplied  
Complete with Lamp, Foot Mat, Kick-up Stand,  
Quick Detachable Joints, Continental or Michelin  
Tyres, Round or Car Pattern Mudguard and  
CARRIAGE PAID. Send for List.

### MISCELLANEOUS BARGAINS.

Cowley Speedometer, done 100, perfect	£3 10
3 1/2 h.p. Rex Engine, like new	£4 0
New Rubber-studded Covers, 26 x 2 1/2, beaded	17/6
Small Tricar Radiator	5/-
Triumph pattern Handlebar, new	6/3
New Prested Accumulators	7/6
New Prested Trembler Coil	15/-
Lycett's "Top Tuke" Toolbags	7/-
New Screw-cutting Lathe, 4in. centres	£6 10

## Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,  
**HALIFAX** (Two minutes from G.P.O.)

Telephone 019.

## MOTOR BICYCLES FOR SALE.

QUADRANT Motor Cycle, 3 1/2 h.p., mag., spring forks, Cliecher tyres, stand, carrier, first-class order; bargain, £15/10.-12, Bull Ring, Birmingham. [X5314]

HUMBER Lightweight, 2 h.p., mag., Druid forks, Dunlop tyres, bargain, £15/10.-12, Bull Ring, Birmingham. [X5315]

LADY'S Motor Cycle, 2 1/2 h.p., mag., Druid spring forks, Dunlop tyres, 3 speeds; bargain, £15/10.-12, Bull Ring, Birmingham. [X5316]

SINGER Motor Cycle, 1912, 2 1/2 h.p., Dunlop tyres, spring forks, only little used, very fast; bargain, £26/10.-12, Bull Ring, Birmingham. [X5317]

SCOTT Motor Cycle, 4 h.p., two-cyl., free engine, 2 speeds, Brooks saddle, back rest, King of Road head light; bargain, £28.-Brown's, 12, Bull Ring, Birmingham. [X5320]

PREMIER, 1912 model, 3 1/2 h.p., shop-sealed only, free engine, Bosch water tight mag., spring forks, Dunlop tyres; makers' price £54/17, sell £59/10.-Brown's, 12, Bull Ring, Birmingham. [X5321]

ROYAL Enfield, brand new, 1912, 2 1/2 h.p. twin, free engine, 2 speeds, Dunlop tyres, chain drive; makers' price £52/10, bargain, £39/10.-Brown's, 12, Bull Ring, Birmingham. [X5322]

1911 Rex De Luxe, 3 1/2 h.p., free engine, 2 speeds, Bosch, Druids, B. and B., splendid condition; £30: take good push cycle part payment.-R. Crump, 120, Dalton Sq., Butts, Coventry. [X5288]

MOTOSACOCHE, 1911 (Dec.), 2 1/2 h.p., free engine, mag., Whittle, in perfect running order, plating, enamel, tyres very good, overhauled makers August £25.-Nichols, solicitor, Peterborough. [909]

1913 Triumphs, Matchless, Douglas, Hazlewood, New Hudson, Enfields, Rudge, Zeniths, Bradburys: get our prices before ordering; deliveries December; also cycle cars.-Clifford's Motories, Eastwood. [886]

2 1/2 h.p. Singer, new last August, fast, reliable, won silver medal in French trial, just being overhauled by makers; what offers? owner buying sidecar machine.-Bollack, 54, St. Patrick Rd., Coventry. [X509]

ROVER, June, 1912, 3 1/2 h.p., Sturmer-Archer 3-speed gear, only done 1,500 miles, owner leaving the district; what offers? appointment may be arranged.-Address, Box L339, The Motor Cycle Offices, 20, Tudor St., E.C. [0189]

1912 Model 2 1/2 h.p. Twin Humber (new at Whitson), Edler, Armstrongs 3-speed gear, 2 1/2 h.p. rear tyre, double footrests, belt guard, spare belt, lamp, horn, and spares, excellent condition; near offer to £31.-Geoffrey Smith, Dunelm, Northumberland Rd., Coventry. [0142]

BARGAIN.-Triumph, 1907 model, with 1911 cylinder and piston, 1912 improvements, new belt, Dunlop tyres, Triumph lamp and generator, Jones speedometer, T.T. and touring handlebars, spares and tools, in splendid running order; take £27/10, or near offer.-Box N/1, 1,435, The Motor Cycle Offices, Coventry. [0167]

PLASTOW, Grimsby, has for sale a 1912 Douglas Model G, brand new, £36; 1911 Douglas, Model K, £32/10; 1911 F.E. Triumph, £36; 1912 F.E. Triumph, £42; 1910 F.E. Triumph, £32; 1911 Premier lightweight, £21; 1910 twin Enfield, £18/10; 1911 Indian, 7 h.p., including new spare tyre, £42. [X5248]

BARGAINS in new machines.-I have managed to purchase a limited quantity of first-class shop-sealed, but otherwise new, machines at ridiculous prices. Now is your chance to secure one at equally astonishing prices. If you wait until the spring you will be unable to buy on anything like such terms. Do it now. Particulars of machines, new machines, cheap, absolute bargains. Blumfield, 4 h.p., Simms mag., B. and B. carburettor, Armstrong 3-speed, Dunlop tyres, price £40/10. Ilston-Smith, 2 1/2 h.p., Bosch mag., B. and B. carburettor, B.H.K. free engine clutch, Dunlop tyres, price £30/10. J.A.P., 4 h.p., Bosch mag., B. and B. carburettor, B.H.K. free engine, Dunlop tyres, price £35/10. J.A.P., 4 h.p., Bosch mag., B. and B. carburettor, fixed gear, Hotchkiss tyres, £32/10; also a few Bosch magnetos, price £3/10; and B. and B. carburettors, price 18/6. Write for any further particulars which you may require, or make an appointment.-D. Ashmore, 1, Newhall St., office 62, Birmingham. [0207]

### SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon and Bedford.

1913 3-speed Triumph, ditto Bradbury, and free engine Triumph, just in.-Triumph Agent, King's Lynn. [X5301]

DOUGLAS, 1913 model R, 2-speed, kick start: in stock, immediate delivery; £52.-Robinson's, Green St., Cambridge. [0239]

DOUGLAS, 1913, model P, T.T. model; immediate delivery; £48.-Sole Douglas agents, Robinson's, Green St., Cambridge. [0241]

TRIUMPH, 1911, free engine, new Kempshall back, engine and bearings first-class; £38.-Robinson's, Green St., Cambridge. [0242]

DOUGLAS, 1911, 2-speed, racing model, tyres and engine first-class; £36.-Robinson's, Green St., Cambridge. [0243]

1913 Clyno, 5-6 h.p., 3-speed gear, detachable wheels; £75; January delivery.-Sole district agents, Robinson's, Green St., Cambridge. [0244]

EARLY Deliveries of Triumphs, Matchless, Douglas, Enfields, Bradburys, B.S.A.'s, HUMBERS, PREMIERS, RUDGES, Humberettes.-Lambert, Thetford. [X5002]

## "IXION" says:-

"The MORGAN Chassis, weighing 2 1/2 cwt., with an 8 h.p. engine, has few rivals either in lightness, price, or general efficiency."

WE CAN GIVE EARLY DELIVERIES

Price 85 guineas.

EXCHANGES QUOTED.

## 1913 A. J. S., New Hudsons, Swift Cycle Cars

EXCHANGES QUOTED.

### THIS WEEK'S BARGAINS.

Brand new 1912 2-speed B.S.A.	£18
1912 3 1/2 h.p. NEW HUDSON, 3 speeds	£45
1912 3 1/2 h.p. RUDGE MULTI	£45
1912 3 1/2 h.p. REX, vertical, M.O.V., good	£14
3 1/2 h.p. PREMIER, 2 speeds, new	£46
1 1/2 h.p. N.S.U., 2 speeds, Bosch, Druids	£24
1912 6 h.p. REX DE LUXE, 2 speeds, chain drive	£45
1910 5-6 h.p. REX DE LUXE, 2 speeds, M.O.V.	£30
1912 3 1/2 h.p. NEW HUDSON, 4 speeds, new	£46
1913 3 1/2 h.p. PREMIER, 3 speeds, new	£46
1910 SCOTT, a beauty	£32
4 h.p. 1911 QUADRANT, Roc 2 speeds	£15
3 1/2 h.p. WOLF, magneto	£32
1911 Lady's HOBART, Armstrong 3-speed	£32
3 h.p. TRIUMPH, vertical, M.O.V., good	£15
3 1/2 h.p. 1907 TRIUMPH, extra good	£25
3 1/2 h.p. 1910 TRIUMPH, very fine	£30
3 1/2 h.p. 1910 TRIUMPH, clutch model	£35

### SINGLE-CYLINDER REXES.

3 1/2 h.p. 1908 Tourist, 1909 engine	£23
3 1/2 h.p. 1909 Speed King, extra fine	£23
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17
3 1/2 h.p. 1910, fine gear	£25

### TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£20
5-6 h.p. Bosch, Lloyd's variable gear	£22
5-6 h.p. De Luxe, 1908, 2-speed model	£25
1910 5-6 h.p. Rex de Luxe, 2-speed	£30

### SIDECAR COMBINATIONS.

Brand new 3 1/2 h.p. 2-speed PREMIER, and new 10 guineas sidecar	£55
5-6 h.p. 2-speed REX and sidecar	£30
1910 5-6 h.p. REX, 2-speed and sidecar	£35

## £5 DOWN SECURES ANY OF THESE.

BALANCE 30/- MONTH.	
3 1/2 h.p. REX, M.O.V., spring forks	£14
3 h.p. 1908 REX, Bosch magneto	£17
5 h.p. Twin REX, spring forks, h-b. control	£16 10
WOLF Lightweight, magneto, 26in. wheels	£15
1 1/2 h.p. WOLF Tricar, 2 speeds	£19
Discount for Cash down.	

## MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker. Two styles to choose from.

PRICE 32/6 EACH.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

### MISCELLANEOUS BARGAINS.

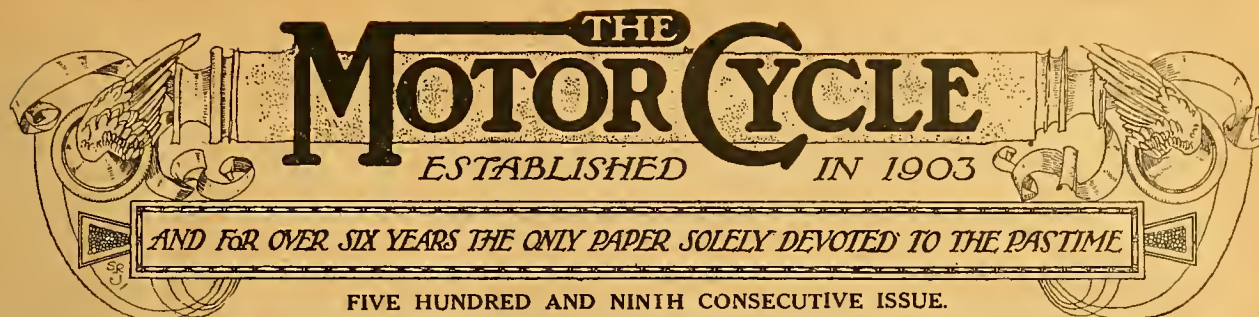
Cycle Car Clutch, leather to metal	12/6
Loop Frame, with forks	15/-
Cowley Speedometer, done 5,000	£3 0
New Lycett's Saddle, large size	9/6
F.R.S. Headlight, new	25/-
1912 B. and B. Carburettors, vary jets	27/-
1912 Sausage Carburettors	28/6
Sidecar Aprons, green or red, with studs	7/6
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### Cut-outs on Motor Cycles.

**C**ORRESPONDENCE and queries published in the last two or three issues have led us to think that many motor cyclists are becoming unduly nervous regarding the Local Government Board regulation concerning the use of cut-outs on motor cycles. Some readers appear to imagine that they will be called on to discard their present silencers, others think a long exhaust pipe, in addition to a silencer or expansion chamber, will be compulsory, and very few apparently have read the wording of the order in such manner as to interpret it correctly. With a view to clearing the air on the subject we repeat the wording of the order, which is as follows :

"(7.) he shall not use any cut-out, fitting, or other apparatus or device, which will allow the exhaust gases from the engine of the motor car to escape into the atmosphere without first passing through a silencer, expansion chamber, or other contrivance, suitable and sufficient for reducing as far as may reasonably be practicable the noise which would otherwise be caused by the escape of the said gases."

The fact that the order distinctly states that the exhaust gas must first pass through a silencer or expansion chamber should be sufficient to satisfy anyone that he will not have to discard an existing silencer provided it is suitable and sufficient.

There are many motor cycles in use with an arrangement fitted to the end of the silencer by which the engine can be made more silent by closing some of the holes in the expansion chamber, but if these holes were left open permanently it could not be very well argued that the Order was being disobeyed, because the gas in this case would first pass through the silencer. Provided no undue amount of noise were made with this arrangement in use, we do not see how it would be possible to proceed against the rider for using a cut-out.

Motor cycles fitted with a long exhaust pipe and no expansion chamber will be an infringement of the Order, and machines so designed will have to be altered. The Order prohibits the use of such an apparatus, because it allows the exhaust gas to escape into the atmosphere without passing through an expansion chamber, which must be obviously larger in cross area than the exhaust pipe. An exhaust pipe flattened at the end with or without a cut-out at any point in its length will be contrary to the regulation.

The Local Government Board Order is doubtless the first step in legislation towards a reduction in the noise made by motor cycles, and motor cyclists would be well advised to accept the intimation as one which may become more drastic if not taken notice of. There are many very noisy motor cycles in use, and some riders do not make the slightest attempt to reduce noise; on the contrary, by riding on the public roads machines fitted with engines which have been obviously designed for racing purposes, they draw the attention of the Legislature, which is apt to think that, because a minority of riders are careless in this direction, the majority are also offenders.

Once again we would point out that the Order, which will become law on March 1st, is unnecessary, because the authorities have now, and have always had, their remedy, viz., they could summon under common law any rider of a motor cycle or car whose engine, by reason of its noise, became a nuisance.

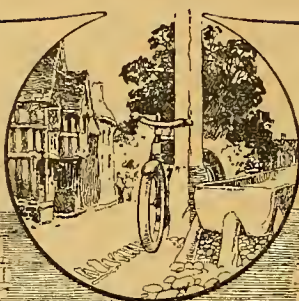
### Running Costs.

**W**E are again being queried regarding the running costs of motor cycles, sidecars, and cycle cars, and there is little doubt that prospective purchasers have been misinformed on this subject by articles in the daily press. Very incorrect statements have been published respecting the running costs of cycle cars. We noticed one daily paper stated recently that cycle cars, meaning four-wheelers up to 7 cwt. and two passengers, could be run for a fraction over a penny per mile. We trust our readers will not be misled by such absurdities as this. It costs, on our own readers' statistics, many of which were published early this year, about a penny per mile to run a 3½ h.p. motor bicycle solo. The average sidecar combination costs for the same distance about 1½d. per mile; how, therefore, is it possible to run a machine of double the weight, and in most cases of greater horse-power at the same cost? Articles in the daily press regarding such matters may be read with the same credulity as statements respecting the motor bicycle in 1905-6. According to the daily press, at that time the motor cycle trade was a dead or dying industry, and not likely to be resuscitated.

We only wish it were possible to reduce running costs to the low margin indicated by the contributors to some of the daily papers, but unfortunately, from our own experiences extending over many hundreds of miles, we know it is not so at the present time.



# THE MOTOR CYCLIST



# AND THE TRAMP.

ONE of the keenest and smartest motor cyclists in the North of England (the fact that he is as modest as he is good at winning prizes necessitates him remaining anonymous) is known to his intimates as "The Tramp's Pal," a title which is understandable when the number of "lifts" he has given to the occasional rather than the habitual frequenter of the road is taken into account.

Until promotion found him a permanent home, this motorist had to make frequent business journeys between London and Manchester. Unless the weather was very bad, the trips were made on his motor cycle, and as he generally had a sidecar attached the idea occurred to him one day to seek original company. From the day the thought was put into execution until the time arrived for the discontinuance of the journeys, the cyclist never afterwards found a ride monotonous, and it can pretty safely be assumed that those he picked up do not belong to that section who regard motorists in general as selfish.

## The Passengers.

The company he sought was not of his own class, nor was it of the recognised "gentleman of the road" genus. So far as possible, those who were invited to occupy his sidecar seat were irregular tramps, men who were really looking for work and whose means prevented them travelling by any other method than that of the oldest and slowest, namely, "Shanks's Pony." At first he found it difficult to differentiate, but after awhile he became wise. One thing the traveller quickly learnt is that the genuine victim of hard times was reluctant to tell his story. He was willing to reveal it if he found a sympathetic listener, but he did not parade his misfortunes like the "regular."

## Gratitude.

In the majority of cases the motorist never heard anything more of the men he picked up, and a word of thanks at the end of the "lift" ended the casual acquaintanceship. But there were occasions when the thanks took a much more practical shape. One wet night he was driving his machine through a village just outside London when he caught sight of an unhappy-looking individual tramping along through the rain. A query showed that this man had just set out to walk to Liverpool, where he knew he could get work. His was a perfectly genuine case of hard luck. On the long journey he explained that he had been employed as a groom in a big London house, but the advent of motors had thrown him out of a job, and his little savings had disappeared before he could find fresh employment.

The rain was so heavy and the night so dark that the motorist decided to put up for a few hours, and, giving the groom a shilling or two to find himself a bed and some food, he put the machine away in a very muddy state and himself retired. In the morning he found the man waiting for him, standing by the sidecar, which was dazzling in its spick and span appearance. Instead of going to bed the groom had invested a part of the money he had been given in candles and metal polish and had spent the hours in polishing the vehicle until it looked like new. It was all he could do to show his gratitude.

Other instances of a somewhat similar nature come to mind. Once a man of over seventy was helped. He had had a hard fight with fate in London, and had eventually to give up the contest. His son owned a little home in the country, and the old man had been asked to come down and spend the evening of his days with him. The son, apparently, had not thought his dad was not even able to raise the train fare, and the old man was quite concerned about having to confess that he had been forced to walk. The home he was making for was a few miles off the motorist's track, but he dropped the father at the son's door, and was well repaid by the gratitude of both men, the younger one quickly appreciating the position.

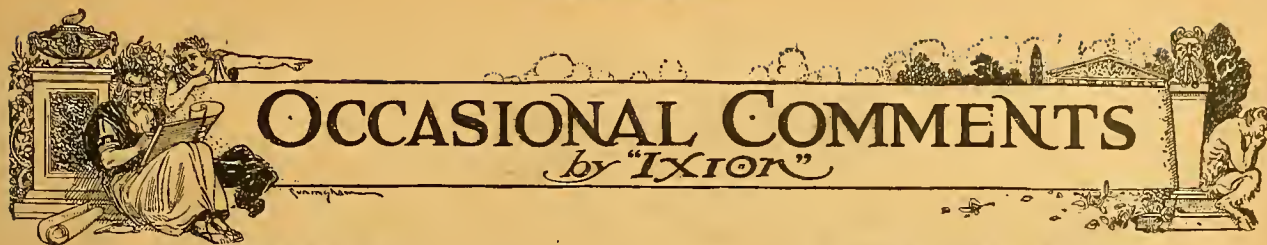
## Jack Ashore.

Then there was a sailor who had missed his boat at Liverpool. The vessel had gone round to Bristol to load, and the sailor, without the means to take him, found himself faced with the probability of losing a situation he had held for many years. So he had set off to walk, but his pace would have been quite inadequate to take him to his destination in time. A "lift" of some sixty or seventy miles, however, made all the difference, and "Jack" was put down again with every certainty of catching his boat and keeping his job.

As has been indicated, "regulars" were picked up sometimes, but only once was the "passenger" carried after the discovery was made. Then he was such an entertaining character that the driver could not find the heart to drop him. He kept up a running commentary on the machine and the passers-by which was genuinely funny, and eventually he called "stop" outside a large building in a town through which they were running. This, he explained, was his country home—he preferred it to his other "seats" because they did not insist on washing him directly he got inside.

Sidecar drivers with a seat to spare may easily obtain entertaining company in this way. B.P.





### Transmissions.

Several correspondents have written to criticise my suggestion that an enclosed shaft might be tried as the primary item of a two-step drive. I would remind them that I have only asked for experiments to be made—I did not pretend to guarantee their success; so I noted with interest the combined shaft and chain drive of the Diamond lightweight at Olympia.

The main defect of the primary-shaft is the difficulty of avoiding two right-angled gears (worm or bevel), running at high speed, and subjected to all the shocks of the engine; for, though a small engine can easily be set with shaft longitudinal, it is no easy matter to set a  $3\frac{1}{2}$  h.p. single in this position.

Perhaps smallish *monobloc* vertical twins would come into vogue if the shaft drive were largely adopted. The main advantages of the shaft are its neatness when enclosed, and its freedom from constant and irritating adjustments. However, there is room for experiment, and I doubt whether any of the existing transmissions can be regarded as ideal.

Motor cycling stands to-day just about where pedal cycling stood when Society dames spent £25 on a roadster, and ambled gently about the London parks at fashionable hours, *i.e.*, it is a pursuit appealing to a section of the community, largely as a recreation or a hobby. Its big day is coming, for it is rapidly passing into a general means of locomotion.

When it is fully established as the best method of making necessary journeys, there will be a much fiercer demand for a no-trouble transmission than we have heard yet; and such a transmission is bound to come. The single belt can never fill this bill. Uncased, it gets filthy, and needs adjustment; wholly encased, the huge case would be hideous. The choice will, therefore, lie between wholly encased rigid drives, or a rigid-cum-belt drive, with the rigid item encased.

Against the encased chain we must set the disappearance of chain drive from car design, the unpopularity of gear cases on push bicycles, and the ugliness of the big chain cases staged at Olympia. We must note, however, that the possibilities of chain drive have not been exhausted; nobody has marketed a wide silent chain running over sprockets of small diameter, inside a cast aluminium extension of the crank case, which should also house the gear box; this would maintain alignment, and permit of ready adjustment.

The bulky and cumbrous appearance inherent in these designs makes the notion of a slender encased shaft very attractive, and the newest steels are so excellent that the weight formerly associated with such drives may soon cease to be necessary.

Last week I was contrasting the first speed gear wheel off a 1901 Panhard car with the parallel "B.N.D." steel wheel from a 1912 Grand Prix racer; if metallurgy advances at its present rate, we may eventually see motor cycles driven by shafts little thicker than a modern speedometer transmission.

### Mounting of Gear Boxes.

Among the items which attracted my attention at the Show none was more pronounced than the mounting of counter-shaft gear boxes. I should guess that insecure mountings are responsible for some of the complaints one hears about chains requiring very frequent adjustment.

When a gear box is subjected to a fierce cross strain (owing to the drive entering at one side and leaving at the other), a light steel plate, gripped by a couple of nuts, is scarcely sufficient anchorage, and increased attention will certainly be given to this point in the next twelve months.

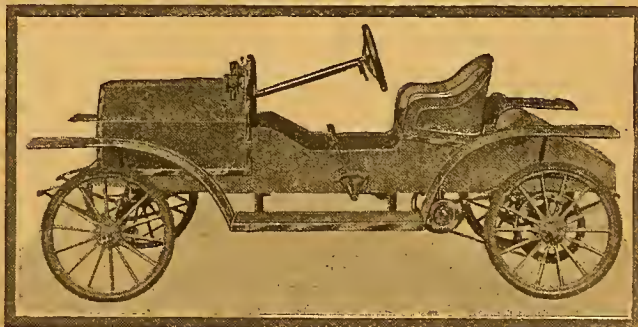
At the moment I certainly consider that the lug and eccentric mounting is preferable, though this may often require a pair of extra stay tubes when there is a cross strain introduced.

### Handle-bar Magneto Controls.

Bowden Wire, Ltd., inform me that in their testings they have never had the telescopic tube of a magneto control jam, and that such apparent defects have always been due to the timing lever ring being so tight a fit on the magneto that the entrance of grit makes it stick.

Doubtless this is often the case. I am not aware who are the actual manufacturers of the two magneto controls I used for the best part of my mileage during 1911 and 1912, but I know that they were apt to jam, and that the injection of oil into the sliding barrel portion usually freed the control.

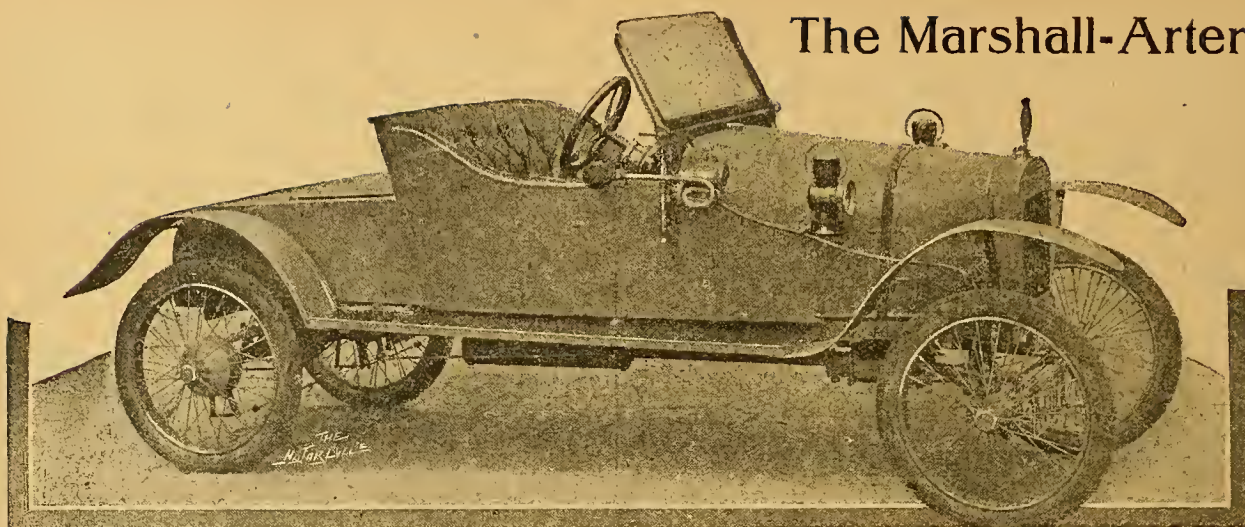
I met a very profane individual this summer—a novice, of course—who had actually retired in an important trial solely for this reason. His machine suddenly ceased to develop any real power, and he could not climb the hills. After wasting twenty-four hours in taking his engine to pieces, he found that his ignition control had jammed after a temporary retard, and that he was permanently running on fully retarded ignition. A spot of oil and a blow from a spanner restored full power in ten seconds!



"The Niagara Motor Bob," an American boy's motor, made at Niagara Falls. It has a 3 h.p. air-cooled four-cycle engine and the transmission is by belt throughout. The wheels are 22in. with wood spokes and solid rubber tyres. The line of demarcation between motor cars and cycle cars is difficult to draw. Should this vehicle be classed as a cycle car or a motor car?



## The Marshall-Arter.



**T**HIS cycle car is the production of a long-established engineering firm, Messrs. Marshall, Arter and Co., Beaver Lane, Hammersmith, W. The engine is an 8 h.p. J.A.P. with crankshaft set longitudinally and water-cooled by thermo-syphon system, each cylinder having a separate delivery pipe to the radiator.

The radiator is of the multi-tubular type, and is so efficient that up to the present a fan has not been needed. Our illustration shows the engine arrangement, the J.A.P. automatic carburetter, and the water-proof Bosch magneto, which is chain-driven. The oil tank is also visible; this contains five pints, and from it the lubricant is fed to the engine by crank case suction through a J.A.P. sight-feed lubricator.

The simple form of carburetter control by means of an accelerator pedal acting directly on a lever connected to the throttle spindle by means of a ball-jointed rod can also be seen. The cone clutch is of the leather to metal type with springs underneath the leather; the clutch is not only effective but very sweet

in action. A spring drive is provided by connecting the clutch and propeller-shafts by a bar of spring steel 30in. long,  $1\frac{1}{2}$ in. deep by  $\frac{1}{4}$ in. thick. This runs in a tube with pieces of wood each side situated midway therein to ensure a central position being maintained. The tube is provided with spherical ends, which allow of just sufficient movement to prevent binding. The final drive is by an enclosed propeller-shaft, the forward end of which is provided with a universal joint and runs in ball bearings. The back axle is excellently designed, and incorporates a two-speed and reverse gear box.

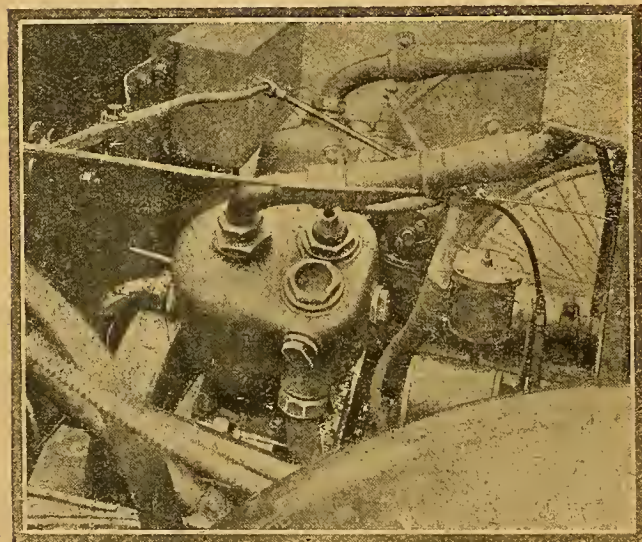
The change speed gear, its counter-shaft, the differential, and the bevel gear transmission are all contained in a box surrounding and forming part of the back axle. The low gear change is effected by sliding the gear wheels; the top gear is engaged by means of positive dog clutches. One illustration shows the cover removed, exposing the gears and differential.

The ends of the rear axle casing are steel castings. Both foot and hand brakes are of the internal expanding type acting on the rear wheel drums and situated side by side. The frame is of ash strengthened by fitch plates and by two steel transverse members, one of which acts as an anchorage for the forward ends of the back springs, while both serve to support the running boards. The chassis is suspended fore and aft on quarter elliptical springs.

The change speed lever engages the low gear when pushed forward and the top gear when pulled back. No quadrant nor gate is provided, the gears being kept in engagement by means of spring bolts acting on the striking rod inside the gear box. The reverse is put into action by means of a separate lever. The front axle is tubular, and the steering is by quadrant and bevel. Wire wheels with straight headed spokes are fitted.

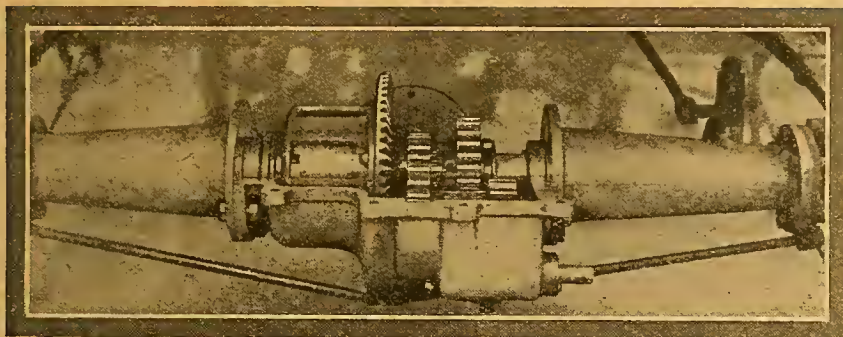
The body is of ample width, and can be fitted with a dickey seat behind if required. On the whole, the Marshall-Arter cycle car impressed us most favourably; the body design is pleasing, and throughout the vehicle is built on sensible lines.

Mr. Ernest Arter took us for an extended drive in the London district, which included some rough roads



V-type water-cooled engine of the Marshall-Arter.





The Marshall-Arter two-speed gear box and back axle unit.

## NEW 500 c.c. TWIN HORIZONTAL ENGINE.

THE firm responsible for the cylinders and parts fitted to the Douglas motor bicycle referred to in the article describing S. L. Bailey's new records (the All British Engine Co.) are putting on the market shortly a new high speed lightweight motor cycle engine. This is of the two-cylinder horizontally opposed type cylinders 68 mm. bore  $\times$  68 mm. stroke = 494 c.c., and thus it will be within the 500 c.c. class. The design of the cylinders, pistons, connecting rods, valves, etc., is similar to that used on the A.B.C. aero engine, and also on the record breaking Douglas, the overhead valves being  $1\frac{1}{2}$  in. diameter. Three connecting rods and a three-throw crank are used, one connecting rod to the centre crank pin going to one cylinder, and the side connecting rods on the other crank pins going to the other cylinder. An out-

side flywheel is used. The arrangement of the connecting rods and the centre lining of the engine is such that absolute balance is claimed, and it is for this reason that the extremely high speed is obtainable. The engine is designed to give its maximum power at 4,000 r.p.m. The cylinders are slightly offset from the crankshaft. The engine has only four bearings, two for the crankshaft and two for the camshaft, and splash lubrication is employed. The standard pistons weigh only nine ounces. The engine will be about 50% lighter than the usual motor cycle engine of the 500 c.c. capacity, and has been so arranged that it will be possible to fit it to most frames without much alteration. Special high grade steels are very largely used in its construction. A slightly larger engine for cycle car work is also to be introduced later.

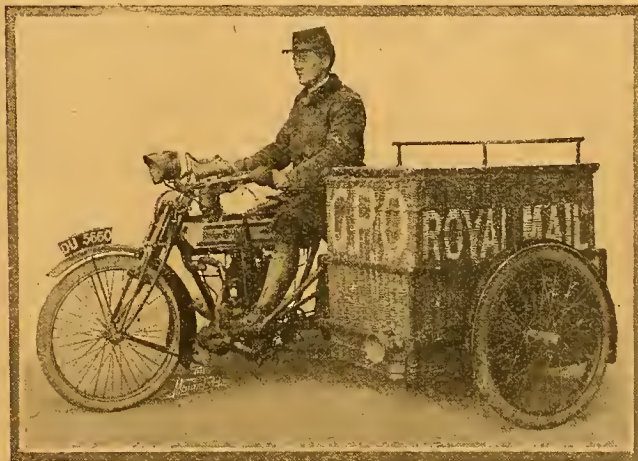
## ACCESSIBILITY.

Now that the reliability of motor cycles is firmly established, and the general design of the machines is settling down more or less into well-established lines, it would be well if manufacturers would give more attention to accessibility. Of course, the first task was to make the machines as reliable as possible, so that it might be unnecessary to take an engine down except on rare occasions, but in spite of the Cycleclean process for getting rid of carbon deposit and other labour-saving devices it is still desirable to be able to remove the cylinders occasionally, and in the case of many engines (small twins especially) this is a longish job on account of inaccessibility of the nuts and other fittings. It is often impossible to get at these with anything but a punch and hammer, which is a rough and ready method, and the position of the exhaust lifter sometimes makes it more difficult still. I have mentioned small twin engines as being most to blame, but it is only fair to mention that after a tour of Olympia it was upon a small twin that this subject seemed to have been most carefully considered, for both cylinders could be removed from the new 3 h.p. Enfield when three nuts had been taken off.

The detachable wheels adopted on the Clyno and Lea-Francis are a very great advance, for they enable the wheels to be taken out in a few seconds for tyre changing purposes, thus making butt-ended tubes quite unnecessary, and that without disturbing the brakes, transmission, or the hub bearings. Contrast

this with the old method of removing first the belt or chain, then the brake mechanism, and lastly (on some machines) having to take off a mudguard stay before the wheel could be got out between the mudguard and the stand.

AURIGA.



## THE SIDECAR IN THE POSTAL SERVICE.

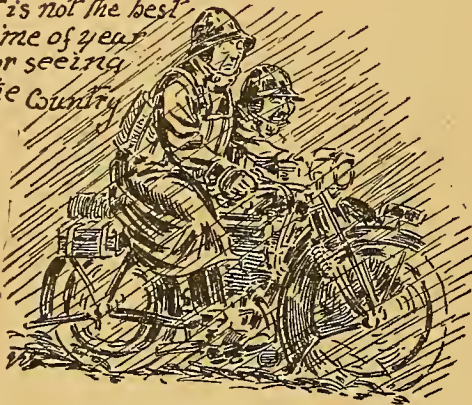
A  $3\frac{1}{2}$  h.p. Rudge Multi recently adopted for the delivery and collection of letters by the Coventry Post Office, in the district of 'arley. Motor cycles have been used by the Coventry Postal authorities for over a year, and the experiment has proved a great success. The service may be considerably extended at any time.



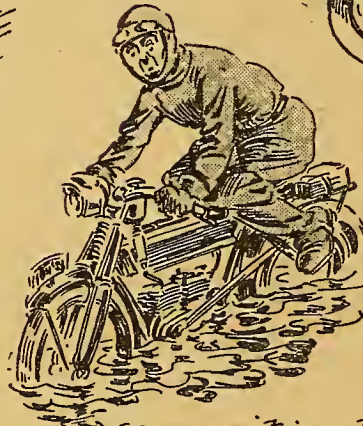
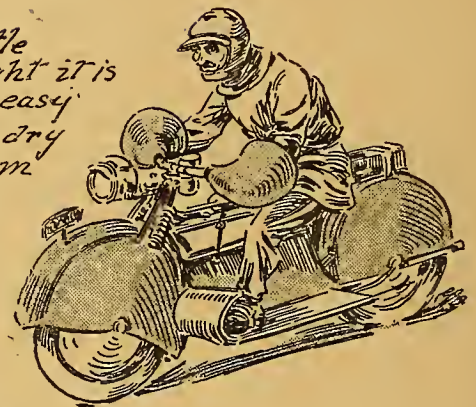
# THE CHRISTMAS

AS THEY USUALLY ARE,

*It is not the best  
time of year  
for seeing  
the Country*



*With a little  
forethought it is  
perfectly easy  
to keep dry  
& warm*



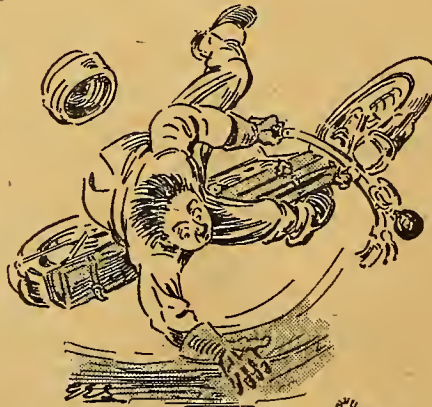
*Of course it is not  
always wet overhead.*



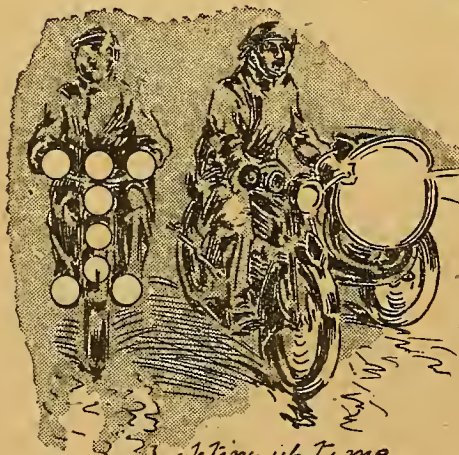
*Give us a  
cigarette, old man.  
Certainly if you  
tell me the time.*



*One of  
the riders. The same,  
ready to start.*



*The roads  
are a bit  
treacherous.*



*Lighting up time.*



*Appearances are often deceitful?*



# MOTOR CYCLE TRIALS.

—AND AS THEY MIGHT BE.



Sorry Sir I thought  
it was only a cap  
It's alright, I'm on  
a motor bike ..

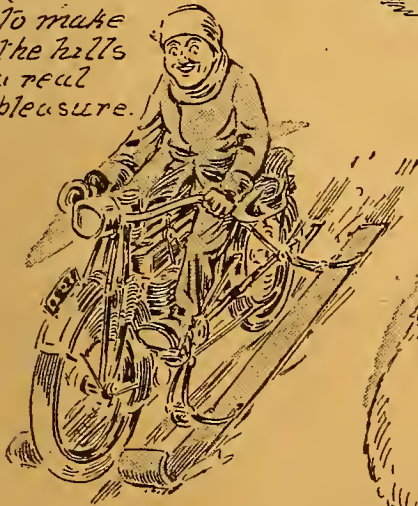


Stick to it old chap, we're not  
doing so bad, considerin'

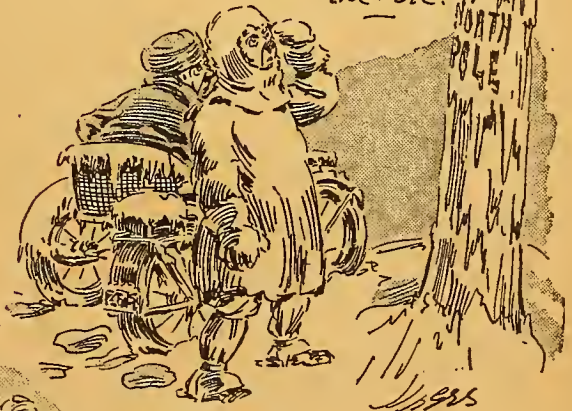
An unintentional  
embrace.



An idea  
to make  
the hills  
a real  
pleasure.



We've lost our way  
old man, but we've found  
the Pole.



Why  
one rider  
was  
late.



I wish I'd  
brought my  
sweat/plotter



Don't you worry Sir,  
me and my mate here  
will get you out  
in a few hours, bicycle an' all.

Respectfully



## New Records with Steel Cylinders.

Kilometre and Mile Class B Records Broken. Over 72 m.p.h. on a 2½ h.p.

SOME few days ago, by the courtesy of Mr. Granville E. Bradshaw, of the All British (Engine) Co., Weybridge, Surrey, we examined the Douglas motor bicycle with A.B.C. steel cylinders with which S. L. Bailey afterwards broke the kilometre and mile Class B records (350 c.c.) on the 17th inst.

By way of preface, it should be remarked that the All British (Engine) Co. are very well known for their aeroplane engines, which are remarkable for their exceptionally clever design and the skilful use of materials of the very highest grade, points which in connection with aeroplane engine work are of paramount importance, since the aeroplane engine is called upon to perform a duty vastly heavier than in almost any other branch of petrol engine work. The success of this engine may be gathered from the fact that it is the present holder of the duration flying-record, having remained in the air for 8½ hours.

The All British (Engine) Co. are at the present time experimenting with an entirely new type of aeroplane engine. This is extremely light for its power, by reason of the fact that its normal speed of revolutions is 4,200, the bore and stroke being a trifle more than those of the 350 c.c. motor cycle engine.

### Details of the Record-breaking Douglas.

At Bailey's request, Mr. Bradshaw designed and made the cylinders, valves, pistons, and connecting rods of an exactly similar type to those to be used in the new aeroplane engine, and it was with these that the Douglas motor bicycle was fitted, experimentally, when the above records were broken.

The cylinders are of steel, the bore and stroke being 60.9 × 60 mm. = 350 c.c. The valves are placed in the cylinder heads, and are operated by tappet rods and rocker arms, the tappet rods being arranged to fit the standard Douglas timing gear box. A cast iron piston with one ring is used, and a steel connecting rod. The big and small end bearings are placed centrally on the connecting rod so that there is no overhang, and the cylinders are not therefore set out of centre, but they are offset from the crankshaft.

At the time when we first saw this engine it had just been erected and taken out on the track with its cylinders "in a bag," so to speak, and an attempt was made on the record. This, however, was frustrated by a plug misfiring just before the finish, but an astonishingly high speed was attained. The compression used at this time was not far short of 100 lbs. per square inch, and as this was thought to be too high, plates were fitted between the cylinders and crank case so that it was reduced to 80 lbs. per square inch. It was just after this alteration had been made that we saw the machine again, and were present during its trials on the stand.

After a little trouble with the magneto, the engine started and ran up to a terrific speed. Of separate explosions one could hear nothing at all, the noise of the engine being merely a continuous note, and, in fact, one could only tell alterations in speed by the alteration in the pitch of the note.

The only tachometer that was handy registered up to 4,000 r.p.m., and this was put on to the engine-

shaft, but, of course, it was found that it would not register high enough. During the next attempt we tried it on the counter-shaft, which was running at approximately two-thirds the engine speed. The tachometer needle went up to its 4,000 stop and stayed there, so that the engine must have been turning round at something like 6,000 r.p.m. Its maximum speed has since been found to be 6,500. It develops about 13 h.p., and the power curve rises evenly up to the 5,000 r.p.m. point.

A successful attempt was made on the records on the 17th inst. at Brooklands, Messrs. A. V. Ebbelwhite and A. G. Reynolds timing.

### Details of Records.

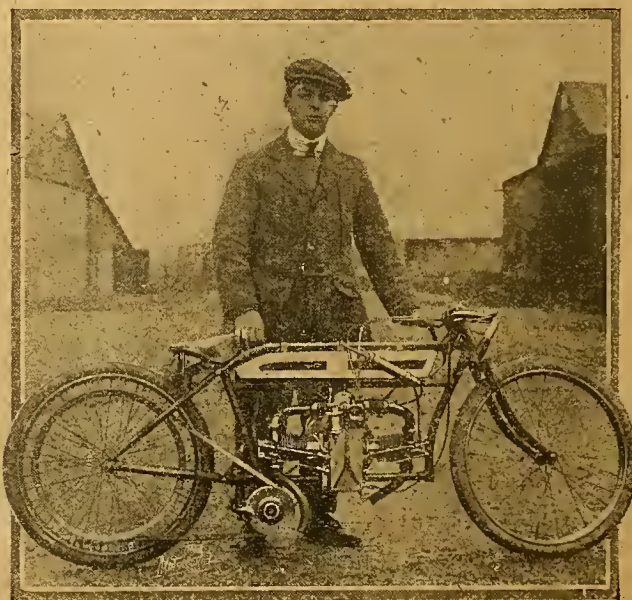
Flying kilo. ...	...	...	30.8s. = 72.63 m.p.h.
" mile ...	...	...	51.4s. = 70.04 "

### PREVIOUS BEST.

Flying kilo. ...	32.76s. = 68.23,	Martin (Martin-Jap, 85½ × 60)
" mile ...	53.03s. = 67.85,	" "

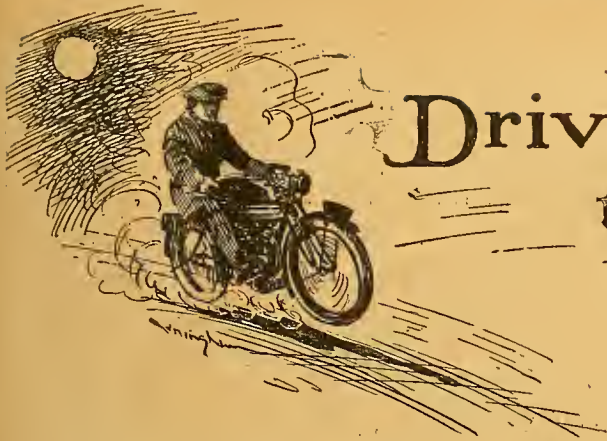
In the mile test Bailey would certainly have equalled, and might even have bettered, his kilometre speed with better luck. On the occasion of his first attempt, when his speed was 70.04 m.p.h., he took insufficient start to really get his engine turning over, with the result that the maximum speed was only attained in the last quarter-mile. On his second attempt the speed fell to 67.67 m.p.h., owing to the screws holding the carburettor coming loose and so causing the engine to misfire. He was about 300 yards from the finish at the time, and from appearances, judging by the continuous hum of his engine, Bailey was travelling even better than on his kilometre trial. In the third and last attempt a plug blew to pieces near the finish.

The actual speed has been estimated at 76 miles per hour. This might have been realised in another attempt, but the porcelain particles in the cylinder had to be cleared away.



The Douglas, with steel cylinders and overhead valves, ridden by S. L. Bailey.





# Driving to Save a Life.

**"H**OW comfortable I feel! How thoroughly tired! To-day I have covered a hundred and forty miles on my motor bike, over dry, frozen roads. It has been a fine ride, but not without incident. That carburetter fire! I can't make it out. Now, let me think: whatever could have caused it? Too much air? Blow back? Something wrong with the inlet valve? Or—oh, bother! I'm too tired now; I'll puzzle it out to-morrow!"

Such were my thoughts as I lay in bed. I had come to spend the week-end with my old friend Brett and his wife. Brett is a doctor with a good practice, and lives at the little village of Dippingdon. He has quite a nice house and seems to have a good time. I had arrived cold and hungry, and, after dinner, when we had settled down before a blazing fire in the drawing-room, I had actually almost fallen asleep. I simply could not help it.

## Motor Cycling as a Cure for Insomnia.

Of course I apologised, and Brett kindly laughed it off, saying he would have to prescribe motor cycling for insomnia, in future. Later on I had livened up, the sleepiness having passed off, and we had eventually retired to bed quite late.

\* \* \* \* \*

Almost asleep, I was yet puzzling my head about that carburetter fire. It had ignited while I was descending a hill with the exhaust valve lifted. I had felt a strange warmth arising, then a smell of scorching rubber—my overalls—and then, glancing downwards, I had caught sight of the carburetter ablaze! Pulling up sharp, and turning off the petrol tap, I had let the petrol burn itself out of the carburetter, and, by leaning the machine over, had prevented the flames from playing very much on the tank. And so no real damage had been done. In fact, the machine ran as well as ever immediately afterwards.

But that smell of burning still haunted me. I lived through the incident again and again in my thoughts, and cudgelled my brain for an explanation of the accident.

Carburetter must have been flooding—hot exhaust pipe—no, couldn't be that, exhaust pipe right away from carburetter—inlet valve stuck, ignited back along the pipe—no, inlet valve mechanical, couldn't stick—must have been a stray spark set alight—alight to—ali' to—carbret—carb—oblivion!

\* \* \* \* \*

That smell of burning!

It filled my dreams! Dreams of the ride, down hill, round corners, up hill, past cottages and signposts, a road to the left, a long descent, strange heat, smell of burning, flames!

## I Awoke with a Start!

"Confound that carburetter! I shall always feel uneasy whenever I ride the machine again. I can't get the incident off my mind. Suppose I've ridden a bit too far and am over-tired."

And so to sleep again, and to dream the same thing over once more.

That smell of burning!

I was sitting up in bed!

A burning, smouldering odour!

"It is —, it is a real smell! Not my fancy. Something is burning!"

My heart stopped momentarily! Was the house on fire?

Useless question! Get up and see.

Plucking up courage I hastily donned a jacket, and, opening the bedroom door, peeped into the passage.

Burning!

"Yes, something is alight! The odour is quite distinct!"



"Hark! Is that the snap and crackle of burning wood?"



**Driving to Save a Life.—**

Should I awaken the sleepers? Raise the alarm? Shout "Fire! Fire!" at the top of my voice?

No, fool! Trace the smell. Find out where it's coming from.

Hark! Is that the snap and crackle of burning wood? Can't say. My imagination probably. How dark it is! Get a candle. Go downstairs.

"Downstairs in the hall the dreadful smell was stronger. I grasped the handle of the drawing-room door, and gasped with pain!

**Goodness! It's Hot!**

I snatched my hand away. I saw smoke coming from under the door, and the varnish on the door all blistered.

And then I knew a devouring fire was raging in that room. Keep it there! Don't open the door! Don't let the fire spread!

Upstairs I flew and rattled hard at Brett's bedroom door. No answer! Both he and his wife were fast asleep. I tried the door. It yielded. Without ceremony I entered, and, going to Brett's bed, shook him.

"Wake up! Wake up! I want you!"

Brett awoke.

"Margaret worse?" he asked. Margaret, his only child, lay seriously ill in bed, and a hospital nurse attended her.

"No, just come outside, will you? Quick!"

Brett sprang out of bed, and followed me out of the room.

I explained everything hurriedly. Brett was calmness itself.

"Explanations and thanks afterwards, old man," he said, "now is the time for action. We must be ready to leave the house. But poor Margaret! She must not be moved, unless we can possibly help it. Removal will kill her! She can't stand it. But, of course, if the fire spreads, she must be got out. But I know it will kill her! I only pray that the fire can be stopped in time. The drawing room door must be kept shut. I will arouse the rest. You run round to the Post Office, knock them up, and get them to telegraph to the fire brigade."

**A Mad Race for the Fire Brigade.**

Round to the Post Office I rushed. Just as I was. Pyjamas, jacket, slippers. In my excitement, I felt no cold! It took some minutes to awaken the postmaster. At last he came, wondering at the furious knocking.

"What's wrong?" said he.

"Mr. Brett's house is on fire! Please telegraph for the fire brigade."

"Good gracious!" cried he. "I'll try. But I doubt if there's anyone at the other end."

The postmaster rushed to the instrument, and began rap—rap—rapping.

But he rapped in vain for some minutes.

"I'll keep on trying," he said, "but I'm afraid there is no one there to receive the message. You had better send a man in on a horse."

"Where is the fire station?" I asked.

"Marketown. Six miles of hilly road!"

I dashed madly back to the house. "Six miles! I might do it in ten minutes—over forty miles an hour in places—moon has risen—won't trouble about a lamp—hope to get the fire-engine here in three-quarters of an hour!"

The house was now all astir. People were about. The fire could be heard crackling in the drawing room. The floor above was hot, and likely soon to catch!

I quickly detailed the result of my visit to the telegraph office, and explained that I was off to Marketown on my motor bike.

"Drive like mad," cried Brett, "and fetch them here to save the house. If they save the house, they save my daughter! If I move her, I kill her!"

There were helpers now, but little water. All they could do was to keep the drawing-room door and also the floor of the room above the drawing-room constantly splashed with pailsful of water. Thus they hoped for a time to keep the fire from breaking through.

Now I am on the road, a little better clothed, but

chilly enough. Heading for Marketown. Driving for a life! Willingly the engine pulled, with cut-out open and throttle wide, and carburettor feeding all the gas the pipe could pass. Greedily the engine sucked the petrol vapour in and wondrously transformed it into power to drive the wheel. Busily clicked the valves, nor failed to shut and open wide at their appointed times. The failure of one little part would mean a dear one lost! The hill-top reached, a flat stretch of road stretched out before me. And now the pace grows fierce, and fiercer yet! The engine roars, the right air whistles past my ears. A bumpy road just here, and, farther on I know, a patch of new laid metal lies to try my steed still more. But what's the use of slackening? I'll take it at this pace, and fly above the stones! I'm mad with speed! It's fifty—fifty miles an hour! How goes the fire behind me? Are they keeping down the flames? They're waiting anxiously enough for me, I know, with news that help is on the way. That patch of stones! It's here, it's—cra-a-a-sh! A rolling, leaping, sliding, side to side! The engine slows, but not for long. I find it hard to



"Cra-a-a-sh! I am on the edge of the ditch."



**Driving to Save a Life.—**

steer. I am on the edge of the ditch when the unrolled road at length is safely passed.

**The Fire Engine on the Road.**

And now the town's bright lights! The tram lines, free from grease, are quickly traversed, and the fireman's nap is rudely broken by my hammering on the door. The message given, I only wait to see the horses pull the engine from the shed. And then I go before them, returning to the fire to tell my friends the engine's on the road!

How goes the fire? I find it has broken through the floor, and is lapping up the walls around the room above. But the furniture has been moved from here. Wise thought. The door below has stood the strain. Good hardwood door! But it cannot last much longer.

Miss Margaret's not been moved as yet I hear. If all goes well, she need not have that pain. She does not even know the house is being burnt around her. She's far too ill for that.

And now it's time the men were here. The door has split, and flames are licking through! Once the door is down the stairs will be in danger! And then the invalid must be moved. More water, more! Quench the thirsty flames! The flames that put their tongues through every crevice they can find!

**Anxiously Awaiting the Firemen.**

Will the firemen never come! With their engine and hose, and water from the pond.

"Run out, someone, and see if there's a sign of them," Brett cried, in agonised tones.

I went into the road. Nothing in sight. I listened. No sound of—but hark! what is that? Bells, jingling bells! Very faint. The sound has died away. There it is again! Yes, they are coming! And now the sound of wheels; then the thud, thud of galloping hoofs. At last, around the bend, the lights appear, and the fire engine comes jingling, rattling, crashing up, and stops with the horses on their haunches. Down jump the men! Out comes the hose! The

captain runs into the house, and is out again in half a minute. Soon the hose is in the pond, the engine is pumping and driving a powerful stream through the drawing room window. Another stream is played upon the room upstairs, and in ten minutes the danger is over.



"Around the bend the lights appear, and the fire engine comes jingling, rattling, and crashing up."

Another quarter of an hour and the stairs would have been impassable!

And so a life was saved by my trusty motor bicycle.

\* \* \* \* \*

Brett now rides a motor bicycle, and he is going to get a sidecar for Margaret. R.W.

**USEFUL HINTS TO WINTER RIDERS.**

**N**OW that the days are short and the roads are heavy, a few hints collected from riders of long experience may be of use, especially to those who have recently joined the ranks of motor cyclists.

Keep warm. Always put on more clothes than you think you will need. You are not likely to be too hot and it is misery to be too cold.

Either long boots and good leggings or Wellington thigh boots are essential to comfort in bad weather. There is no head gear to equal a good "sou'wester" to keep out the rain.

If the lamp connection is too long, wrap it round the handle-bar or some other convenient spot, otherwise when you go over a bump it will "kink" and put your lamp out.

Always carry a pocket electric torch; it is invaluable for night repair work and for examining signposts.

If you have drip-feed lubrication you will probably have to reset the drip or use thinner oil, as thick oil becomes almost solid in cold weather.

Gear considerably lower in winter; it gives your engine a chance and saves many a skid.

If your machine has a lot of plating on it (which it should not have), clean it and cover it with vaseline.

If your magneto terminals are exposed, cover them with a thick layer of vaseline, or, better still, rubber covers sold for the purpose.

Those who compete in winter trials should keep their route card in a waterproof case or varnish it, otherwise it will probably be reduced to pulp long before the end of the trial.

Gloves that have a pocket for all four fingers are the warmest, but some form of gauntlet should be used.

Many tips are given for fog riding, most of which are more or less useless. A yellow light appears to be the best for the purpose, so that if your lamps have not brassed reflectors, try thin yellow linen or, if obtainable, yellow glass on the inside of the lamp. Some forms of electric light are also excellent. The most important point, however, is to drive slowly.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the "Editor, The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

### Judging Distances with One Eye.

Sir,—I am the man Dr. Selby Clare is looking for, or one of them.

I lost an eye from a guncap accident at about the same age as the gentleman the doctor mentions, and, also, just as I was starting motor cycle riding.

That happened ten or eleven years ago, and since then, thanks to the motor, I have had the most enjoyable time of my life. First solo, and later with my good lady (and others) in the sidecar, I have been through nearly all the towns and villages in the Midlands, have ridden through the thickest traffic of many large towns: Birmingham, Coventry, Worcester, Bristol, York, etc., and I have toured the East Coast, main part of the South of England, Devonshire and Wales, and never made a mistake or been at a disadvantage through having to depend on the one optic.

My accident happened when I was seriously considering whether I should not take to glasses, so my sight is not above normal.

At first I experienced the difficulty mentioned by Dr. Selby Clare. If I went into a garden nothing was very clear for a time, but now I guarantee to pick out a ripe strawberry (and eat it) with anyone. In my business I have to judge between objects  $\frac{1}{16}$  in. and  $\frac{1}{32}$  in. different in size, and for a time was at fault, but that corrected itself as the eye got used to the altered focus. The same applies to my judgment of distances, and I can size a thing up as correctly as most people. I have no difficulty in taking my engine down, doing my own minor repairs, attending to magneto points or other small details.

Now I think my case ought to be comforting and encouraging to the doctor's patient, who, I hope, will not worry about his riding in the least. I feel sure he will be all right later on; but should he find any difficulty, why not call round for me? He has lost his right, I have lost my left, we could make up a good pair between us and get on all right with

PETROL.

Sir,—In reply to Dr. Clare, I should like to say that his patient need not lose heart as regards giving up motor cycling, as no doubt he will get quite used to judging distances with the remaining eye. In 1911 I rode through the London-Edinburgh run (with sidecar) with one eye covered up (the result of an accident at the lathe). Probably starting in the dark and daylight coming gradually allowed me to get used to the altered vision, but I did not notice any difficulty in judging distances; in fact we returned through the winding roads of the Lake District.

GEORGE WRAY.

Sir,—I hope you will again allow me to trespass on the valuable space of *The Motor Cycle* to thank my numerous correspondents who are motor cyclists minus an eye, and who so very kindly gave me their experiences and difficulties. The number of letters I have received makes it quite impossible to answer and thank each correspondent individually.

Their replies have been most comforting to my patient, and he now looks forward to the dry roads to learn to ride his motor cycle again depending on one eye.

I have heard of one-armed and one-legged motor cyclists, but one would never believe there were such numbers of one-eyed motor cyclists.

Who says that the "motoring brotherhood" is dead when so many men have gone to such trouble to write in full their difficulties in reply to my enquiry? Truly, sir, our conjoint sport is one which can be participated in by "the halt, the maim, and the (partially) blind."

(DR.) SELBY CLARE.

### The Application of Brakes.

Sir,—Consequent upon the development of machines fitted with variable gears and starters, a need has arisen which I was surprised no exhibitor at the Show seemed to have recognised. I refer to the control of the brakes. There are many times when one would like to keep one of the brakes on without having to keep either hand or foot on it, as, for example, when starting the engine on an up gradient, or when descending a long hill.

My idea of the best way of doing this is to control one of the back wheel brakes by a twisting handle, or in the case where only one is fitted this control would be in addition to the pedal.

I do not care for the ordinary twisting grip, and would prefer one in which a slightly enlarged knob at the end only rotates, and as it is not essential that this control should be very rapid in action a screw with a finer pitch than is usual for twisting handles would give the necessary power and would retain the brake on when desired.

I had drawn up a specification for a differential counter-shaft, but the description you published on November 28th of Denby and Co.'s showed me that I had been anticipated. May I point out that this counter-shaft possesses the advantage one of your contributors has been asking for, viz., it is not possible for a belt to get lost without the driver's knowledge, as if one comes off the other pulley immediately opens out and the belt slips. It also has the advantage that it automatically divides the load between the two belts, whereas in the ordinary fixed pulley counter-shaft if the belts or pulleys differ in size it is possible for one belt to be actually acting as a brake.

C. S. SQUIRE.

### A Clean Design.

Sir,—I write to you to "back up" Mr. T. F. Maw's argument, as I thoroughly agree with his statements, having found from personal experience the chain very much more satisfactory than the belt.

I also wish to say a few words in praise of "A Clean Design," appearing in the same issue. There are, however, one or two points which I would like to comment on. The first is the combined drive. Instead of this I would suggest final transmission by shaft, or enclosed chain, as on the Lea-Francis.

Disc wheels are also shown. These, I think, would make the bicycle extremely troublesome in a high or even moderately high wind. I would advocate a sort of artillery wheel, the spokes of which could be made out of galvanised steel rods which would thus be rustless. I imagine also that a Green type water-cooled engine might be less liable to radiator trouble in the event of a fall.

The foregoing changes would, I think, make the machine more weatherproof and less liable to damage.

WATER-COOLED CHAIN DRIVE.



**Silence.**

Sir,—Having read with interest the many letters and articles in *The Motor Cycle* on silence, may I point out a few obvious advantages of a silencer cut-out.

To the keen motor cyclist who desires to obtain the best results from his engine a cut-out is a necessity, as with a noiseless exhaust it is almost impossible to tell if one has a perfect mixture. Further, with an open exhaust any foreign noises and the slightest knocking in the engine are plainly audible.

NORTHAMPTON.

Sir,—I have been forced to the conclusion, after regular reading of "Ixion," that he knows what he is talking about, notwithstanding the apparent doubts of your correspondent "Silentius."

Individually, my experience of the silent car is that it is a positive nuisance both to the driver and the public. The driver because his hand has to be constantly on the horn in traffic, and to the public because a horn startles.

I had on my present  $3\frac{1}{2}$  h.p. a horn that was not a good one, and, though a careful driver, found to my cost that with my cut-out closed in traffic I was not safe.

One day I was passing a lorry, the driver of which was sitting on the wrong side (left). A boy was in the driver's seat, and although I blew the horn vigorously, the boy dropped off the lorry on to my front wheel. Had my cut-out been open, I am of the opinion that we should not have been mudlarking.

AD SUM.

**A Substitute for a Differential.**

Sir,—In your issue of the 28th November you illustrated and described a differential counter-shaft in which a large V belt pulley is mounted on a tubular shaft carried in bearings; to the outer ends of this tubular shaft are fixed one half of a V belt pulley, the other halves of which are carried by the solid shaft passing through the tubular one and having end play, and thus giving a differential action with, perhaps, a negligible want of alignment of the belts. I want to state that I designed such a mechanism some years back and afterwards improved it by pinning or feathering the inner shaft so as to take part of the drive, and also, by mounting the large driven sprocket, not on one tube, but in halves on the inner ends of two tubes; then, by moving the counter-shaft forward or aft, a change of gear is effected in what is probably the most efficient and simple manner for belt drives. I have not adapted it in my cycle car because of the large amount of power, quite 40%, necessarily wasted in each belt drive.

A. EDMUND PARNACOTT.

**Improvements in Motor Cycles.**

Sir,—I am pleased to see that "Ixion" is having a growl at motor cycle manufacturers in general. Some time ago a number of well-known trade riders were discussing the same topic, and each of them complained of the aversion manufacturers manifested to make any much needed improvement on their machines. The one conclusion we came to was that, until a slump comes along, we are not likely to get much attention bestowed on our suggestions. It is always a surprising thing to me to see a firm engage an enthusiastic and expert rider very often at a high figure and yet (more often than not) totally ignore his suggestions for improving the machine.

A man who is practically living in the saddle and continually travelling up and down the country soon knows (if he keeps his eyes open) what is wanted, and, more important still, what will be wanted in the motor cycle line, yet his suggestions and ideas are simply shelved and the old design of frame and engine turned out again for another twelve months, simply because at present the demand for motor bicycles is equal to the supply. When the slump comes we shall get our improvements, but when the slump comes it will mean the survival of the fittest, and the few go-ahead and progressive firms will reap their reward. Many of the others will, I am afraid, go the the wall because mere copyists are always twelve months behind. However, the slump will be a blessing in disguise. May it come soon is the wish of

TRADE RIDER.

**The Transmission Question.**

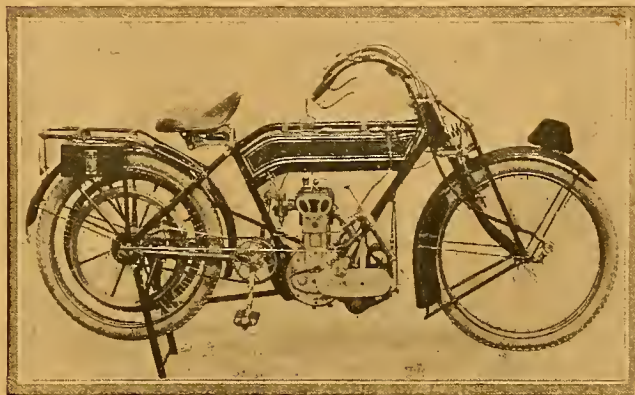
Sir,—I am glad to see "Ixion" taking up the case of the "dropsical elderly man," in relation to motor cycles. Better springing of the back wheel is, of course, very much desired by most of us, but better weatherproof qualities are a crying necessity. The youthful hill-devouring enthusiast will have his day, but certainly the all-weather business man will prove a more reliable market in the long run. In the issue of December 12th is illustrated a well meant attempt to mudguard a belt-driven machine. I have tried that, and regard it as hopeless. It is not necessary that the belt should be, like the poor, always with us. Its reappearance in the combined drive is, I suppose, a dreadful example of the survival of rudimentary and unnecessary organs.

I entirely agree with Mr. T. F. Maw's remarks in your paper, but should like to point out that there are actually shaft-driven machines with satisfactory clutches on the market, though they are not yet superior to belt-driven machines by "Ixion's" test of universal popularity. Having owned a shaft-driver with a good clutch and gear box for two and a half years I am quite convinced that this form of transmission is incomparably superior to belt drive and far better than chain. For six years I did all the work I could on belt-driven machines of various good makes, and had to keep a horse for the winter work. Since investing in the shaft-driver I have done all my work for three summers and two full winters on it. The horse has been sold, and this machine has been running practically every day over very bad roads and its mileage is now over 12,000. During this time the transmission has never failed, and has only been disturbed to remove the back wheel for tyre changing. The clutch control has been adjusted once and gear box drained of oil once after 11,000 miles had been covered. The oil ran out as clean as when put in, which sounds incredible, but it is true. There is no appreciable wear in any part of the transmission, which runs a shade better than when new. Belt enthusiasts please note! This form of drive does not necessarily spell short engine life, as the engine ran 11,000 miles before any repairs were needed. These were one new big end bush, one main bearing bush (flywheel side), and a new piston and rings, total cost about 15s. (I do my own repairs.) This is much better than anything I had previously owned.

Need I add that this shaft-driven machine is much cheaper to run than the others, that I am a country doctor, and not interested commercially in any form of motor vehicle.

F. C. JAMES.

Sir,—I was very interested to note that the question of transmission is again under discussion. There is no point on the modern motor cycle that is so much lacking in perfection. I note Mr. Maw favours the chain drive and is somewhat hard on the merits of the compound drive. While agreeing with most of his statements I take exception to others. Firstly, he states that the compound drive cannot be fitted with an adjustable belt pulley. Why not? An adjustable pulley can be fitted to the counter-shaft, though the same variations in gear ratio cannot be obtained as in the direct belt drive, owing to the large pulley used in the counter-shaft gear. Secondly, he states that engines used



Valve side of the three-speed Grandex fitted with  $3\frac{3}{4}$  h.p. Precision engine. Observe the combined trouser guard and cover for the valves.



with chain drive are just as light and lively as engines used on belt driven machines, and "wear as well." But it is not only the question of engine wear that must be taken into consideration, it is the back tyre and transmission that suffers mostly—with a rigid drive—and undoubtedly makers have favoured the compound drive as against the entire chain drive, solely on account of the harshness of the latter. Unfortunately the compound drive, though more efficient and reliable than the all belt drive, is still very inefficient. But, as against that, the all chain drive, unless containing an efficient shock absorber, is far too harsh, is noisy, the chains quickly stretch, thus ruining the initial higher efficiency of this drive, and must be enclosed to be really satisfactory. This latter is not easily carried out and also adds the great drawback of inaccessibility. Mr. Maw states that "so soon as the shaft drive is fitted with a satisfactory slip clutch mechanism this drive can compete with the chain—but will always be more expensive." The only known shaft driven machines already on the market are so fitted and always have been (with the exception of the earlier models of the four-cylinder F.N., but the even torque of a four-cylinder engine practically does away with the necessity of providing for the absorption of shock (the same reason applies, of course, to twin two-stroke machines). Also, it is questionable if a shaft drive does cost more than a chain drive.

The ideal system, of course, can only be one in which the unequal turning moment of the engine can be transmitted to the back wheel as an even torque without any slip at all, or any loss of efficiency. Therefore the uneven impulses of the engine must be absorbed and given out again at an even rate. As it is not feasible on a motor cycle engine to fit a large flywheel to absorb and so equalise this uneven turning moment, the greater part of the duty falls to the transmission system.

A properly designed shaft is positive but flexible. It is the torsional elasticity of a shaft that constitutes its great advantage over the chain, the shaft itself absorbing shock and giving out the power again with practically no loss. No shock absorbing devices already devised or used in connection with chain drive can anything like compare with the shaft drive on this point alone. In fact the shaft practically equals the belt in the question of flexibility, and easily beats it in the question of efficiency. Further, the shaft drive is simple, absolutely reliable, absolutely cleanly, all being enclosed, and is very neat, and the wear almost nil in comparison with belt or chain. At least 10,000 miles should be covered without any replacements. Though the cost of the shaft drive is somewhat high in the first case, this is more than compensated for by decreased cost of repairs, to say nothing of its greater reliability and freedom from trouble. As soon as the exceptional merits of shaft drive are realised by riders, its use will become almost universal, and it is the only system that can substantiate the makers' favourite advertisement "The all-weather machine." W.M.

### Counter-shaft Gears and Belt Drive.

Sir,—I notice that a discussion is taking place, through the medium of your columns, as to the respective merits of belt and chain transmission.

The problem of transmission will be largely influenced by the position of the change-speed gear. The best modern practice in change-speed gears is to provide three speeds, the lowest being an emergency gear (so long advocated by *The Motor Cycle*), and, therefore, giving a ratio of 10 or 12 to 1. This very low gear is undoubtedly necessary and will probably be general for next season.

It will be fairly obvious to most readers that if we place our change-speed gear in the counter-shaft position we at once rule belt drive out of court, the reason being that when our very low emergency gear is in use an enormously increased driving stress is thrown on the final unit of the drive, coincidently with a big fall in its speed. If the final unit is a belt, it is very much overloaded when the emergency gear is in use (and it is frequently in use), and belt slipping, stretching, breaking etc., will be much more frequent than at present. It will also be obvious that when we have a 10 or 12 to 1 gear in use the belt speed falls extremely low. The result is that we get a very inefficient drive, and a drive that fails just when failure is least desirable.

On the other hand, if we place our change-speed gear in the hub the belt is never overloaded on any speed, and the belt speed never falls, so that our drive is very efficient.

If a counter-shaft gear has only a moderately low bottom speed (say about 7 or 8 to 1) belt drive is quite satisfactory, but the inclusion of a very low gear means that a chain will have to be substituted for the belt, otherwise the drive will always be unsatisfactory.

As belt drive is so popular (and deservedly so in my opinion), the hub gear is undoubtedly the best to use with it—a fact that has been recognised by all our big firms.

I believe very great headway is being made in the development and construction of hub gears, and there is no doubt but what their present minor drawbacks will soon disappear.

ENGINEER.

### The Wear of Small Engines.

Sir,—It was my original intention not to take any notice of letter in your issue of 28th ult. by Mr. Stich, criticising my statements to "Ixon" on above subject; but as my friends expressed surprise and regret that I have not yet taken the trouble to clear myself, I now briefly state that the points questioned in Mr. Stich's letter had my careful consideration before writing, and I cannot admit that they have any bearing on the subject, and Mr. Stich now knows this to be true.

W. HUTCHISON.

### Second-hand Machines.

Sir,—Having suffered from misstatements in regard to F.N. motor cycles in advertisements of second-hand machines, we are constrained to write and point out in what year each particular model was made.

We have recently seen advertisements of 4½ b.p. four-cylinder F.N.'s being termed 1911 models.

The 4½ h.p. four-cylinder was introduced in 1907, and was not made or sold after 1909. In 1903, a 5.6 h.p. model (50 mm. bore) was introduced and sold throughout that year and 1909. This was followed in 1910 by a bigger engine (52½ mm. bore), and called 5.6 h.p., and this particular size of engine is still in use.

The first single-cylinder shaft-driven machine was introduced at the end of 1909, rated at 2½ h.p., and sold until the end of 1910. This can be distinguished from the next model by the leather-covered cone clutch fitted.

At the end of 1910 an improved model with multiple disc clutch was introduced, and this was sold until May, 1912, when the first of the latest 2½ h.p. machines was introduced.

The 1½ h.p. belt-driven model with geared down engine belt pulley was introduced in 1907, and sold right through to the middle of 1909.

We shall be glad if you will bring these facts to the notice of readers, so that they can protect themselves against those who advertise machines as of a certain year when in reality they are at least two years older.

For F.N. (ENGLAND), LTD.,

H. G. BELL, Sales Manager Motor Cycle Dept.

### Defective Fittings.

Sir,—Having read several articles in recent issues of the motoring press re shoddy methods on the part of manufacturers with regard to nuts and bolts and the lesser fittings of motor cycles, I should esteem it a favour if you could find room for the following glaring instances, which have lately been brought to my notice, and which seem to me to reveal a very loose link in the construction of a machine intended, as a motor cycle is, to carry a considerable burden of weight.

A few weeks ago I drove my machine (a lightweight) some ninety miles, part of which distance traversed the well-known Shap Fell. When nearing my destination—Carlisle—I became aware of a slight squeak in the springs of the front forks. On garaging the machine, I grasped the handle-bars lightly, and gave one or two up and down motions, sufficient to depress the springs a quarter of an inch or so, endeavouring to locate the squeak. Imagine my surprise when I felt the whole handle-bar give way several inches in my hands. On inspection I found that the bars (which were of the forward lug variety) were hanging on to the steering pillar by a mere shred of metal; in fact, they subsequently dropped off with their own weight. The bars were lin. and the steering pillar ½ in. diameter. After the usual delay, I had a new pair of bars fitted, only to find that in less than one week's riding the



new steering pillar had bent at least a quarter of an inch out of truth. Having had this straightened out, I find that in another week the steering pillar is again developing a list.

Still more recently I was in an agent's shop, when I was shown the "remains" of a motor cycle, the result of the handle-bars snapping off by the steering pillar. I do not know what became of the unfortunate rider, but the machine looked as if it had been trying conclusions with a stone wall. In this case both the bars and steering pillar were of 1 in. diameter, but in both cases the metal of which the steering pillar was formed seemed to be barely  $\frac{1}{16}$  in., and the fracture occurred at the joint of the pillar with the bars. It strikes me forcibly, although I am but a novice in such matters, that manufacturers should pay more attention to the tremendous stress and strain bound to be felt in this, the most vital part of a machine, and on the strength of which a rider's life constantly hangs.

I do not know whether such events as the above are of frequent occurrence, my motor cycling experience only dating from some three months back, but to come across two cases in one month shows that something must be wrong.

N.E.S.

### Benzole.

Sir,—Perhaps you would be interested to know what pleasing results I am getting from benzole. I have not made any alteration to carburettor (B. and B.); the only thing I find necessary is to give more air with extra air lever. My machine is an 8 h.p. J.A.P. engined cycle and sidecar, and I must say it pulls a great deal better with benzole than petrol. Other riders' experiences with this spirit would be very interesting.

CANNOT AFFORD PETROL.

### Cycle Cars.

Sir,—I noticed in your issue of December 12th, in a report of a discussion on cycle cars, that one gentleman referred to having driven his Morgan runabout four or five miles on low gear, putting this forward as evidence of the utility or safety of an air-cooled engine in a cycle car.

I may state that on a twelve hours' reliability run I had the misfortune to damage my high gear on a similar machine when over sixty miles from home, and drove that distance on the low gear, frequently exceeding 20 m.p.h., without the slightest indication of overheating, and further that while in Ireland in October I snapped my high gear chain, and, while waiting for a new one, drive eighty miles quite comfortably on the low gear without doing any damage to the engine.

I have had a season's trial of the Morgan, and in spite of many mishaps it is running now better than the day I got it, and I would not exchange it for any water-cooled cycle car

on the market. I have had no trouble through skidding, and have yet to meet the hill it will not climb with two up. I have had no punctures in back tyre in 4,500 miles.

A. W. MONTGOMERY.

### Sidecar Spindles.

Sir,—We would like to point out to your correspondent, "AF 274," that if he desires a large margin of safety on his sidecar he must be prepared to pay a higher price than £6 10s., which he stated was the cost of his present sidecar. If "AF 274" were to examine some of the best makes of sidecars he would find that there is a much greater difference between the low priced and the expensive models than merely the difference in the body.

In addition to the wheel spindle there is the frame generally, and the points of attachment to the cycle particularly to be considered, and people cannot reasonably expect a low-priced article to stand the same amount of knocking about as a better one.

Where price is a factor to be taken into serious consideration in the purchase of a sidecar, buyers would be much better advised to spend all the money in the chassis and rest content with the very cheapest type of wicker chair. This would be much more satisfactory all round than purchasing a cheaply got up imitation of a first-class sidecar.

NORTHERN DEPOT, LTD.

S. K. BROADFOOT, Managing Director.

### Weatherproof Finish.

Sir,—Once again as winter approaches, motor cyclists, as shown by your correspondence columns, turn their attention to protecting their machines against the ravages of rain and mud.

Now are all-weather motor cyclists prepared to pay from 10s. to 15s. more per machine if it is guaranteed not to rust or corrode? I recently heard of a new process which should answer the demand perfectly. I do not think it has been mentioned in *The Motor Cycle*.

The preparation is called Pellolit. It is built up in layers on the metal, being stoved and rubbed down several times, and forms a hard protecting coating on the metal.

Pellolit has properties which should appeal to motor cyclists. First it cannot chip or crack. It is unaffected by acids, or alkalis, or damp. It is a non-conductor of heat and electricity, and will stand a temperature of over 400°F. In appearance, like ebony, it can be finished dull or polished.

Can you, sir, give us any experience with Pellolit? At present, I believe it is a new thing. Who will be the first to market a motor cycle in Pellolit finish, with no nickel to clean or daub with vaseline and no enamel to be scraped off at every spill?

O.C.K.

## CLUB NEWS.

### Winchester and District M.C.C.

The annual general meeting was held on the 10th inst.

### Oxford M.C.C.

The annual meeting will be held on January 6th, and the annual dinner on January 25th, at the Hotel Buol, Oxford.

### Merthyr M.C.

The annual whist drive and dance took place on the 12th inst., during which Mr. E. Gunter presented the prizes won during the year. The attendance was good and a most enjoyable evening was spent.

### Tyldesley and District M.C.C.

The hot-pot and smoker held on the 11th inst. proved very successful, the social being thoroughly enjoyed. The new club commenced its career with a membership of forty-nine.

### Bradford M.C.C.

The sixth annual dinner and presentation of prizes and medals won during the past season took place on the 10th inst. at the Albert Buildings. Mr. Percy Butler presided, and an excellent musical programme completed the evening's entertainment.

### North Derbyshire M.C.C.

This new club has already over seventy members. The management is to be strictly in the hands of amateurs, although trade riders are welcomed as ordinary members. Hon. sec., Mr. W. Brown, headquarters, the Station Hotel, Chesterfield.

### Ayr and District M.C.

The annual smoking concert and presentation of prizes took place on the 16th inst. at the Hotel Dalhlaire, Ayr. The president, Mr. John Hourston, occupied the chair, and presented the prizes, the chief event of the evening being the handing over of the President's Cup, for the best average marks gained during the season, to Mr. James Gilchrist.

### Sydney M.C.C. (N.S.W.)

The non-stop reliability trial, held on October 5th, was won by V. H. Page (3½ h.p. Zenith) with a loss of three points; second, R. E. Fletcher (3½ h.p. B.S.A.), six points; third, R. W. Allan (3½ h.p. Zenith), nine points. The trial was over a distance of seventy-eight miles and included the famous Blue Mountains. Motor bicycle competitors had to average 21 m.p.h. and sidecars 18 m.p.h.



# M.C.C. LONDON-EXETER RUN.

The Time-table, Complete List of Competitors, and their allotted Numbers.

**M**ANY of our readers on or near the route of the annual London-Exeter run will find the time-table below of great convenience for reference. We give also the numbers allotted to the various competitors and the machines they are riding. This year the entries total 163; last year there were 119.

Mr. F. T. Bidlake will despatch the first competitor—E. B. Dickson, the trials hon. sec.—from Hounslow at 7.0 next Friday evening, and he is due at Exeter at 5.4 a.m. Starting back at 6.34 a.m., he is due at Hounslow at 3.40 p.m. The tail-enders will finish in darkness.

## ROUTE AND TIME-TABLE.

The times given are approximately the times of first arrivals.

OUTWARD.			HOMEWARD.		
Distance from			Distance from		
Start.	Time due.		Start.	Time due.	
Hounslow ...	7.0 p.m.		Exeter ...	161 6.34 a.m.	
Bagshot ...	16 7.53 "		Lyme Regis ...	189 8.1 "	
Basingstoke ...	35 8.52 "		Bridport ...	198 8.28 "	
Andover ...	54 10.3 "		Dorchester ...	213 9.12 "	
Salisbury ...	71 11.0 "		Blandford ...	229 9.56 "	
Wilton ...	75 12.12 a.m.		Salisbury ...	252 11.4 "	
Shaftesbury ...	93 1.15 "		Andover ...	269 12.57 p.m.	
Yeovil ...	115 2.31 "		Basingstoke ...	288 1.52 "	
Crewkerne ...	123 2.59 "		Bagshot ...	307 2.51 "	
Chard ...	131 3.27 "		Staines ...	317 3.20 "	
Ilton ...	145 4.12 "		Hounslow ...	323 3.40 "	
Exeter ...	161 5.4 "				

## List of Competitors.

1. E. B. Dickson (8 Bat)	23. W. H. Bashall (7 Matchless sc.)
2. H. G. Bell (5 F.N.)	24. J. T. Bashall (7 Matchless sc.)
3. W. H. Wells (7 Indian sc.)	25. A. Bashall (7 Bat sc.)
4. N. O. Soreby (3 1/2 Rudge Multi)	26. A. T. Tamplin (9 Matchless cycle car)
5. P. W. Moffat (2 1/2 Douglas)	27. C. W. Meredith (3 1/2 Bradbury)
6. W. E. S. May (8 Matchless sc.)	28. H. Gibson (3 1/2 Bradbury sc.)
7. E. J. Hancock (3 1/2 Premier)	29. H. B. Willoughby (6 Steller sc.)
8. A. E. Carr (3 1/2 Triumph)	30. O. Percival (2 1/2 Douglas)
9. R. C. Davis (5-6 Clyno sc.)	31. J. H. Kerr (3 1/2 N.S.U.)
10. H. G. R. Slingo (5-6 Clyno sc.)	32. P. Grout (6 A.J.S. sc.)
11. F. Smith (5-6 Clyno sc.)	33. W. B. Gibb (8 Williamson sc.)
12. H. Karslake (3 1/2 Rover sc.)	34. W. O. Henry (5-6 Clyno sc.)
13. R. R. Rothwell (8 G.W.K.)	35. L. A. Baddeley (—)
14. O. G. Roberts (3 1/2 Green-Zenith)	36. D. S. Baddeley (3 1/2 P. and M. sc.)
15. H. O. Mills (3 1/2 Regal-Green)	37. P. D. Walker (3 1/2 Rudge sc.)
16. S. F. Garrett (3 1/2 Regal-Green)	38. F. C. Hayward (6 Zenith sc.)
17. R. B. Clark (3 1/2 Rudge sc.)	39. R. O. Mundy (3 1/2 Triumph)
18. P. Newbold (5 Zenith sc.)	40. F. A. McNab (3 1/2 Ariel)
19. E. G. J. Charlesworth (6 Zenith sc.)	41. W. P. Guiver (3 1/2 Ariel sc.)
20. H. Johnson (3 1/2 Triumph)	42. C. H. Konwehoron (3 1/2 Ariel)
21. Phillips (3 1/2 Douglas)	
22. R. Chesterfield (7 Indian sc.)	

## BIRMINGHAM-YORK AND BACK.

Below we give a list of entrants for the Birmingham M.C.C. second annual winter run to York and back on the 28th inst.:

1. S. A. Rowlandson (3 1/2 Rudge sc.)	14. J. E. Greenwood (2 1/2 Sunbeam)
2. R. W. Duke (3 1/2 James sc.)	15. E. V. Pratt (6 H. and D. sc.)
3. S. C. Perryman (3 1/2 Quadrant)	16. H. Newey (2 1/2 Lewis)
4. L. Newey (3 1/2 Ariel)	17. Cecil Peers (2 1/2 Forward)
5. F. E. Farmer (3 1/2 Calthorpe)	18. Geo. Hill (3 1/2 Rudge)
6. T. Pollock (3 1/2 James sc.)	19. Tom Silver (3 1/2 Quadrant)
7. Bert Yates (8 Hummerette)	20. D. A. Pearson (3 1/2 Trump-Jap)
8. H. Ball (3 1/2 Triumph)	21. A. W. Walden (9 Premier cycle car)
9. E. I. Slattery (6 Trump sc.)	22. A. E. Hawkins (3 1/2 Premier)
10. E. C. Sauter (3 1/2 Ariel sc.)	23. E. H. Brown (6 Rex Sidette)
11. A. G. D. Cress (3 1/2 New Imperial)	24. V. Busby (3 1/2 Ariel)
12. H. B. Davies (2 1/2 Sunbeam)	25. Eric Walker (3 1/2 Monarch)
13. W. H. Egginton (3 1/2 New Hudson sc.)	26. V. Underhill (3 1/2 Monarch)

## OPEN WINTER TRIAL.

The Bournemouth M.C.C. are holding an open winter reliability trial on the 8th January. The distance is 130 miles and the route is: Bournemouth, Dorchester, Yeovil Shaftesbury, Fordingbridge, Bournemouth. Three test hills will be officially observed, and to gain full marks competitors will be required to make clean ascents. Another hill will be selected for a slow climb.

The competition will start at 9 a.m., and competitors must assemble at King's Park, Bournemouth, by 8.20 a.m. Competitors who arrive within schedule time will be awarded 100 marks. For each clean ascent on the observed hills fifty marks will be awarded, and the competitor who makes the slowest time in the slow climb will be allotted fifty marks.

43. B. A. Hill (8 Hummerette)	107. C. T. Newsome (3 1/2 Rover sc.)
44. R. Brown (8 Crouch carrette)	108. D. H. Noble (3 1/2 Rover sc.)
45. D. S. Parsons (8 G.W.K.)	109. H. E. Davison (3 1/2 Kerry-Abingdon)
46. V. Pratt (3 1/2 P.M. sc.)	110. P. Hann (10 Pinnace light car)
47. A. C. Evans (6 A.C. Sociable)	111. J. S. Heyrod (3 1/2 Motococche)
48. J. A. Hunt (3 1/2 F.N. sc.)	112. C. P. Hovey (3 1/2 Rudge sc.)
49. T. J. Rosa (3 1/2 Triumph)	113. F. W. Carrier (3 1/2 New Imperial)
50. W. H. Egginton (3 1/2 New Hudson sc.)	114. M. Geiger (8 V.S. sc.)
51. G. L. Drew (3 1/2 Premier)	115. H. A. Sudfeldt (6 V.S. sc.)
52. G. B. Barham (6 Rex de Luxe)	116. E. B. Ware (8 Chater-Lea sc.)
53. W. P. Tippet (2 1/2 Hummer)	117. Dr. C. B. Moss-Blundell (6 Imperial)
54. C. D. Wright (3 1/2 Hummer)	118. S. H. Beal (3 N.S.U.)
55. H. A. Playfair-Robertson (2 1/2 Premier)	119. J. L. Love (5-6 A.C. de Luxe)
56. O. Hill (8 G.N. cycle car)	120. E. D. Babington (8 Bat)
57. A. G. Peppercorn (3 1/2 Bradbury)	121. Rear-Admiral Sir R. K. Arbuthnot (3 1/2 Triumph)
58. W. H. Elce (3 1/2 Rudge sc.)	122. R. H. Guest (7 Matchless sc.)
59. A. Adecock (2 1/2 F.N.)	123. C. E. Collier (5-6 A.C. Sociable)
60. E. O. Clark (5 F.N. sc.)	124. G. W. Marsden (3 1/2 Bradbury sc.)
61. C. S. Franklin (6 N.S.U. sc.)	125. H. A. Cooper (3 1/2 Bradbury sc.)
62. J. A. Neumann (6 Rudge sc.)	126. L. W. Fox (3 1/2 Hampton)
63. S. J. Saunders (6 Rudge sc.)	127. J. Chater Lea (8 Chater-Lea sc.)
64. R. E. Lucy (3 1/2 Rudge)	128. E. B. Jourdan (3 1/2 Bradbury)
65. R. M. Astou (3 1/2 Bradbury)	129. H. Ellis (6 Calthorpe sc.)
66. F. C. North (8 Matchless)	130. R. Ellis (6 Calthorpe sc.)
67. V. H. Barnard (3 1/2 Bradbury)	131. J. Peachey (3 1/2 Premier)
68. G. F. Pither (8 Duo cycle car)	132. G. Griffith (8 Zenith sc.)
69. F. G. Watson (3 1/2 Swift sc.)	133. A. H. Ratcliffe (3 1/2 B.S.A.)
70. W. Cooper (10 Hummerette)	134. E. R. Cass (10 Gordon cycle car)
71. R. Holloway (3 1/2 Premier sc.)	135. H. F. S. Morgan (8 Morgan runabout)
72. N. O. Dear (3 Connaught 2-st.)	136. A. W. Lambert (8 Morgan runabout)
73. G. Brough (6 Brough)	137. E. Kickham (2 1/2 Douglas)
74. P. Rishy (6 Brough)	138. V. Wilberforce (8 G.W.K.)
75. G. E. Cuffie (7 Indian sc.)	139. G. W. Hiers (8-10 G.N.)
76. E. G. Webster (6 Zenith sc.)	140. Rev. E. P. Greenhill (8 G.W.K.)
77. P. G. E. James (7 Indian sc.)	141. N. B. Stewart (8 Morgan)
78. P. Bounds (8 Bounds-Jap sc.)	142. A. V. Deacock (2 1/2 Douglas)
79. L. Crowe (8 Bounds-Jap sc.)	143. D. W. Popplewell (3 1/2 Triumph)
80. A. J. Stevens (6 A.J.S. sc.)	144. C. F. Halsall (8 Wilton-Matchless sc.)
81. J. Stevens (2 1/2 A.J.S. sc.)	145. W. Waterson (3 1/2 Triumph sc.)
82. H. Stevens (6 A.J.S. sc.)	146. B. Macdonald (4 G.W.K.)
83. W. Hanson (5 A.J.S.)	147. S. C. Humphries (8 Arden cycle car)
84. A. H. Mee (2 1/2 Diamond)	148. H. E. Williams (8 Hummerette)
85. W. Rootes (—)	149. L. A. Bees (3 1/2 L.M.C.)
86. R. M. Stallebrass (6 Kynoch)	150. W. A. Jacobs (—)
87. R. F. Messervy (8 Duo cycle car)	151. A. J. Sproston (3 1/2 Rover)
88. C. M. Keiller (8 G.W.K.)	152. W. P. Brandon (7 Indian sc.)
89. C. Patten (8 G.W.K.)	153. A. F. Abbott (3 1/2 Bradbury sc.)
90. W. L. Slingsby (3 1/2 P.V.)	154. O. Dickinson (3 1/2 Ariel sc.)
91. A. J. Dixon (10 Singer cycle car)	155. H. A. Collier (Matchless cycle car)
92. F. Begley (6 Enfield sc.)	156. N. H. Pearson (7 Indian sc.)
93. A. G. Cocks (2 1/2 Connaught sc.)	157. M. C. Breeze (3 1/2 B.S.A.)
94. L. Cass (6 Trump-Jap sc.)	158. S. Wright (Hummerette)
95. W. H. Bedford (—)	159. S. Wright (Hummerette)
96. H. G. Chester (8 L.M. cycle car)	160. P. H. Jones (8 Morgan runabout)
97. J. Pauling (8 Zenith sc.)	161. K. Harkridge (2 1/2 F.N.)
98. G. Nott (8 Matchless sc.)	162. F. E. Pither (10 Hurtu)
99. E. Vallis (8 Wilton-Matchless sc.)	163. C. Lester (10-12 Bultax)
100. R. Clark (2 1/2 Douglas)	
101. A. V. Sumner (3 1/2 Day-Leeds)	
102. T. C. de la Hay (2 1/2 Sunbeam)	
103. F. W. Southern (2 1/2 Sunbeam)	
104. S. T. Tessier (6 Bat sc.)	
105. G. Featherstonhaugh (3 1/2 Rover)	
106. M. A. J. Orde (3 1/2 Rover)	

The Noble-Iddon Trophy will be awarded in this event. Entry forms can be obtained from Mr. E. L. Herring, The Gables, Pine Tree Glen, Bournemouth West.

## LONDON-GLOUCESTER TRIAL.

The North-West London M.C.C. open Gloucester trial for motor cycles, sidecars, and cycle cars, on Boxing Day, has attracted the following entries:

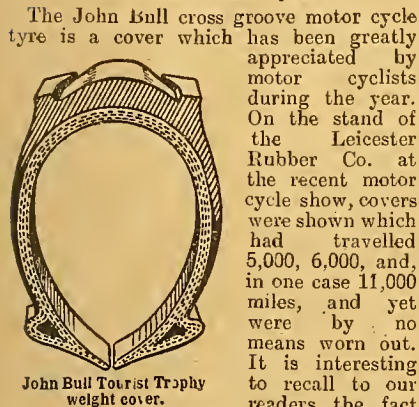
The start is at 7 a.m. prompt from Jack Straw's Castle. Entrants to be in position ready at 6.30 a.m. The distance is about 235 miles.

Mrs. Baxter (6 lady's model Rex)	P. A. Goddard (2 1/2 Douglas)
E. P. Baxter (6 Rex)	Claude Rose (7 Indian)
W. C. Knight (8 Zenith sc.)	H. E. Taylor (5-6 F.N. sc.)
W. Cooper (8 Hummerette)	Elswick Co. (Elswick)
H. P. S. Morgan (8 Morgan)	J. H. Jeffery (Whitgift cycle car)
R. Scott (3 1/2 Triumph)	Percy James (3 1/2 Triumph)
Frank Thomas (10 G.N.)	G. A. Strickland (3 1/2 Triumph)
Osmond Hill (8 G.N.)	G. L. Fletcher (2 1/2 Douglas)
G. J. Hardie (3 1/2 Triumph)	A. J. Dryden (3 1/2 Ariel)
C. W. Meredith (3 1/2 Bradbury sc.)	T. R. Brodie (3 1/2 B.S.A.)
R. G. Mundy (G.W.K.)	D. Popplewell (3 1/2 Rover)
J. Ocker (4 1/2 Singer sc.)	F. G. Boddington (8 Morgan)
J. R. O'Donovan (4 Singer sc.)	L. F. de Perecarre (8 Duo)
A. A. Brinkmann (5-6 Clyno sc.)	Cecil Peeds (2 1/2 Forward)
... O. Oldham (3 1/2 Bat)	Frank Smith (5-6 Clyno sc.)
... P. Gibbins (Rudge Multi)	F. C. White (3 1/2 Rudge)
Chas. Jamieson (Rudge Multi)	A. G. Barnes (6 A.C.)
J. Beal (6 1/2 N.S.U.)	H. G. Mundy (6 A.C.)
G. Nott (8 Matchless sc.)	L. Morridge (3 1/2 Mead)
E. Rose (7 Indian)	J. Ouphaunt (3 1/2 Premier sc.)
C. L. Mowbray (3 1/2 James sc.)	W. Edmonds (8 Hummerette)
W. Ford (—)	J. Bradford (5-6 Letheren cycle car)
H. J. Pooler (3 1/2 Premier)	W. V. Sherwell (8 Sherwyn)
V. Garland (5-6 Clyno sc.)	Glynn Rowden (2 1/2 Douglas)
C. A. Werner (6 1/2 N.S.U. sc.)	C. J. Burton (10 Mors car)



## AMONG THE ACCESSORIES.

### A True British Tyre.



John Bull Tourist Trophy weight cover.

The John Bull cross groove motor cycle tyre is a cover which has been greatly appreciated by motor cyclists during the year. On the stand of the Leicester Rubber Co. at the recent motor cycle show, covers were shown which had travelled 5,000, 6,000, and, in one case 11,000 miles, and yet were by no means worn out. It is interesting to recall to our readers the fact that Mr. Geo. Brough won the London to Edinburgh and back cup for the third time in succession on a machine shod with these tyres.

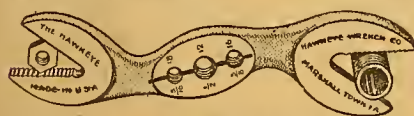
### Some Useful Tools.

Messrs. George Adams, 77-78, High Holborn, W.C., are selling many small tools which are of use to motor cyclists who spend some of their spare time in either doing their own repairs or improving their machines. Among these we may mention an auxiliary vice, which is designed to be held in the jaws of an ordinary vice. The clamping portion can be moved in any direction, and the little instrument allows small work to be easily filed up in any position while held in a vice. The Fit All pliers can, if desired, be carried in the tool bag. In one position they can be used as an ordinary pair



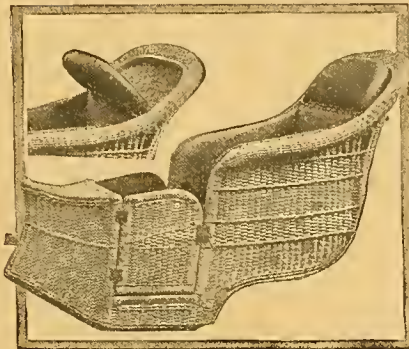
Vulcan combination tool.

of gas pliers, but by moving the fulcrum pin to another hole they can be adjusted to take a small nut. The Vulcan combination tool is fitted in a neat case, and comprises a spanner, split pin extractor, and hammer; the serrated portion in the centre is used as a pipe wrench, while the extremity forms a screwdriver and split pin spreader.



Hawk-eye motor cycle wrench.

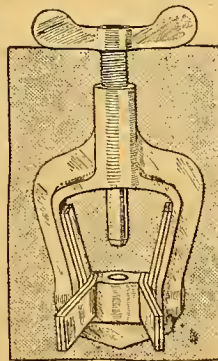
Another useful tool is the Hawk-eye wrench, which can be used as a spanner in the manner indicated in the sketch or as a pipe wrench. In the centre is a screw plate for  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in., and  $\frac{1}{2}$  in. threads; this is useful for restarting a screw thread on bolts, the threads of which have been damaged. The firm of George Adams supplies other interesting tools, but we have mentioned those which are of special utility to motor cyclists.



A suggestion in these columns has been adopted by the makers of the Ramsden sidecar, viz., to provide a convenient receptacle for parcels, which can be reached without disturbing the passenger. The back of the seat as will be seen, takes the place of a lid.

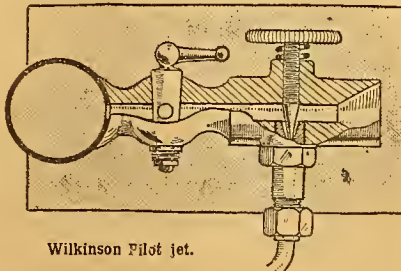
### New Belt Punch.

The makers of the Enots Lubricator, Benton and Stone, Ltd., Bracebridge Street, Birmingham, have just introduced a new belt punch for motor cycles, which is a neatly made tool which cuts a clean hole exactly in the right position, namely, in the centre of the belt. One punch will cut all sizes of belts from one inch downwards, there being four pairs of adjustable plates, which are hinged to the sides of the arch and by using the plates as packing a central position is assured for the belt.



### Pilot Jet.

The annexed illustration is that of a pilot jet or bypass, made by J. H. Wilkinson, 40, Jubilee Road, Doncaster. It is shown attached to the induction pipe of a twin-cylinder 5 h.p. T.T. Matchless.



Wilkinson Pilot jet.

Jap, on which it has been tested with the following results: Ten miles per hour slower speed than formerly; and five miles per hour higher speeds have been attained, and, we are told, double the distance per gallon of fuel has been covered. The device may be used as an

extra air inlet if desired, and is made suitable for handle-bar control. High speeds are attained by stopping up the main jet and opening out the bypass, using the throttle as an extra air opening. Varying sized choke tubes may be screwed in the end further to atomise the fuel if desired. This device will also atomise paraffin as well as petrol, and can be fitted to practically any type of motor cycle carburetter.

### Storage of Parts on Sidecar Bodies.

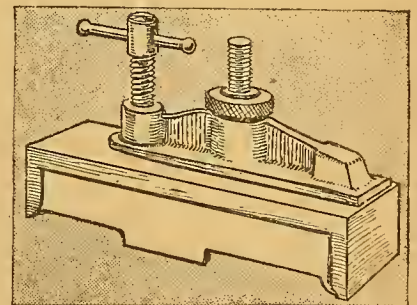
Accessible lockers on sidecar bodies are now becoming a feature. It will be remembered that *The Motor Cycle* recently drew attention to the inconvenience of being obliged to ask one's passenger to get out of the sidecar while the driver foraged for a tool in the space under the seat. Messrs. D. Ramsden and Co., 17, Great Ancoats Street, Manchester, who noticed our remarks, have sent us photographs of a body which has a locker behind the passenger's back, measuring 24 in. deep, 19 in. wide, and 7 in. between the backs. From the above dimensions it will be gathered that an ample-sized compartment for all ordinary tools is provided in a convenient space which is usually wasted.

### Waterproof Coats.

A useful double texture waterproof coat is being sold by the Eclipse Rubber Company, 85, Hatton Garden, E.C. It is shown in the accompanying illustration. The coat is lined with a detachable unstretchable fleece lining, provided with spring button fasteners. Wind cuffs and belt are included, and the length overall is forty inches; leg overalls are sold to match. A speciality is also made of a double breasted oil-skin coat, forty-two inches long; this has wind cuffs, a leather belt, and Raglan shaped shoulders. It is claimed to be absolutely impermeable to wet, and may be folded to a very small size.



Eclipse Rubber Co.'s waterproof coat with warm detachable lining.



Auxiliary vice by George Adams.





#### TIME TO LIGHT LAMPS.

Dec. 26th	...	4.53 p.m.
" 28th	...	4.55 p.m.
" 30th	...	4.57 p.m.
Jan. 1st	...	4.58 p.m.

#### Italian Team in T.T. Race.

We understand that it is extremely probable that a representative Italian team of three riders will enter the next T.T. Race, most likely in the Senior event.

#### Midland Cycle Car Trial.

The first cycle car trial last Saturday attracted fourteen entries; there were six three-wheeled machines—the A.C., Morgan, and P.M.C. Motorette—whilst the remainder were four-wheelers.

#### Spanish Motor Cycle Race.

A road race recently held in Spain over a course of 38½ miles in length, starting at Bilbao and finishing at the same place, resulted in a win for Don Gregorio Pradere, who rode a Rudge-Multi. The winner's time was 1h. 2m. 7s. Other machines ridden in the race were: F.E. and T.T. Triumphs, T.T. Rudge-Multi, and Peugeot.

#### A.C.F. and F.M.C.F.

From recent developments, we have every confidence in stating that the friction which has existed between the Auto Cycle Club de France and the Fédération Motorcyclistes de France will very soon be smoothed over and forgotten.

#### A.C.U. Notes.

THE AUTO-CYCLE UNION ANNUAL DINNER. The A.C.U. annual dinner will be held on a Friday evening early in February. INCREASE OF MEMBERSHIP.

The total increase of membership for the month amounts to 438, consisting of 312 touring members, 26 individual members, and 100 members of affiliated clubs. Nearly 300 members joined at Olympia, when 398 badges were sold.

#### THE 1913 A.C.U. LONG DISTANCE TRIAL.

Owing to the importance assumed by the 1913 International Reliability Trial, there is a distinct possibility of the joint A.C.U. and Scottish Trial being abandoned for next year. (Each, of course, will be held separately.) Instead, it is likely that the A.C.U. Six Days Trial will be held in September, and the International Reliability Trial will be held in conjunction with it.

#### SPECIAL FEATURES:

SEASONABLE STORIES AND ILLUSTRATIONS.

NEW RECORDS WITH STEEL CYLINDERS.

THE CHRISTMAS TRIALS.

List of Competitors.

A STEAM MOTOR BICYCLE.

#### A Steam Motor Bicycle.

Many references have been made in these columns to the possibilities of a steam motor cycle, and now such an attractive mount is an accomplished fact and has been ridden by one of *The Motor Cycle* staff. A detailed description of the machine appears in this issue.

#### Seasonable Articles.

This issue being on sale before Christmas, we have departed from our usual custom to find space for a selection of seasonable articles and a number of special illustrations. The lighter side of motor cycling will no doubt be appreciated by readers at this festive season.

#### Midland Open Trial.

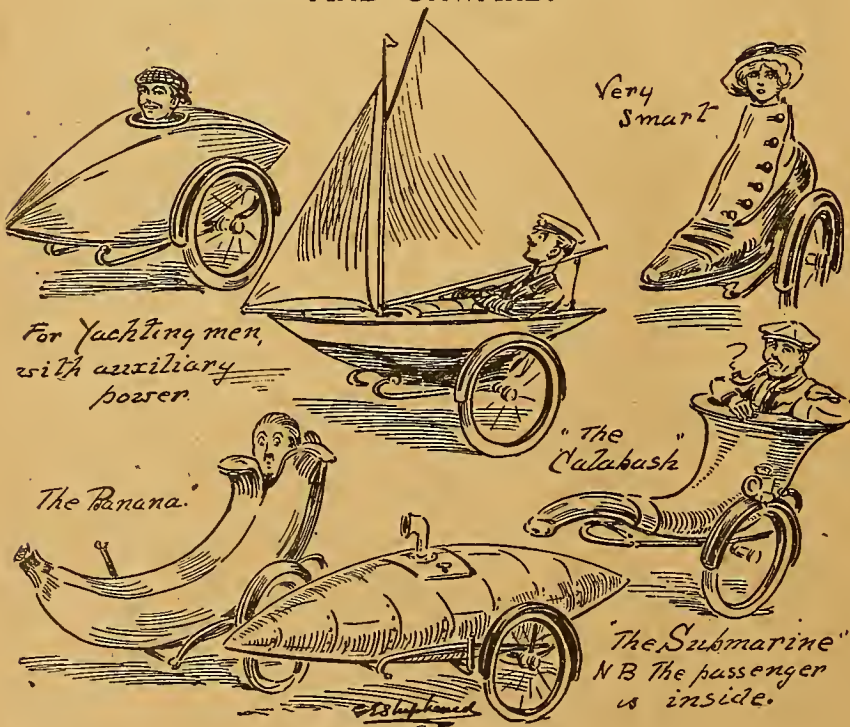
The third open reliability trial of the Sutton Coldfield and Mid-Warwickshire A.C., for Saturday, February 15th, promises to be an important event. The two previous Colmore cup winners—W. D. South (Scott), in 1911 and F. Smith (Clyno) in 1912—will again compete.

With regard to the article published in our last issue, "Methods of Finding Winners in Reliability Trials," it is interesting to note that the Sutton Club particularly desires to select the winner of the Colmore cup without recourse to odd seconds in timekeeping, though, of course, the plan of not allowing more than a minute's margin at the various points will be retained, and rightly so. Perhaps some of our readers can offer suggestions for some better method of determining one winner from a number of non-stops. A new route has been chosen for the 1913 trial, via Warwick and Stratford to Cheltenham; parallel to this road runs the northern half of the Cotswolds, and sufficient tests for the machines will be found in climbing such hills as Saintbury, Willersey, Broadway, and Sudeley.

#### Number of Motor Cycles.

Our contemporary *The Car* repeats in the current issue the figures given in the books of the Registration Authorities throughout the Kingdom. The total number of motor cycles registered is 132,245, pleasure cars—175,247, commercial vehicles 12,627. When the above figures are compared with the returns made by the Local Taxation Authorities of machines on which taxes are paid, it will be seen that there is considerable divergence.

#### POSSIBLE SIDECAR DESIGNS FOR 1914 AND ONWARD.





"A HAPPY CHRISTMAS" TO OUR READERS ALL OVER THE WORLD.

### Frank Philipp's Progress.

We are pleased to say that Frank Philipp, who was injured in an accident on Yorkshire roads a few weeks before the Show, is going on very well. The process of recovery seems slow, but Philipp sustained severe injuries.

### Stolen Machines.

A three-speed 1912 2 h.p. Humber light-weight, registration BW 15, was stolen from Mr. F. Butler, 1, Townley Road, Dulwich, S.E., on the 16th inst. The thief is described as about 5ft. 6in. in height, dark and clean shaven, and gave the name of James Ward. £4 reward is offered for information which will lead to recovery of this machine.

### The Use of Benzole.

We have received some interesting reports lately on the use of benzole for motor cycle engines. Nearly all the users state that benzole gave more power, a greater mileage to the gallon, and less carbon deposit than petrol, provided precautions were taken to provide sufficient air and so ensure complete combustion. Often benzole can be used without the necessity for any special adjustment of the carburetter, but not infrequently the float requires to be weighted slightly with the aid of a washer, and more air must be given.

90% benzole is said to give better results than the pure spirit, while it is not generally known that unless it be mixed with a small percentage of another substance it freezes readily at 0° Centigrade. Benzole is about 4d. a gallon cheaper than petrol, but while the annual consumption of petrol is about sixty-two million gallons, the greatest possible output of benzole per annum in England would not probably amount to over twenty-three millions of gallons.

### French Motor Cyclists' Differences.

The want of adhesion between the Fédération des Motocyclistes de France and the Automobile Club of France is interesting to English motor cyclists, since any registered British rider wishing to compete in France cannot do so unless the competition be run under A.C.F. rules, owing to the joint understandings between the R.A.C., A.C.U., and A.C.F. Every effort is being made to bring about an agreement between the two dissentient parties.

We sincerely hope that these efforts will result in an amicable settlement.

While in Paris, M. Toulemonde (president of the Fédération) and M. Bonvard (of the Lyons M.C.C.) called on Messrs. Boileau and Loughborough, and put their case before them. The Fédération claims to be a body of sportsmen untrammelled by trade influence, and is anxious to come to an agreement with the ruling body whose authority it acknowledges.

Before leaving Paris, Mr. Boileau drafted a letter to the Chevalier René de Knyff clearly setting forth the constitution of the A.C.U. for the guidance of the Fédération delegates and the Commission Sportive of the A.C.F.

## FUTURE EVENTS

Dec. 26.—N.W. London M.C.C. Open Winter Run to Gloucester and Back.

" 27-28.—M.C.C. Annual Winter Run to Exeter and Back.

1913.

Jan. .. —A.C.U. Open Silencer Trial.

" 18.—North Middlesex M.C.C. Open Trial.

" 18.—Bournemouth and District M.C.C. Reliability Trial.

Feb. 15.—Sutton Coldfield and Warwickshire A.C. One Day Trial.

### Three and Four Wheels.

Our attention has been drawn to a paragraph in *The Glasgow Herald* of December 10th under the heading "Motoring Notes." The contributor is Mr. A. N. Sinclair, and, writing about three-wheelers in competitions, he says: "The tricar has had a long enough innings for its shortcomings to become well known; it is but a compromise, a makeshift at the best, and should be excluded from such a contest, with a view to its suppression." This is not a fair criticism of such machines as the A.C. Sociable and the Morgan, and strikes us as being altogether too sweeping without being explanatory or authoritative. Three-wheelers have their drawbacks, but they have performed quite as creditably as, if not in a superior manner to, four-wheeled machines which have been in competitions this year. We see no reason why three-wheelers should be

barred; on the contrary we should advocate competition between the two types as a means of proving which is the better. Present proofs are by no means conclusive.

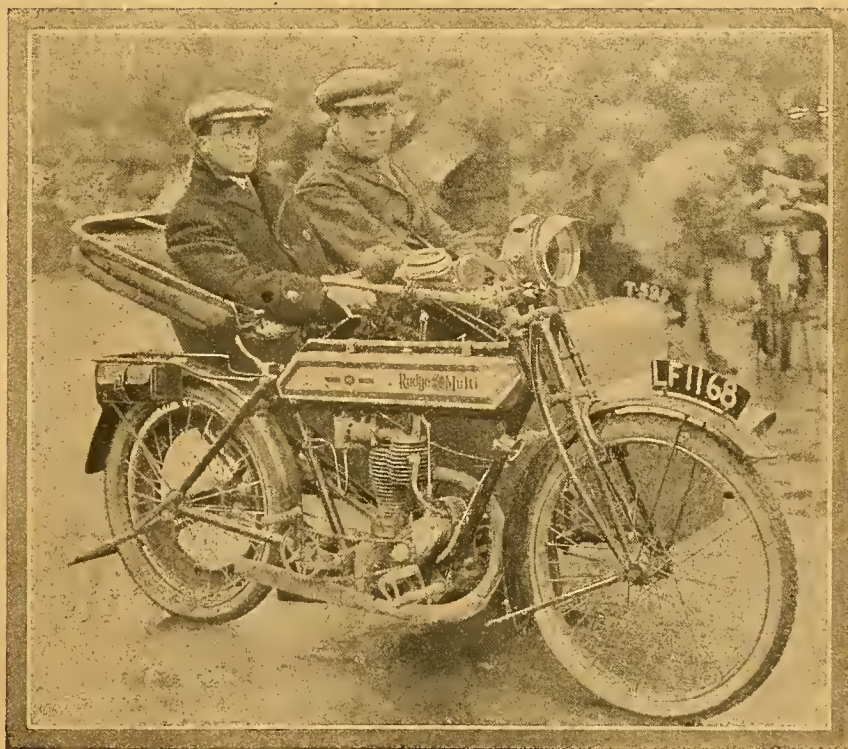
### Steel Cylinders on Motor Cycles.

Is it likely that steel cylinders will revolutionise track racing? We are inclining to such an opinion. Ever since we published the first mention that S. L. Bailey was using steel cylinders on his Douglas there has been considerable discussion in trade circles. This week we describe an attempt on world's records, when he accomplished nearly 73 m.p.h. on a 350 c.c. machine.

The subject of steel cylinders is of absorbing interest at the present time, and in our next issue we shall publish an informative article concerning the use of steel cylinders for motor cycles, by a well-known expert.

### A Two-seated Sidecar.

A sidecar attachment possessing the advantages that both driver and passenger sit side by side, and may also be protected from the elements by a hood and screen, is about to be placed on the market by Messrs. Lloyd, Dunn, and Co., of Redbourn, Herts. It is on the lines of the Davis-Double which was introduced a couple of years ago. The clutch and brake pedals are arranged inside the sidecar body, the carburetter control levers are mounted on the special handle-bar, and the valve lifter is attached to the seat-pillar for cooling the engine downhill. We have heard good accounts of the comfort and cleanliness of the machine, which will be adaptable to most makes of motor cycles.



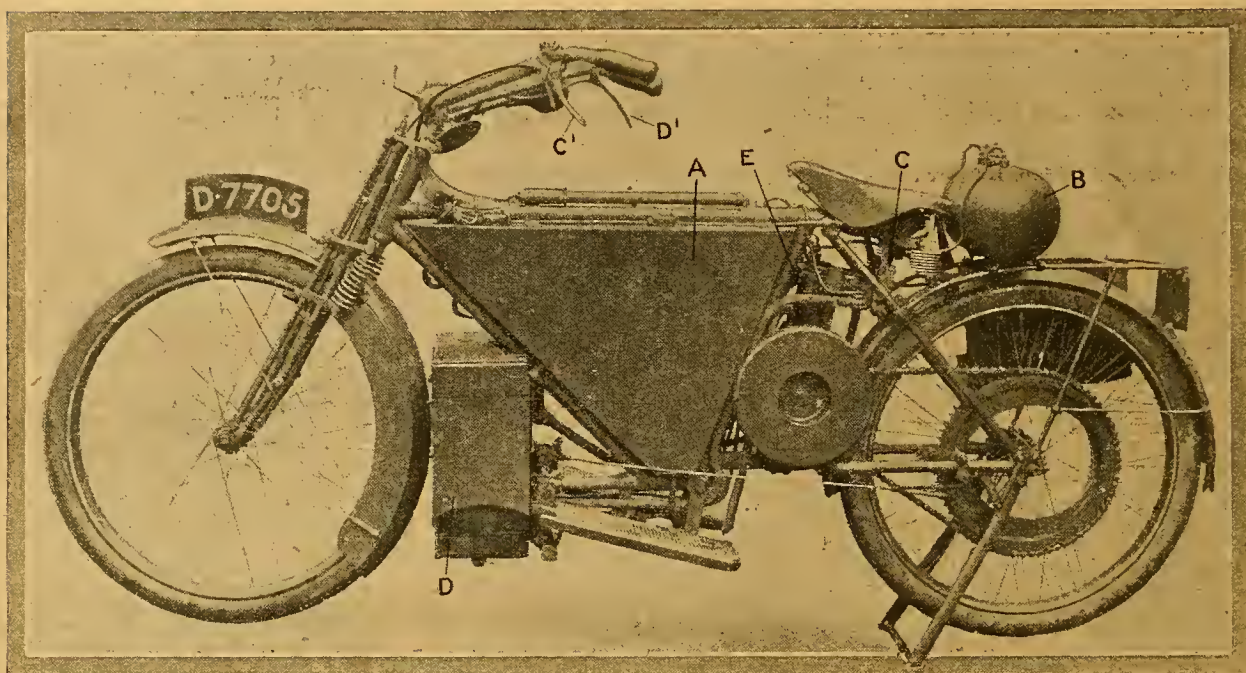
A DOUBLE SEATED SIDECAR.

A patented sidecar attachment known as the U & L, made by Messrs. Lloyd, Dunn & Co., of Redbourn, Herts. It will be placed on the market in the course of a few weeks. (See paragraph above).



# A STEAM MOTOR BICYCLE.

A NEW AND PRACTICAL DESIGN BY STEAM CAR MANUFACTURERS.



Complete view of the Pearson-Cox steam motor bicycle.

A. Water tank. B. Paraffin tank. C. Steam release valve. C'. Steam release valve lever. D. Generator or boiler. D'. Water control valve lever. E. Steam pipe.

**W**E have referred previously to the possibilities of the steam motor bicycle, and in 1909 published a description and photographs of a steam sidecar machine, which was actually in use for some little time.

It is now our pleasure to make the announcement that Messrs. Pearson and Cox, Ltd., Shortlands, Kent, who are manufacturers of light steam cars, have been giving considerable attention to the question of propelling a motor bicycle by a steam engine. They have been experimenting for about two years, and have evolved the machine which is the subject of this article.

The illustration of the complete motor bicycle shows it to be fairly neat and by no means displeasing to the eye.

The engine is set in the old Ormonde position behind the saddle tube, and the diamond frame is taken up by the water tank, while fitted transversely across the forward ends above the footboards is the generator or boiler. The engine has a single acting cylinder, and develops 3 h.p., with a bore of  $1\frac{3}{4}$  in. and stroke of 2 in. A single acting engine is the most simple type, and dispenses with the need for glands and packing. There are very few parts, which are as follows: Cylinder, piston, flywheels, connecting rod, crankshaft, two mushroom valves, and a simple type of plunger pump, worked by an eccentric off the crankshaft. The valves are operated by means of cams and rockers, the cams being keyed one to each side of the crankshaft. The valves have a lift of  $3\frac{3}{32}$  in. and rarely need attention. The feed water pump is of the vertical plunger type, having double suction and delivery valves. The generator burner is of the

horizontal Bunsen type, practically noiseless, and burning paraffin; it is fitted with a hand operated valve for reducing the flame when the machine is at rest.

## Starting from Cold.

In the present model the starting is somewhat crude and takes about ten minutes, but in the new type a small spirit lamp will allow the main burner to be lighted within five minutes. The generator consists of horizontal layers of specially drawn weldless steel tube, the various layers forming four sections, which are coupled together by means of unions placed outside the rectangular casing. A section, therefore, can be replaced with ease if one be damaged. It is impossible for the generator to explode, owing to the small quantity of water and steam at any time in the generator and to the extremely strong form of construction afforded by the small bore tubing, which will withstand a pressure of 7,000 lbs. to the square inch, although the actual working pressure varies between 100 lbs. and 500 lbs. to the square inch.

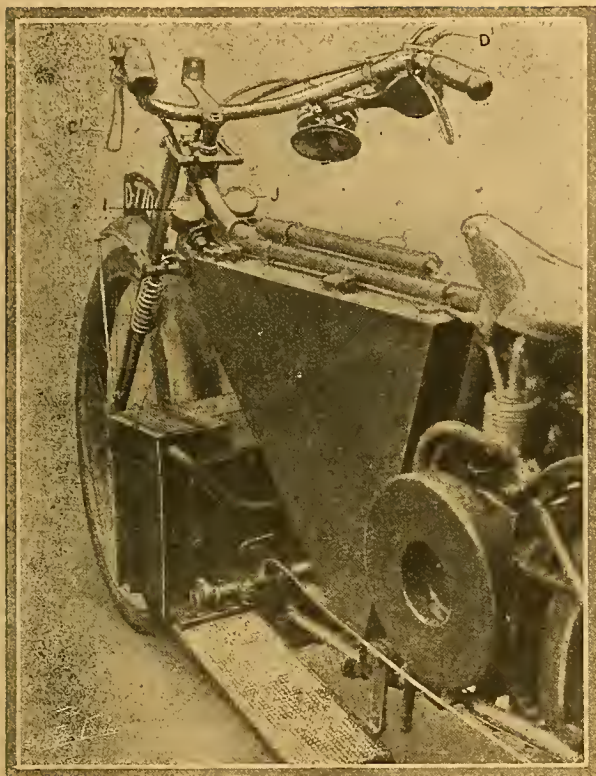
## Transmission.

The drive from engine to the back wheel is by a single chain, and the gear ratio is  $3\frac{1}{2}$  to 1. The inner flange of the large chain wheel acts as a bearing surface for the internal expanding rear brake.

On the occasion of our visit to Messrs. Pearson and Cox's works we were interested to see the machine started up from cold. In the first place, a small quantity of methylated spirit was poured into a trough running round the burner soaking several wicks and then lighted. After about ten minutes sufficient heat was obtained to allow the paraffin carried in the tank behind the saddle to be turned on, while pressure was



## A Steam Motor Bicycle.—



The control arrangements.

- C. Steam release valve lever. D. Water control valve lever.  
I. Paraffin pressure gauge. J. Steam pressure gauge.

obtained by means of a hand pump fitted to the off-side of the machine, until the gauge in the pressure tank on the near side showed a pressure of 30 lbs. to the square inch. The paraffin vapour valve was then opened and the burner lighted.

As the engine is of the single-acting type, and depends upon its own pump for delivering water into the generator, it is not self-starting, and, in consequence, the machine must be walked for a yard or two before it will start. On the stand it is only necessary to pull up the back wheel slowly once or twice.

**Control and Running.**

At this stage we must say a few words concerning the control, which is of the simplest possible nature. Adjacent to the offside handle-bar grip is a lever controlling the quantity of water supplied to the generator, and close to the near side handle-bar grip is a Bowden lever, which, when raised, closes the steam release, to which we shall refer later.

To start the engine the feed water control is opened to its full or nearly fullest extent, and after the back wheel has been turned round the engine will start slowly at first and then rapidly accelerate. The water control lever is then adjusted till the machine assumes a speed of twenty-five or thirty miles an hour, and then left in this position. This position of the

water lever provides ample reserve for hill-climbing, or for a short burst of speed. To stop the machine it is only necessary to let down the steam release valve lever on the near side, which instantly allows any steam there may be in the generator to pass into the water tank.

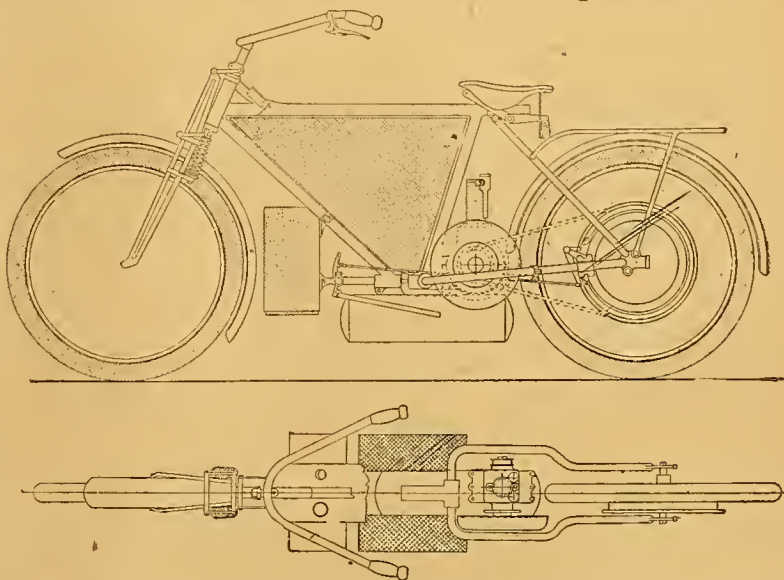
We were allowed to take the machine to the nearest hill, and found it very easy to control and start, and capable of extreme flexibility, so much so that it could be turned round in the ordinary suburban road without the rider dismounting and with the engine "firing" at every stroke.

On the hill, which was approached at a particularly slow speed owing to the appalling nature of the surface, as soon as the water control lever was opened the engine took hold and brought us to the top at a very smart pace, easily beating as regards acceleration a well-known machine with  $3\frac{1}{2}$  h.p. petrol engine which was following. Naturally, this brief trial was totally insufficient to give any idea of the capabilities of the machine during an extended run, but we hope to have an opportunity for a longer trial at no very distant date. The machine we tried is absolutely the first of its type, and a few further points concerning it may be of interest

**Exhaust.**

The moment the water reaches the generator it is flashed into steam, and passes through the steam pipe (the lagged tube shown in the illustration of the complete machine) to the cylinder. After having done its work the steam enters the exhaust pipe and passes through two tubes on either side of the generator casing, on the lower portion of which holes are bored. The exhaust steam is, therefore, able to get rid of the by-products of the burner by creating a down draught, and it issues from the pipes in an invisible form, owing to its high temperature.

Although only of the single-acting type, the engine has a considerable advantage over the four-cycle petrol motor, as the piston receives an impulse every down stroke. As the hand control is entirely on the quantity of steam the boiler is allowed to generate, it will be



Elevation and plan views of the new Pearson-Cox steamer. The engine, it will be observed, is placed vertically and slightly lower than in the experimental model.



### A Steam Motor Bicycle.—

seen that, by turning on the full supply of water, the steam pressure is immediately raised, and the engine will develop its full power on a steep hill, even if travelling very slowly; in consequence no change speed gear is necessary.

Owing to the fact, however, that the engine is not self-starting, a plate clutch in the hub would, perhaps, be desirable, or self-starting could be obtained by the use of a hand pump to inject water into the generator tubes.

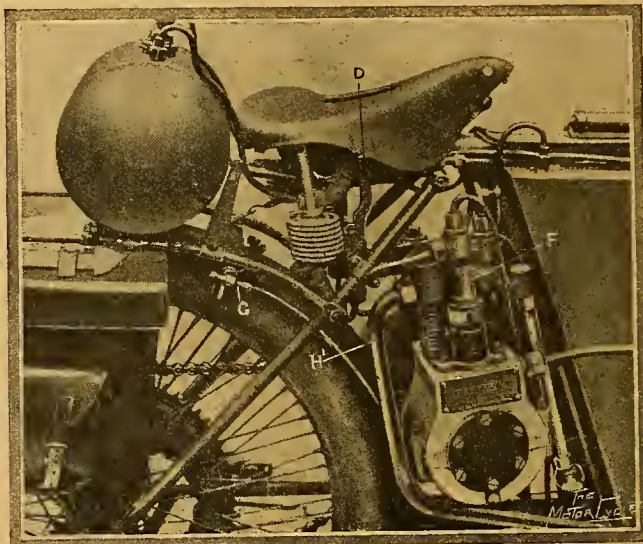
The advantages claimed by its makers are silence, smoothness of running, great flexibility, and wonderful hill-climbing power.

### Modifications on the New Model.

The present type carries sufficient petrol and water for about forty miles, but the new model will have a stroke of 2 in. in place of 2 in., a new type of generator (the burner of which can be started in about five minutes) and larger water and paraffin tanks.

The line elevation on previous page shows how the latest model will look when finished, and we certainly think readers will agree that the design is very neat and symmetrical. On the new model the water and fuel capacity will be sufficient for seventy miles, and the fuel will cost about 4d. a gallon. Whereas the experimental machine weighs 145 lbs., the new one will weigh 150 lbs. Engine lubrication is by crank case splash, a hand pump being situated on the forward

part of the tank, from which a charge of air-cooled or special steam oil must be injected every nine miles. The maximum speed on the road is between forty and forty-five miles an hour—surely sufficient for reasonably-minded tourists.



The power unit.

A. Paraffin tap.  
D. Water control valve.

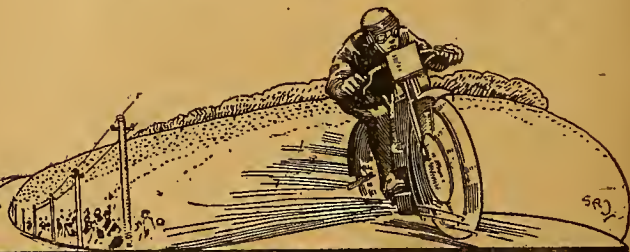
F. Double-acting water pump.  
H. Exhaust pipe.

## YE FEAST OF THE T.T.

And there had been many wet days in the land.  
And it came to pass that the Feast of the T.T. drew nigh,  
and the Masters which are called Manufacturers did  
murmur and say unto each other,  
Behold, on the morrow shall our six-speed model wipe from  
the face of the earth all manner of change-speed  
devices.  
And it came to pass that on the day, Monday, the people  
who had travelled from afar did rejoice and say,  
We will arise and congregate about the banner of Start.  
And, notwithstanding the early hour, a great multitude had  
assembled together to behold the start.  
And one Ebbelwhite did lift his voice and say "Go," upon  
which James, who is surnamed Haswell, did gather  
his girdle about his loins.  
And James, who is surnamed Haswell, hastening into his  
saddle did wend his way amidst an exceeding great  
noise and dust.  
And on the tenth hour it became monotonous, inasmuch  
that we said one to another, Let us remount and depart  
unto Mount Snaefell;  
For it is written in the book *The Motor Cycle*, He who abides  
at the Mount shall find his reward.  
So we arose and smote (two strokes) the throttles of our  
asses, which are called Scotts, and did ride exceeding  
fast nigh unto "blinding."  
And behold we came unto the Temple of Bungalow;  
And being athirst we lifted up our voices and cried, Give  
us of the waters of Soda and Whisky.  
Having satisfied our thirst we assembled together on the  
brow of the Mount.  
And it came to pass that we did hear from afar an exceeding  
loud noise like unto the roar of the sea and wind.  
And behold one C. R. Collier, son of H. H.  
Collier, flashed o'er the brow on his mount,  
which by the prophets is called Matchless.

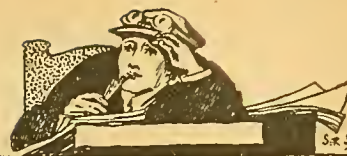
Then came one Frank, who is surnamed Applebee, riding  
nigh on to the wayside;  
And he also was exceeding fast—  
Yea, verily, inasmuch that we were afraid.  
And many riders flashed by on their iron mounts—verily, a  
pleasing sight—  
And our spirits ran high.  
But lo! from afar off came the noise which is called mis-  
firing,  
And we lifted up our eyes and beheld one coming slow, inso-  
much that he wobbled:  
His spirit was low, yea very low.  
Now at the twelfth hour the multitude were an hungered,  
and the men folk did fetch from their tents, called  
sidecars and carriers, loaves of bread, and small  
bottles;  
And many were the longing glances of those called com-  
petitors at our pitchers of Waters of Bass.  
And it came to pass that we did again remount, and rode  
unto the city of Douglas, even unto the foot of Bray  
Hill, whence cometh many people.  
And we did inspect the machines, from the 1,000 c.c.  
racer to ye olde corks.  
Then did we say one to another, Let us back to our tents  
or the temples will be closed, for the hour is late.

—NOB WARD.





# A Pretty Pickle. By X.Y.Z.



**C**HRISTMAS is always a festive season with me. I am one of those old-fashioned individuals for whom romps and puddings and crackers and waits never stale; and like most outdoor men I find the long autumn's grind in a City office particularly trying. With a grey blanket of fog hanging permanently over streets filmed with the greasiest slime, and fifteen miles of traffic and tramlines barring one off from the open road in every direction, there is small temptation for a Cockney who lives and works in the heart of London to take out his motor cycle between September and Yuletide. I am usually in high spirits when August comes round, but as Christmas closes down on me I get positively humpy.

This year I don't mind admitting I was more than usually above myself as the winter holiday approached. I once fancied that nothing had such power to enthuse me as a new overhead-valved engine with ramshorn handle-bars and the exhaust of a Mauser rifle, but I'd changed my views last August. You see, I met Mabel! She was staying with an old college pal of mine, who offered to put me up for a night when I was touring the Highlands, and though I was riding a brand new machine with a three-speed hub, she put it clean out of my head.

## Precipitous Mountain Climbs Forgotten.

I planned to spend one night at McDermott's with the idea of climbing three or four bouldery caterawls on the back side of the stupendous crag that overhangs his ancestral castle. But when I got home and wrote up my mileage log I found I'd stayed a whole week, and that the precipitous hairpins on that mountain side were still virgin soil so far as motor bicycles were concerned. In fact, I believe I should have been there yet, only unfortunately she had to come south after a week to nurse a sick aunt or something.

She was one of those rare girls who remind you of a 350 c.c. twin in perfect tune. Lots of go, never a misfire, full of surprises. Danced like an angel, sang like a nightingale, eyes that went right through you and gave you a sort of thrill every time she looked at you. Genuine thoroughbred, 80 mm. waist, or thereabouts, hung on springs—oh, she got me all the way.

But there was a miserable little rotter staying up there—fellow called Askew—he'd been there a month, and he sat in her pocket right up to the last lap. I could see she didn't fancy him particularly, but he sort of hung on to her back wheel, and it didn't matter how much throttle I put on, I never really left him.

Well, before she left she let out that she had a brother in a Mincing Lane shipping office, with whom our firm do good business, and you bet I spent that autumn making good with him. Couldn't tell you how many dinners and halls I stood him, and the result at last was an invite to spend Christmas up at their place near Thirsk.

I laid my plans well.

## I Went in for a Cycle Car.

It went against the grain to sell my motor bicycle, but her brother Geoffrey, let out that Askew was coming too. Now Askew, as I've pointed out, behaved as if she were a motor bicycle and he were a sidecar—permanently attached type—and I thought a cycle car was the one chance of an occasional *tête-à-tête* with Mabel. So I traded off the bicycle for a sort of tandem spider quad, or cycle car as it is called now. If I'd waited for the Show I should have laid in one of the new small car breed, with two seats side by side, and a hood and screen. As it was, I fixed on this tandem.

They're not half bad; you can put a big suit case in the front seat, and it doesn't keep banging you, as it would on one broad seat. I put on my oldest clothes, with a couple of sweaters under my jacket, and a huge oilskin and sou'-wester in case it rained. Then a few days ago I cleared town, and headed the narrow beak of my new four-wheeler dead north. I had some beautiful skids out Barnet way. Never knew these light four-wheelers pirouetted before, but you can take it from me they aren't jam with narrow smooth tyres on a greasy tramline junction. And you're so helpless—you can only sit there and look amiable, while your little coffin on wheels bounces from one motor 'bus to another. I registered a vow to fit steel studs before I started back.

## On Dick Turpin's Highway.

Once clear of the tramlines and traffic I got along faster than I should have done on two wheels, and by the time I was North of Stamford I was thoroughly enjoying myself. A cycle car doesn't steer so trickily in thick mud as a bike does, and as my seat was made of a broad piece of webbing slung between two steel crosspieces, it didn't bump like a motor bicycle does, while the dash comes up nearly breast high, and the engine diffuses a grateful warmth along the lower regions, so that only your nose gets really cold. Moreover, the tandem type causes little wind resistance, and the new 90° 10 h.p. engines run like oiled silk. I buzzed along a bit with the roads like a mixture of porridge and isinglass. Then came my Chatalja (hope that's spelt right—I'm better up in French motor lists than war maps).

I was spinning along just north of Newark when I saw a big Daimler limousine standing by the roadside with the bonnet off. Three men were playing about with spanners and monkeying round the engine in an amateurish sort of way, and through the misty windows I caught a glimpse of dark eyes and beauty in the cosy glass drawing room behind. One of the fellows held up his hand as I shot alongside. He was a Frenchified sort of Johnnie with a trim little black moustache.

"Excuse my stopping you, sir," he said very politely, "we are in a frightful hole. Can you give us any assistance?" I unsheathed myself—that's the

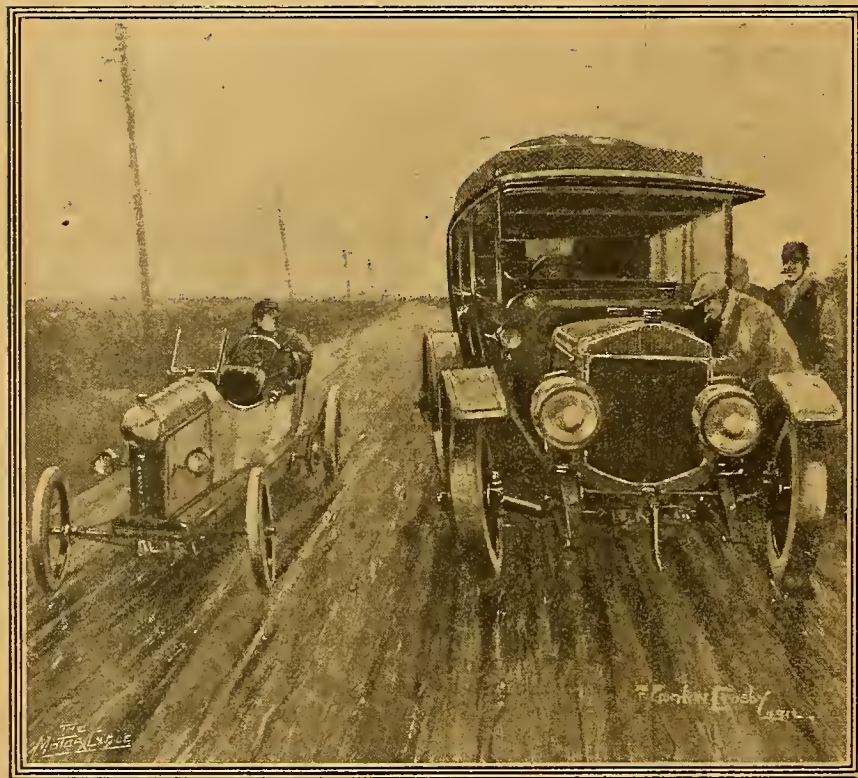


### A Pretty Pickle.—

only word which describes drawing oneself out of a coffin tandem when one's swathed in wraps. The girl opened the door of the big car and stood on the step, eyeing the congealed mud on the road with evident disgust. He went on:

### A Damsel in Distress.

"This lady, Miss Carstairs" (we bowed) "was telegraphed for early this morning to York, where her father has suddenly been taken dangerously ill. Our ignition has given out—I'm afraid there's a short circuit somewhere in the armature of the magneto. Your little machine looks very speedy. I wonder if you will waive the conventions and convey her to Doncaster, where she can catch the afternoon express? Some hours must elapse before we can obtain another car, and in any case she is not inclined to trust so urgent a matter to a motor after this disheartening *contretemps*." Wherewith he waved contemptuously at his magnificent car.



"Spinning along just north of Newark, I saw a big Daimler limousine standing by the roadside."

I thought a moment. Doncaster was on my road. The job entailed no delay for me, and the girl was indeniably pretty.

"By all means," I said heartily. "My name is Frank Griffiths, and I am going through to beyond Thirsk. I shall be only too pleased to be of service. Can I send a car out from Retford for the rest of you?"

He refused the suggestion, saying they knew some people who owned a car and lived a few miles away, and they would get a cyclist to take a message. The

men joined in thanking me, and prepared to ensconce Miss Carstairs in my front seat.

There was one obvious snag—she was dressed in an ordinary morning costume, which might be comfortable enough in a heated limousine, but was scarcely suited to the open front seat of a tandem cycle car. However, she rapidly removed her smart toque, one of the men produced a woollen arctic helmet, and helped her into his big frieze leather-lined ulster. Then he lifted her bodily off the car step to pack her into my front seat, when my suit case caught his eye. He looked enquiringly at me.

"May we put this on the train for you?" he enquired. I consented readily enough, but was rather piqued when they put her dressing case on her knees without a by your leave. One of them started my engine, and we shot off.

### Comforted and Reassured.

I made a few enquiries about her father, which she answered. He was a retired general, and had succumbed to a stroke—his second—and she was evidently consumed with anxiety lest she should not find him alive. I comforted her by tales of an imaginary uncle of mine, who after his sixth stroke could still play golf in all weathers.

She cheered up a little, and chatted quite pleasantly from time to time. It was curious to see how the arctic helmet and ulster transformed a slim, pretty girl into the semblance of a burly man.

We soon ran into Retford. Here I stopped to get petrol, and noticed to my disgust that the near-side belt had dropped off somewhere; that's the worst of these solid axles—one belt disappears and the other keeps on driving, and you never know. I hadn't a spare, and the garage people had only got  $\frac{7}{8}$ in. in stock, whereas nothing under  $1\frac{1}{8}$ in. is any good for cycle cars. They sent a man off to procure a bigger size, and I coaxed my *protégée* into a neighbouring hotel.

As I lifted the suit case off her knees I was struck by its tremendous weight—I fairly had to heave to shift it. She noticed my surprise: "Silly things, these fitted dressing cases," she said pettishly.

I got her into the hotel, and when she pulled off her gloves I saw she was trembling with cold. So I paternally ordered half a bottle of Heidsieck. She removed the hideous helmet, and I saw she was a real scorcher; in fact, she was the trickiest looking girl I ever saw. The champagne put a sparkling colour into her cheeks, and I was just feeling quite proud of escorting such a stunner, when

### There came a Horrid Blow.

A biggish car had just stopped to replenish at the garage, and who should come into the lounge but



**A Pretty Pickle.—**

Askew with two other fellows! He gave my companion one quick glance, and then pretending not to recognise me, whispered something to his companions, and went out quickly. The car swept off in a moment, and cold shivers went through me. I could see a pretty garbled version of the incident going round the dinner table that night at Thirsk, and Mabel would have a pump-assisted, Alpine-sized radiator welcome waiting for me. I vowed never again to succour charming damsels in distress. A pair of new 1½in. belts arrived at that moment, and I took the road again feeling rather anxious and discomfited.

The champagne seemed to have caused oblivion of her parent's mournful condition in my companion's breast, and she grew quite arch; in fact, she told me a few stories which would have done with a little fan cooling. I was not half sorry when we got to Doncaster and I unloaded her at the station, dressing case and all; the station constable assisted her to carry the thing into the booking office. I thanked my stars I was rid of her, and divided my attention for the rest of the way between keeping the car on the road in the dark, and deciding how I could carry off the matter with a high hand at Thirsk, and thaw the icy reception likely to be prepared when Askew had described his view of me drinking champagne in a public lounge with a rather fast-looking girl.

To cut a long story short, I arrived at Mabel's home about 11 p.m. half dead with cold. The butler met me on the step, and in response to my enquiries informed me that my suit case had not arrived! They were having an impromptu dance, and there was I with stained and musty tweeds for my only wear.

He suggested a hot bath, a little supper in my room, and bed; probably my clothes would arrive before breakfast next morning. Yes, Mr. Askew had got in just after dinner, and was dancing. I did not feel like removing false impressions in my present garb, and I followed the worthy butler's advice. I was not exactly looking forward to next morning, but to tell the truth I was so tired after my long drive that I had no difficulty in going to sleep, and I don't remember any dreams.

**Arrested for Burglary.**

When I first awoke, I thought it was a nightmare. A gigantic policeman was standing by the bedside, with another bigger brute in blue behind him; Mabel's brother and father and that swine Askew were in the background, while some of the servants, looking very excited, were craning their rubber-necks round the edge of the door. As I stared in amazement, the sergeant said: "I'll trouble you to come along with me, sir; I have a warrant for your arrest on the charge of being concerned in the big jewel robbery at Sheffield yesterday!"

Protestations were useless. The family were plainly convinced of my guilt. The police cleared the room, helped me into my fusty old tweeds, handcuffed me, and marched me out down the big staircase and across the hall into a cab.

Talk about running the gauntlet; all the guests—many of them pretty girls I didn't know—were waiting there to peep at the monster, and Mabel among them, with her arm through Askew's, who was smiling his slimy "knew-he-was-a-rotter" kind of grin.

During the four miles' drive into Morpeth I astonished the police by my language, and they told me that the news of "my burglary" had been wired to all the adjacent railway stations, as the Sheffield police thought I should strike for town; that by a gorgeous fluke the railway police at Doncaster noticed the weight of my companion's handbag; that they hadn't sufficient proof to delay her, but noticing she had booked to Hull, they had wired there, and she was taken just as she was boarding the steamer; that they wired up the road and traced me by my registration number; that they expected there'd have been a few jewels missing round Thirsk before the New Year if they hadn't collared me; and they concluded by beseeching me to own up like a man, and say whether "my gang" had worked the dozen successful jewel raids of the past twelve months, and by prophesying that if I turned King's evidence I should get off with fifteen years?

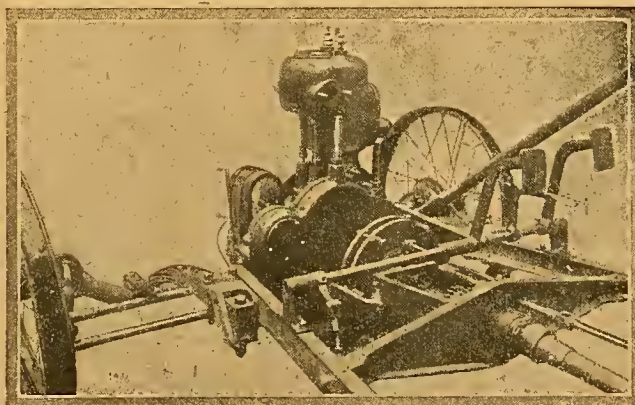
By the time we reached Thirsk Police Station my brain had cleared a trifle. The top dog in blue there had a head on his shoulders. I produced my papers, told him my story, and got him to wire to my governor at our London office. Half a dozen wires proved that I'd been in London when the Sheffield crib was cracked, and inside four hours I was released with a thousand apologies, and tooled back to Mabel in the Chief Constable's own car.

**The Thieves got away after all.**

I found my suit case had arrived—so the thieves were not quite devoid of decency. It came by rail from town, and the police said the Daimler had been stolen from a private garage at Sheffield; it was found hidden in a wood a few miles from Grantham in perfect running order, its occupants having evidently walked into the station, and trained south. They got away to the Continent comfortably, and simply unloaded that girl on me because they thought it safer to divide forces, and to send the swag off *via* Hull.

Mabel soon consoled me. Askew wasn't exactly popular among that house party; he'd been bragging all morning that he was the only one to see through me. I danced six waltzes with Mabel that night, and I don't mind telling you that for certain reasons I shall never own another motor bicycle, and that my next cycle car will have side by side seats.

Mabel says the one I've got would be all right if I were a little nearer to her.



Single-cylinder water-cooled engine of the Barimar four-wheeler, sold by Barimar, Ltd.



# THE INTEREST IN RUNABOUTS.

By B. H. DAVIES.

IT will be very interesting to watch the development of cycle cars during the next two years. In one respect, and in one only, the circumstances are identical with the premature tricar boom of 1905-6, which ended so disastrously in the extinction of a new type. The public were clamouring for a new brand of light passenger-carrying vehicle, in which one or two makers had achieved some small success during the previous autumn. As a consequence hosts of mushroom firms sprang into existence, marketed untried designs, and left the public to perform the experimenting which ought to have been done secretly by designers and makers during the preceding year. The results were catastrophic. Delivery was difficult to obtain during the next spring, as manufacturers realised their new designs were not roadworthy, and the breathlessly-made contracts for material and provisions for construction fell into hopeless confusion. Buyers who obtained delivery encountered heart-breaking experiences on the road. Within twelve months the tricar was almost as dead as the dodo, and the passenger-carrying department of the industry received a staggering blow, from which it has yet to recover. The prejudice thus created still survives, and considerably hampers the path of firms who make infinitely superior tricars to-day. Beyond contradiction this element of unpreparedness figures in the present situation. Twelve months ago, six months ago, yes, even twelve weeks ago, many firms now posing as cyclecar manufacturers had never dreamt of manufacturing a passenger vehicle other than sidecar outfits. The last time the trade was taken by storm in this fashion the effects were duplex. Delivery was delayed until far on in the ensuing season, and when machines were delivered they were grossly unsatisfactory. The interest of 1913 will consist in watching how far history repeats itself.

## Disappointments in Delivery.

I am quite certain the 1905-6 *débâcle* will not be repeated *in toto*. Cycle cars will not die out; they have come to stop. I find grounds for confidence in the fact that perhaps half-a-dozen makes are already established; they have won their spurs in many a fierce test, and they are already manufactured on a commercial basis. If all the newcomers were failures, the pioneers are sufficiently numerous and sufficiently honest to create a lasting demand. After this preface to prophecy, we may go a step further and admit that delays and disappointments in delivery are likely to be a trouble next spring. The industry is much better organised than it used to be, and the purveyors of parts and material are in a more established position, while a number of firms have laid their plans in statesmanlike fashion. Nevertheless the last-minute advent of perhaps fifty firms into a new branch of the industry must imply much congestion and confusion between now and Easter. Such delays will, however, be limited to a minority, and will only be temporary.

Retracing past history, we remember that the prematurely-introduced tricars were slain by bad ignition, bad carburettors, bad engines, shoddy water-cooling devices, bad brakes, bad clutches, bad springing, light tyres, and details connected with three-wheel design. Of these counts in the indictment, the cycle car need

only be afraid of bad springing. The all but perfect ignition, carburation, engines, cooling, brakes, and clutches can be transferred with only detail alterations to a cycle car chassis; and there is no reason for supposing that detail troubles of these kinds need be anticipated. As most cycle cars are four-wheelers, tyre troubles need not be feared. Similar engines have transmitted their power for years past through a single  $2\frac{1}{4}$  or  $2\frac{1}{2}$  in. tyre, and the addition of an extra driving wheel should improve the tyre question; if any makers underyre their cycle cars, it should only be necessary to fit an "extra fort" cover on the existing rims.

## The Problem of Springing.

Springing is, however, sure to cause much heart-burning, especially on cycle cars fitted with vibratory engines and no by-pass jet. The engine of a cycle car must often be left running with the vehicle stationary; and we know how we get shaken when we run a motor bicycle engine free; the same engine will shake more when it is mounted on a light spidery four-wheeled chassis. The 90° engine and pilot jet carburettor will soon reduce engine vibration to negligible limits. Road vibration still remains to be reckoned with, and will take much more killing. Men accustomed to speedy bicycles will not be satisfied with a cycle car which cannot touch 40 m.p.h. at a pinch, and a smooth-running vehicle, weighing from 3-7 cwt., and capable of the speed mentioned, will not hold the road if it is sprung as simply and crudely as many designs which I have seen. This is going to be the real crux of the cycle car movement, as long-distance drivers who purchase some of the experimental models will rapidly realise. A London-Edinburgh trial on sundry models will be exhausting for men, and injurious to their fair passengers. For the rest there need be no anxieties. The chassis problems are the same problems which automobile engineers have long since solved, only they are now to be viewed through the wrong end of a field-glass. Some of them—*e.g.*, silence and steering—may require more attention than they have yet received, but outside the springing there is nothing to be anxious about.

## Sidecar or Cycle Car.

I imagine that many a cautious buyer, particularly if his purse be shallow, will remain faithful to the sidecar for a time, and that by Olympia, 1914, the boom in cycle cars should touch its zenith. In the interim the carelessly-planned and made vehicles will gracefully retire from the unequal struggle; the trade will concentrate into fewer hands; and the survivors will be ready to manufacture on a large scale. If I were purchasing a cycle car this week, I should inspect every detail very closely, and I should select a firm with a well-known reputation for good workmanship. Having made my choice I should insist on a prolonged road trial, and I should steer the machine over the worst roads I could find, for I remember that many a £400 car, with a ton to glue it on the road, and long springs and rebound snubbers, is excessively uncomfortable on bad roads; and I should realise that a vehicle at a quarter the weight, with very elementary springing, is likely to be even more kangarooish in its progress.





A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

#### Age Limit for Tricar Driving.

As I am thinking of purchasing a tricar, I should like to know whether a boy of sixteen would be allowed to drive a three-wheeler.—C.J.P.

A boy of sixteen would not be allowed to drive a three-wheeler if it were sufficiently heavy to necessitate it being registered as a motor car; that is to say, over 3 cwt. unladen. Seventeen years is the minimum.

#### Silencer Frames.

(1.) What advantages has the dropped frame chassis got over the ordinary, especially as to springing, comfort, safety, and easy running? (2.) Do you consider the arrangement of cantilever springs better as regards comfort in springing and durability than the C springs? (3.) Can I rely in safety on three-point couplings when using a well-known make, passenger's weight not to exceed 12 stones?—G.B.S.

(1.) The dropped frame chassis gives a lower position to the body, with ample room for the springs. (2.) C springs with shackles are quite as comfortable as any other method. (3.) Three-point couplings constructed by well-known makers are quite safe, but four are better.

#### Making an Engine Reverse.

I shall be much obliged if you will let me know (1) if it is a difficult matter to reverse an ordinary single-cylinder motor cycle engine, and (2) if it is possible, what alterations are to be made to the timing of the valve cams and ignition?—W.E.B.

(1.) Whether it is a difficult matter to reverse a motor cycle engine would depend largely on details, such as whether the inlet valve was mechanically or automatically operated; if the latter, whether the inlet cam was formed in one with the same camshaft as that carrying the exhaust cam; whether the engine cylinder was off set, and whether finger levers were interposed between the cam face and the valve tappet; but, in any case, if an engine is designed to run in a given direction, it is not advisable to alter it. (2.) The alterations necessary to the valve setting, and possibly to the cam contours, would best be discovered by making a diagram of the valve working, and the valves and ignition must be re-timed. If you cannot do this—and you must reverse the running—put the matter in the hands of a really good engineer.

#### Silencer Regulations.

Would you please inform me whether there are any specified requirements in regard to the silencer of a motor cycle under the new Act re cut-outs? My machine is at present very noisy without a cut-out, and I want to experiment with a silencer of my own design.—E.P.L.

The new regulations, which come into force on March 1st, require that there must be no outlet for the exhaust before the latter passes through an expansion chamber. On the other hand, even if an expansion chamber be fitted, the police will have the power to stop a machine which causes a nuisance by making too much noise.

#### Newport (Mon.) to London.

Will you kindly give me the route from Newport (Mon.) to London?—W.E.

There are two ways of reaching London from Newport. Probably the better way is to go by road to Severn Tunnel Junction and take the machine by train as far as Pilning; then make your way through Filton, Mangotsfield, Marshfield, Chippenham, Marlborough, Hungerford, Reading, Slough, Hounslow, to London. Or you can make your way through Chenstow, Lydney, Newnham, Gloucester, Cirencester, Fairford, Lechlade, Wantage, Wallingford, Nettlebed, Henley, Maidenhead, Slough, Hounslow, to London. The first-named route is very much shorter.

#### Extra Air Intake.

I should be pleased to have your opinion on the subjects below.

(1.) Does the fitting of a Bowden extra air intake, on the induction pipe between engine and carburettor, contribute towards (a) economy in petrol, (b) speed, and (c) general efficiency? (2.) Does it not lessen the suction on the jet, and at the same time detract from the correctness (if I may so term it) of the mixture? (3.) Is the practice of giving overlap more general than not giving it, and what is the usual amount allowed on engines so built?—MECHANIC.

(1.) All the items mentioned depend upon the general adjustment of the carburettor. If the carburettor is right, an extra air inlet will not materially improve the running. If, however, it is adjusted distinctly on the strong side, an extra air inlet would greatly tend to

economy and might improve the speed a little. (2.) The only way in which the device could detract from the correctness of the mixture would be if it leaked at all when fixed, or were wrongly used. (3.) The practice of giving overlap on valves is somewhat on the increase in motor cycle engines, but, on the whole, we should say that the "no overlap" setting is the more general. Overlap from three to five degrees may be allowed.

#### Sidcar Axles.

(1.) What sort of steel is it advisable to make sidcar axles of—mild forged steel, cast steel, or would tool steel be good if left in a soft state? (2.) Are the cones case hardened or hardened and tempered right through? (3.) The broken axle is  $\frac{3}{4}$  in. diameter (but had a bad flaw in it). I can increase the diameter of new one to  $\frac{7}{8}$  in. Provided there was no flaw anywhere in the metal, do you think this would be absolutely proof against another similar breakage in the future? Can you give me the size of axles generally fitted to the heavy coach-built sidcars, say, Milford's or Montgomery's? (4.) Re tyre wheel rims, which is the best size (diameter) of rim to order? I have enquired of several different tyre firms and each one appears to differ slightly from the others. 22 $\frac{1}{2}$ , 22 $\frac{3}{4}$ , 22 $\frac{5}{8}$ , 22 $\frac{3}{4}$ , have been some of the answers received. Which do you think advisable? I do not always use the same firm's covers.—H.P.H.

(1.) For sidcar axles we would recommend a mild steel of 30 or 35 tons tensile; tool steel, even if annealed, would not be suitable. (2.) In some of the cheaper work cones are of mild steel case hardened, but in best work they are of crucible steel, hardened and ground. This latter process you might find difficult. We believe several steel makers produce a steel for cones, which can be used unhardened just as it is machined. (3.) It is impossible to say whether the axle would be absolutely proof against a similar accident in the future without seeing its design; probably you would be the best judge if you bear in mind that the increased diameter from  $\frac{3}{4}$  to  $\frac{7}{8}$  of an inch ought, on the sectional area, to increase the strength 50%. Do you mean the spindle inside the hub or the part outside the wheel? (4.) We should advise you to order a standard rim specifying at the time the size of the tyre you intend to use.



### Portsmouth to Eastbourne.

**?** Is it possible to go by cycle car from Portsmouth to Eastbourne, avoiding Brighton and its tramlines?—R.G.

We suggest *via* Portsmouth, Cosham, Havant, Chichester, Arundel, Worthing, to Shoreham. Here turn left and take the old road to Brighton, which avoids the town altogether, and misses all the tramlines where traffic is likely to give trouble. Then continue through Lewes and Wilmington to Eastbourne.

### Two-stroke v. Four-stroke.

**?** I have never yet ridden a motor cycle, but hope to take up the sport at an early date. While at the Show recently I was very much struck with the simplicity of the two-stroke engine, and as an entire novice I shall be much obliged for your opinion on the following points: (1.) Is there not a greater possibility of gas escape in the two-stroke type, and do you consider this

danger adequately overcome by the device adopted in the Connaught machine? (2.) Is there not a greater liability to overheat? (3.) Do you consider the method of lubrication in use on the Connaught engine a thoroughly effective one? Is it not likely to cause carburettor trouble? (4.) From your experience, is the two-stroke engine likely to give as much satisfaction, as regards economical working, durability, and power, as the ordinary type of motor?—A.S.W.

(1.) One difficulty with a two-stroke is loss of crank case compression, but this does not occur until bearings are worn badly. (2.) There is a slightly greater tendency to overheat. (3.) The lubrication in use on this machine has been thoroughly tried. (4.) The two-stroke engine is not so economical as the four-stroke, but many two-stroke engines are now giving the greatest possible satisfaction, due to simplicity, durability, and evenness of torque, and a two-stroke Scott won the Senior T.T. Race.

### Steel Bushes.

**?** I have had a J.A.P. engine for about twelve months, and have ridden something like 1,300 miles. I find that a new bush is required for pulley side.

On examining the bush it seemed to be as much hammered as worn, as there is quite a rough edge on the outside of the bottom. To obviate the trouble of having to rebush so often, I am ordering a hardened steel bush, which I purpose fitting, and write to ask your opinion on the matter. The J.A.P. people in their specification say that the spindles are hardened.—J.H.

There is no reason why you should not use a hardened steel bush to work against a hardened steel spindle, but you will have to be very careful in fitting it, to see that the hole is dead parallel and not too tight a fit, otherwise the bearing will seize. That is one reason why bronze bushes are fitted to hardened steel shafts in preference to the other kind.

### READERS' REPLIES.

#### Misfiring on Pilot Jet.

I notice that in *The Motor Cycle* of December 12th "J.L.W." complains of misfiring on pilot jet on his own and three similar machines. I, myself, have also been troubled with the same fault in my machine. May I be allowed to suggest that "J.L.W." adjusts the air supply of the pilot jet by the means provided. I found this stopped all misfiring and the results to be quite satisfactory.—INDIAN.

*Re* "J.L.W.'s" query in *The Motor Cycle* of December 12th as to misfiring on pilot jet of 7 h.p. Indian. We have had a number of these machines through our hands, and in two or three cases have had "J.L.W.'s" trouble; this we traced to the back cylinder exhaust spring, which required renewing. — QUORN GARAGE (LEICESTER), LTD.

I had the same trouble as "J.L.W." with my 7 h.p. two-speed Indian (1912), and found it was due to a dirty pilot jet and a too close setting of the points of the plugs. Let "J.L.W." make absolutely certain that the pilot jet is clean *inside and out*. A thin wire should be run through it, as a very small particle of matter might cause all the trouble. Do not rely on merely looking through it. Let him also try the plug points  $\frac{1}{16}$  in. apart or further (the Hendee Co. say  $\frac{3}{32}$  in.), and the misfiring will probably cease.—HENRY K. LOCKHART.

#### Misfiring at Slow Speeds.

In my case, a drawback similar to that mentioned by "A.H.T." was cured by making the induction pipe joint absolutely airtight with a thin washer.—HUMBER.

### EXPERIENCES WANTED.

"L.S.V.J." (Wolverhampton).—2½ h.p. Grandex, 2½ h.p. Mead, and 3 h.p. Lincoln Elk.

"Crofter" (Dynes Powis).—Dynolite lighting set.

"T.H." (Burslem).—Hampton and Victoria. Reliability, speed, hill climbing, and consumption.

"B.M." (Paddington).—3½ h.p. Precision engine. Speed and reliability.

"Boyer" (Batley).—4½ h.p. Lincoln Elk, two-speed gear; Portland and Victoria. Reliability.



### PLEASURES OF THE PILLION SEAT.

"Oh, Algy dear, here comes a horrid motor; do be careful, darling, I'm frightfully nervous, and if you upset me I shall never forgive you."



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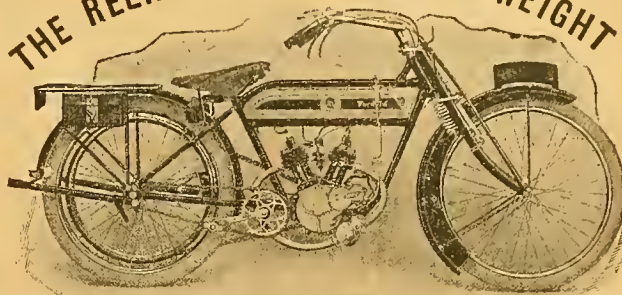
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1913 Model greatly improved. **39 GUINEAS.**

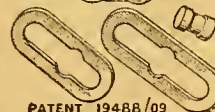
LISTS FREE.

AGENTS WANTED.

**FORWARD MOTOR Co., Summer Row Birmingham.**



All sizes, also special pattern for Watawata belts.



**SIMPLE, YET PERFECT.**

PATENT 19488/09

## 1,076 Miles in Perfect Comfort.

### UNTROUBLED BY SADDLE SORENESS

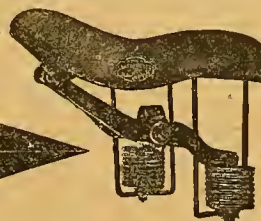
The following letter, bearing such striking testimony to the excellence of Empire de Luxe Saddles, is one of the many we are constantly receiving from satisfied customers:

41, Beversbrook Road,  
Gentlemen, Tuffnell Park, London, N.  
On my recent successful officially observed six days' trial, in which I covered 1,076 miles on a 3½ h.p. Alldays Matchless and sidecar, an A.C.U. observer was in the car all the way. I was never troubled by saddle soreness, and I attribute this to the fact that my machine was fitted with

### EMPIRE de LUXE

Saddle. There is no need for further praise, facts speak for themselves.—J. TAYLOR GIBBON.

The  
**LEATHERIES**  
LTD.,  
Sparkbrook,  
Birmingham.



Send for  
Leatheries List  
Free.  
Full of useful  
and interesting  
matter.



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**BRAY RONI**



**Acetylene Burner  
for Headlights**

Gives, from a single gasway only, an **atmospheric** flat flame which cannot become distorted and crack lens or mirror.

The Burner is of the air-injecting type—it will not carbonise.

It is now fitted with a Pressure Check, which obviates flaring.

Send for descriptive booklet of the "Roni" Burner to

**GEO. BRAY & CO LTD**  
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Ornamental Lake in Recreation Grounds, Bournville Works.

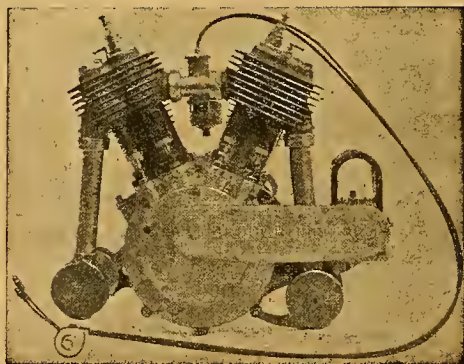
## BOURNVILLE

The COCOA de Luxe

Made exclusively from the finest cocoa beans, selected with skill and judgment. This, combined with the healthy conditions under which it is made, renders it pure, wholesome and digestible.

"BY TEST THE BEST"

7  $\frac{1}{2}$  d. a  $\frac{1}{4}$ -lb. Tin



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SEE THE FAMOUS

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**ENGINES for Solo or  
Passenger Work.**



## THE SIX DAYS' OBSERVATION TEST

of the Auto Cycle Union affords the U.H. Magneto another opportunity of proving its reliability and consistency. Mr. J. T. Gibbon, riding a 3  $\frac{1}{2}$  h.p. Alldays fitted with a U.H. Magneto **SUCCESSFULLY CONCLUDED** the above test on Nov. 26. Specify a U.H. and relieve yourself of all ignition troubles,

S. WOLF & CO.,

115, Southwark Street, LONDON, S.E.

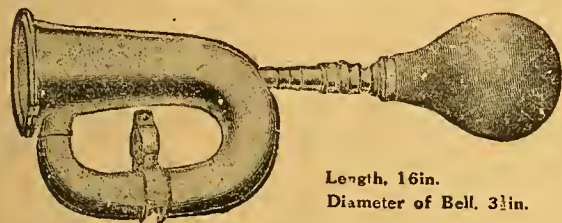
'Grams—"Widerstand, London."

'Phone—5172 Central and 2734 Hop.



# Rotax Clarionette

## The Premier Motor Cycle Horn.



Length, 16in.  
Diameter of Bell, 3 1/2in.

**E**LEGANT and compact design. The tube passes through the bell of the Horn instead of by the side of it, ensuring great economy in space. Tone—deep and distinctive, and the volume of sound makes it audible for a considerable distance in advance of machine.

Nickel Plated.  
Fitted Dust Cap and  
Best Quality Rubber Bulb.

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Your  
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Illustrated List—Free and Post Paid.

**ROTAX MOTOR ACCESSORIES CO.,**  
43-45, Gt. Eastern Street, London, E.C.

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## OF SPECIAL INTEREST TO EVERY MOTOR CYCLIST

We are now prepared to sell nearly every make of Motor Cycle and Sidecar on **EASY TERMS OF DEFERRED PAYMENT**. We invite you to call or write for particulars of this important departure of our Motor Section. Intending purchasers should enquire early, as we are already booking orders for the 1913 season.

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Accessories added, say	40	0	0
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Pay 20 <sup>0</sup> / <sub>100</sub> as deposit	43	0	0
Balance	8	12	0
Add 2 1/2 <sup>0</sup> / <sub>100</sub>	34	8	0
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12 monthly payments of	2	18	9

If payments are completed in six months only 1 1/2 per cent. interest will be added instead of 2 1/2 per cent.

### GUARANTEE:

The makers' guarantee is confirmed by us with every sale.

We can now accept orders for Early Deliveries of nearly all the leading makes of 1913 Models.

**SELFRIDGE & CO., LTD.,**  
OXFORD STREET, W.

*. A New Book .*  
*for Motor Cyclists.*

# TRACING TROUBLES

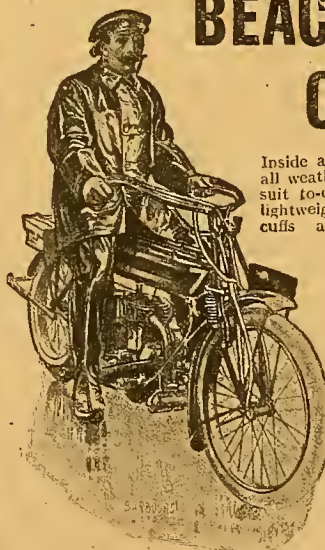
: : Motor Cycle Faults; : :  
: : their identification, : :  
: : and their remedies : :  
: : simply and fully : :  
: : explained. : : : : : :

Specially prepared for novices, and invaluable in cases of roadside trouble. It gives methods for locating faults in the running of motor cycles, and advice as to the best means of remedying them when found.

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Suit complete .. 25/-  
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The Store for wet weather wear,  
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 3½ h.p. **TRIUMPH**, 3-speed gear, belt drive.

Also **RUDGE, SCOTT**, etc., etc.

**Sidecars - - - - - from £8**

Order now. Only £5 required with order, and the balance on Pagets Plan of deferred payments. Write to-day for particulars and price lists. Unbiased advice given as to best machine to suit your requirements. We pay carriage and crate. Deliveries guaranteed.

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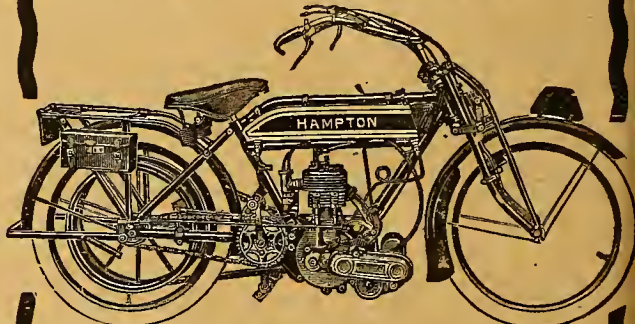
**PAGETS LIMITED**  
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for Sidecar  
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**WASH IT WITH A HOSE.**

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**ALL-BLACK WINTER MODEL**



Finish is Guaranteed not to Crack, Chip, or Tarnish. No Japan used. Will not Rust. For Winter Riding. Saves Time and Temper.

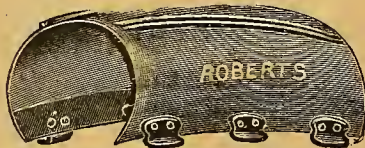
3½ h.p. Free Engine Model, complete with all Accessories,

**£49 - 10 - 0 complete.**

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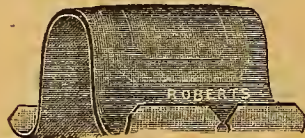
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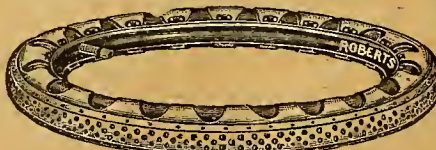
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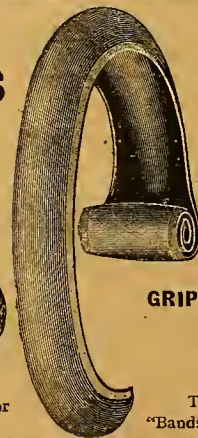
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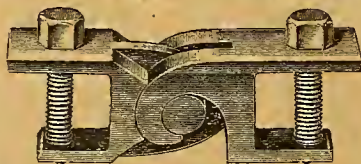
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The standard Handbook of the Motor Cycle, Fifteenth edition, revised and enlarged, now on sale. Price 1/- net. By Post 1/3.

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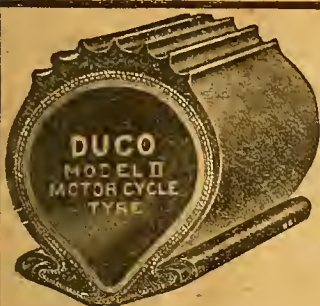
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Model II. Heavy. Extra strong.  
Suitable for machines up to 3 h.p.  
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An exceedingly neat bag for fixing to rear carrier. Will hold a very large quantity and when empty folds down very closely. It is made of black waterproof material.

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Adjustable in height. Tilts to any angle.



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Adjustable in every sense of the word, design d for fixing on the front fork airers, and is strong enough to carry the heaviest lamp. Its chief advantage is that the lamp can be tilted at any angle. The Bracket is attached to a screwed bar, which can be rotated in tapped holes in the clips, thus enabling a necessary angle to be obtained. Supplied for round or oval clips.

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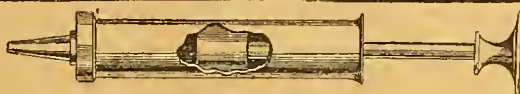
Swastika Mascot. For motor cycles.



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This battery is made up of three of the G.R. Cells, Type G.V.  
Size, 7 1/2 x 7 1/2, 10  
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## Any of the accessories on this page can be obtained from your regular dealer or garage



### Motor Cycle Oil or Grease Syringe.

The top of the syringe has a bell shaped mouth, allowing plunger to be easily pushed home when filled with lubricant. No. 12700e, each 1/6



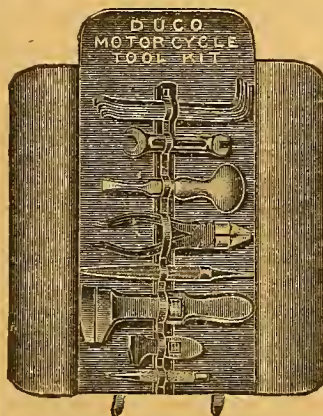
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Quart Cans, 1/9 each  
1/2 Gall. " 2/9 "



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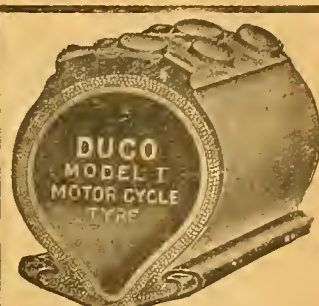
Finest grade leather and fitted with good quality tools, as follows: 7in. spanner, 6in. cutting pliers, screw driver with special handle, pin punch, double ended spanner, set of three tyre levers, 6in.; midget spanner, 3in.; half round file

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### Sidecar Telescopic Jack.

A very simple and effective article. Absolutely firm wheel set. Light in weight and convenient in size. Quickly adjustable to any height. Price, 4/9 each.



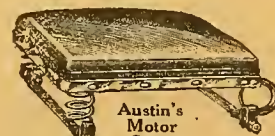
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Model I. Extra Heavy. Suitable for machines from 3 h.p. to 4 h.p.  
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Size 26 or 28 x 2 1/2 ins. Each 28/-



### "A.K." KNEE GRIPS for Motor Cycles.

Makes steering very much easier, as the knee gives the rider a firm hold on the machine when riding at high speeds, thereby leaving the hands free to manipulate handle-bar levers. Per pair, 6/6



### Austin's Motor Cycle Passenger Seat.

It is scientifically sprung at each corner, and gives to the slightest road shock, completely insulating the passenger; but it cannot roll, and there is no risk of affecting the steering or increasing the tendency to skidding. Dimensions: 6in. x 12in. x 4in. Clips fit 1 1/2 or 2in. tube, and are adjustable to suit carriers of various widths. Weight, 4 lbs. Price complete 17/6

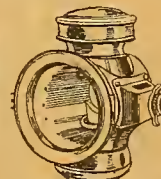
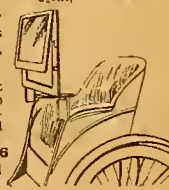


### Detachable Outside Tyre Gaiters with hooks for motor cycles.

No. 12085k, 2 & 2 1/2, each 1/9 2 1/2, each 2/-

### Taylor's Patent Motor Cycle Wind Screens for Sidecars, Trailers, etc.

Celluloid Window. Weight about 3 lbs. Adjustable to any width. To enter sidecar, screen swings round like ordinary door. Stand (not folding), each 25/6 Folding pattern, nickel finish, each 32/6



"Little Veena" Side Lamp For Motor Cycles and Sidecars. Height, 7ins. Glass, 5ins. Red light at rear. No. 11137ke. Brass 20/- per pair. Nickel, 22/- per pair.

## The "Duco" Model A Sidecar.

No. 12824k. MODEL A. Price, complete with Tyre, £6 5 0

FRAME.—14 gauge welded steel tubing, with specially strong lugs, well finished and beautifully enamelled. High grade double leaf steel springs. Mudguard of ample proportions, fitted with specially strong stays which will not shake loose. Quick detachable joints which enables the Sidecar to be detached from the Motor Cycle in a few minutes, all the clips being nickel-plated and in keeping with the general finish of a high-grade Motor Cycle.

The Wicker Basket is well designed and splendidly upholstered, back being rather higher than usual, while the leg room will accommodate even a tall person. The front of the basket is built up on a curve, thus making a good protection for the feet and legs, and adding to the neat appearance as well as to the comfort of the complete Sidecar.

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By the use of this small tool it is an easy matter to replace a chain bolt, each 1/9

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Best quality blade, gauge of the correct thickness for adjusting the platinum points, and a very fine file for smoothing down the platinum tips. No. 11350kh. 1/- each.

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All sizes in stock.

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These Waistcoats are made in Brown Chamois Leather, without sleeves, at 12/6

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For Motor Drivers and Motor Cyclists.

LONG SLEEVED  
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New Brown Chamois Leather Waistcoat, long sleeves, 21/-

With Sleeves close fitting at wrist, excluding all draughts, 35/-

All sizes stocked.

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- No. 8. Real Irish Frieze, assorted colours, lined detachable leather 50/-

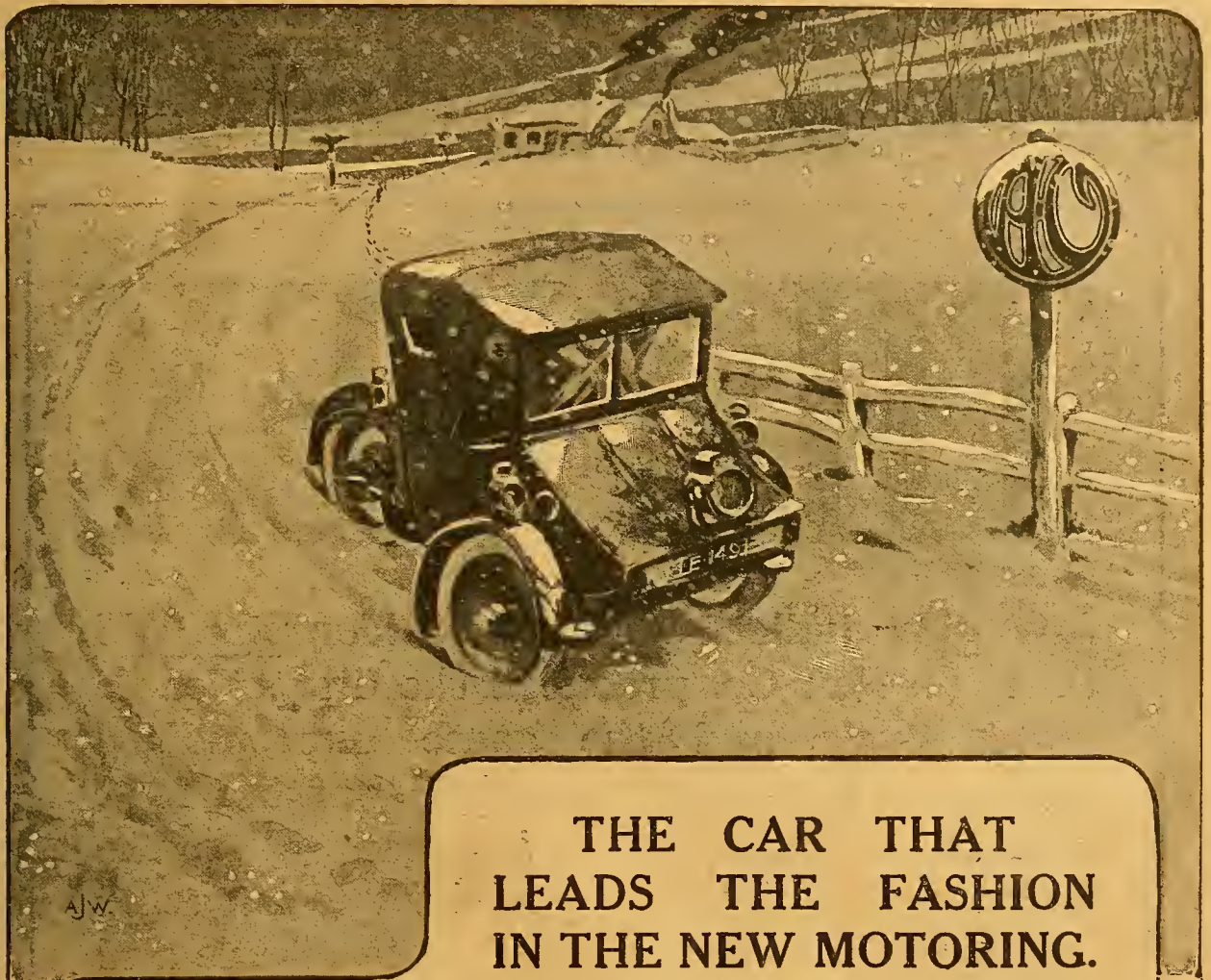
### MOTOR CYCLING SUIT.



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The crispness of a winter's day and the rare pleasure of driving through wintry landscapes are at a discount unless the car be of a kind that offers its occupants complete protection. The view is one thing—the point of view another. With the A.C. Sociable the roughest weather and the keenest cold can alike be disregarded. The hood and screen can be raised in a moment, and you have an ideal winter vehicle. Compare the protection with that obtained from a motor cycle and sidecar—and then make your choice. We shall be pleased to demonstrate on the road what we put down on paper.

We have a few January deliveries vacant.  
Orders booked **AT ONCE** can be fulfilled.

**PRICE OF STANDARD MODEL £92 10s.**

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The following Agents have demonstration machines, and can arrange trial runs:

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GLOUCESTER—Messrs. Twining & Co., The Quay.  
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Any unprejudiced Agent or Rider KNOWS that the Rex Co. produced the first rideable Motor Cycle, and the same unprejudiced Agent or Rider ALSO KNOWS that the 1912 and 1913 Rex is acknowledged to be the finest designed engine and best constructed Motor Cycle on the market. Both Single and Twin engined machines are absolutely unbeatable for SPEED, RELIABILITY, AND COMFORT. Come to the Works and see them being made. Write for our RELIABLE book of testimonials. REX stands for Reliability. If you want to motor without WORRY and TROUBLE buy a 1913 REX.

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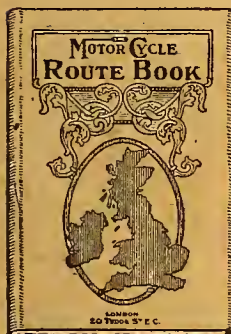
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## GENTLEMEN,

A successful invention creates a host of friends, and some enemies. Please bear this in mind. I say that my patent **TWO-JET AUTOMATIC CARBURETTORS** start easier, pull slower, are more flexible and faster than any other, and enable the engine to **TICK ROUND WHEN STANDING**, and **PULL SLOW IN TRAFFIC** and **GIVE VIOLENT ACCELERATION** when the lever is opened as quickly or slowly as you like, no choking possible. They improve the running of a machine to an incredible extent. If you want to get the best out of your machine, have one fitted. No other carburettors are like these, and no others can do what these can. **ALWAYS SENT ON APPROVAL AND TRIAL.** Thousands of genuine unsolicited testimonials. Winners of World's Records, Hill Climbs, and Reliability Contests in all parts of the world.

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"I discern no loss of power compared with well-known standard two levered carburettor, which means a gain of power in unskilled hands. Consumption very low. Pull on small jet round corners magnificently. Nothing sacrificed to automaticity."

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"Far beyond anything in pre Binks days."

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"Would never dream of returning to two levered types on either of my machines."

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"Gives me unbounded pleasure. Power can be regulated to a nicety. It is really delightful."

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"I doubted your claims at first, but after trial I am convinced it is the finest instrument in the world. The only one that gives the extremes of slow and fast running."

Mr. Edwards wire, after reaching London on his Bradbury:

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Mr. Axford on a Martin Jap, at the Streatham meeting, completely wiped out all the other champion riders and machines, scoring highest figure of merit, winning two gold medals, fastest single cylinder time of the day, and three first prizes.

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"Motor Cycling" says:

"Watkins & Williams came up fast, but Meredith on a T.T. Triumph, with

latest BINKS carburettor, simply streaked the hill and roared over the summit at a speed estimated at 50 m.p.h.

Mr. Clark on a Corah,  
Mr. Flook on a Triumph,

Mr. Smith on a Triumph,

Mr. Bone on a Smith Precision,

and numerous other celebrated riders, always use Binks carburettors because they are the fastest made.

**BINKS Carburettor**  
makes the  
Scott Engine turn  
dead slow.

PRICE:  
**45/-**  
**COMPLETE**  
With Spare  
Jet and Keys.



SEND  
FOR MY  
TREATISE  
ON  
CARBUR-  
ATION.  
Testimonial  
Book.

ADDRESS ME PERSONALLY  
**C. BINKS, LTD. PHOENIX  
WORKS, ECCLES**  
(NR. MANCHESTER).



# SPENCER MOULTON

## MOTOR CYCLE TYRES

### "Road Wisdom."

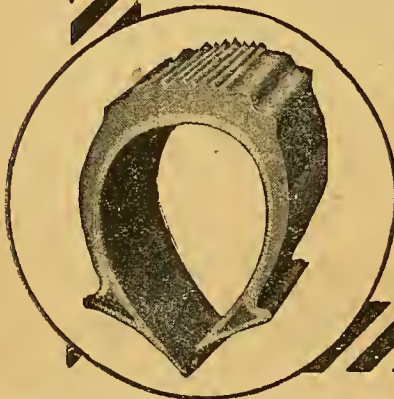
"The tyre is the thing!" The tyre has to bear all the friction and fret of roads. It is the most expensive item in upkeep. Look, therefore, to the tyre! A little wisdom at the outset, a keen discrimination in tyre selection—and a maximum enjoyment of motor cycling is yours.

SPENCER MOULTON tyres are strengthened *doubly* at the point of greatest wear—the tread! Made solely from purest Para rubber, they outlast two pairs of ordinary tyres. Do not be "penny-wise"!

*In three styles—STANDARD HEAVY, THREE RIBBED, STEEL STUDDED. Standard sizes. Booklet free.*

GEORGE SPENCER, MOULTON & CO., LTD.  
Kingston Mills, Bradford-on-Avon, Wilts.

LONDON: 77-79 Cannon St., E.C. GLASGOW: 63-67 Bothwell St. LEEDS: 68 Albion St.



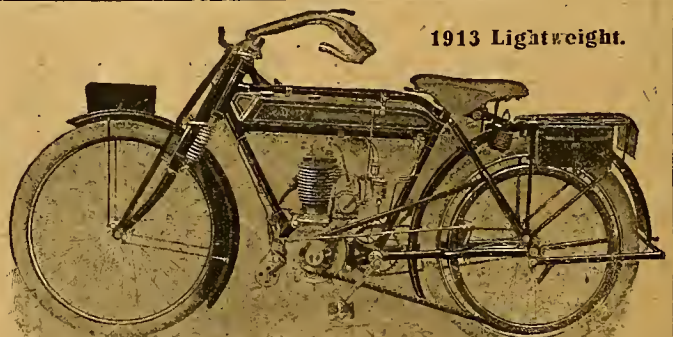
# Calcott

## Motor Cycles

**2½ h.p.    4½ h.p.**

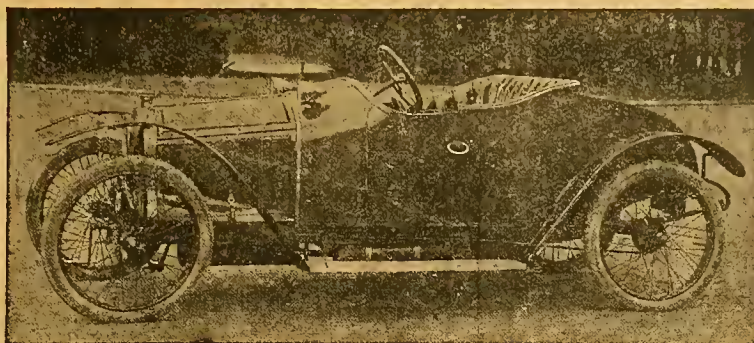
Catalogues on application.

**CALCOTT BROS., LTD.,**  
**XL WORKS, COVENTRY.**



1913 Lightweight.





**As illustrated**  
**£65**  
**without Hood**  
**or Screen. :: ::**

# THE **BABY Car**

**Note our Price:**  
**£65**

**Complete as Illustrated ; or with Hood and Screen,**  
**£75.**

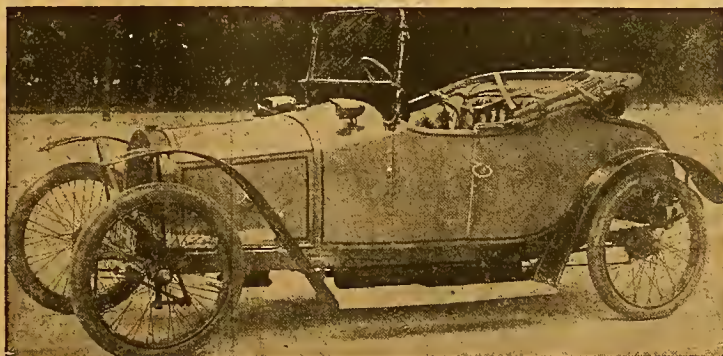
We have 25 of these Baby Cars on order from V. Silvestre, of 46, Rue de Londres, Paris, and are open to sell them at these prices.

Phone—7539 Gerrard.

Wire—Skidlessly, London.

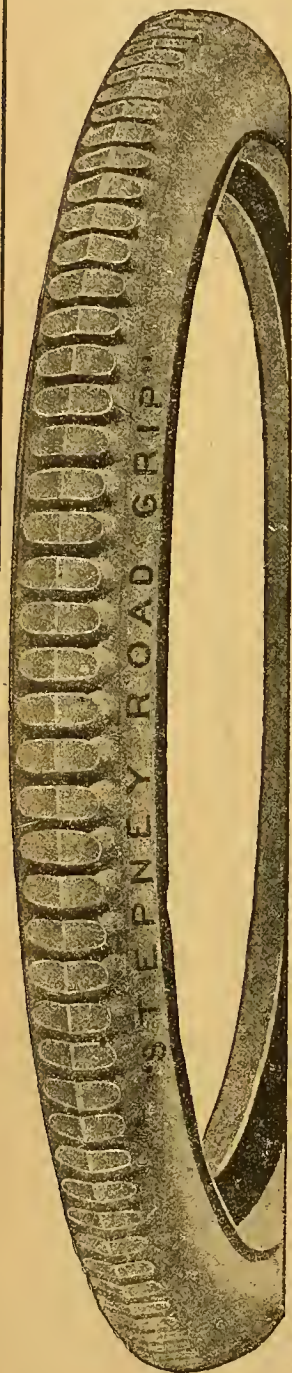
**PORTLAND MOTOR CO., 101, Gt. Portland Street, London, W.**

**As illustrated**  
**£75**  
**with Hood and**  
**Screen. :: :: ::**



*In answering this advertisement it is desirable to mention "The Motor Cycle."*





# BEFORE You SKID IS THE TIME TO BUY A Stepney Road- Grip Tyre.

Grips the road better  
than any form of  
Motor Cycle Tyre.

## PRICES.

26x2 $\frac{1}{4}$  .. £2 10 0  
26x2 $\frac{1}{2}$  .. £2 12 6

## BUTT ENDED TUBES.

26x2 $\frac{1}{4}$  .. 13/4  
26x2 $\frac{1}{2}$  .. 16/-

The **STEPNEY SPARE MOTOR WHEEL Ltd.,**

STEPNEY WORKS,

**SOUTH WALES : : : LLANELLY.**

London Showrooms and Depot:

**168, GREAT PORTLAND ST., W.**



**PRECISION**

# "Precision"

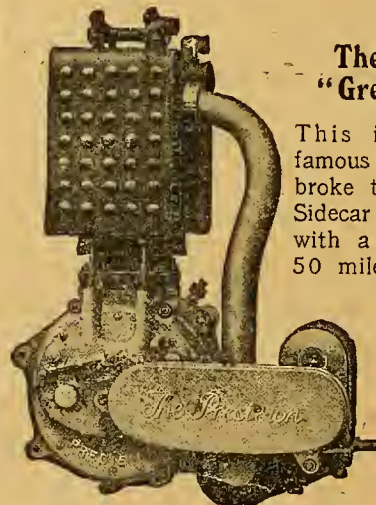
## ENGINES.

"The Same as  
You can Buy."

### The Water-Cooled "Green - Precision."

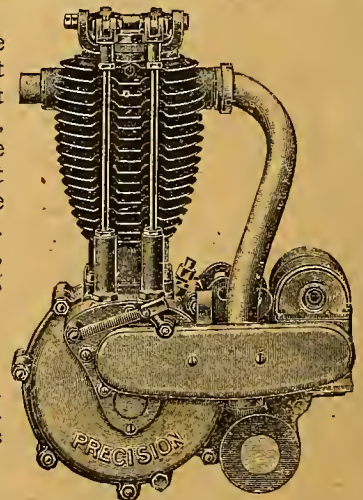
This is the already  
famous engine which  
broke the World's Hour  
Sidecar Record (Class C.)  
with a total distance of  
50 miles 1740 yards.

3 $\frac{1}{2}$  h.p. engine,  
85 m/m bore,  
88 m/m stroke,  
overhead valves,  
water-cooled  
cylinder (Green's  
Patents).



### The 2 $\frac{3}{4}$ h.p. Overhead Valve "Precision."

A splendid engine  
for solo or light  
sidecar work. Built  
into a proper frame,  
these engines have  
a speed capacity but  
little below the  
average 500 c.c.  
70 m/m bore,  
90 m/m stroke,  
overhead valves.



Full details of the com-  
plete range of "Pre-  
cision" 1913 models  
post free upon request.

**F. E. BAKER, LTD.,**  
PRECISION WORKS, MOORSOM STREET  
BIRMINGHAM.

Wholesale Distributing Agents  
for Australia:  
Messrs. A. G. Healing & Co.,  
354-356, Post Office Place,  
Melbourne.

Agent for South Africa, Rhodesia  
and Portuguese East Africa:  
Mr. Victor S. Welford,  
P.O. Box 83,  
Durban. E.H.G.



# PREMIER

## MOTOR CYCLES

### THREE TYPES IN PASSENGER MACHINES.

3½ Two-speed, 7-9 Twin, and 7-9 Cycle Car.

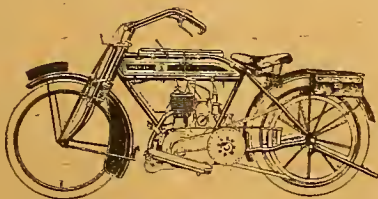
#### 3½ h.p. 2-speed Model

**ENGINE** - Premier 85 x 88, fitted with the famous Auxiliary Exhaust. Bosch waterproof magneto. B. & B. Carburetter, etc.

**FRAME** - New design, special for sidecar work, with sloping top tube and ample clearance to remove cylinder without taking engine from frame.

**GEAR** - Premier new countershaft two-speed. Chain drive to gear box. 1in. belt to road wheel over 8in. adjustable pulley.

**OTHER FEATURES** Adjustable footboards. Divided rear guard. Spring up stand. Large Pannier Bags, etc.



**Price £56 - 0 - 0.**

#### 7-9 h.p. Cycle Car.

**ENGINE** - Air-cooled twin, 85 x 88 mm., 998 c.c., cylinders at 50°.

**CHASSIS** - Tubular trussed construction of heavy gauge weldless tubing.

**SPRINGING** - Half elliptic front; quarter elliptic rear.

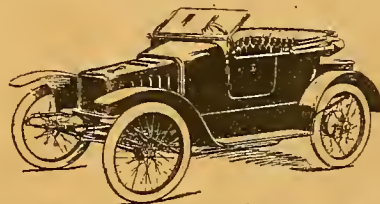
**TRANSMISSION** - Chain throughout, protected by splash guard.

**GEAR BOX** - Premier two-speed and reverse.

**STEERING GEAR** - Worm and segment; 14½in. celluloid covered steering wheel.

**DIMENSIONS** - Wheelbase 6ft. 6in., track 4ft.; length O.A. 8ft. 6in.

**TYRES** - Dunlop plain, 650 x 65.



**Price 100 Guineas.**

#### OTHER MODELS.

3½ Single Gear Model, £48. 3½ Clutch Model, £54. 3½ 3-speed, £56. 3½ Competition Model, £48.

2½ Single Gear Model, £36. 2½ Clutch, £42. 2½ 3-speed Model, £44.

7-9 Sidecar machine (engine twin 85 x 88), £75.

WRITE TO-DAY FOR THE PREMIER MOTOR LITERATURE.

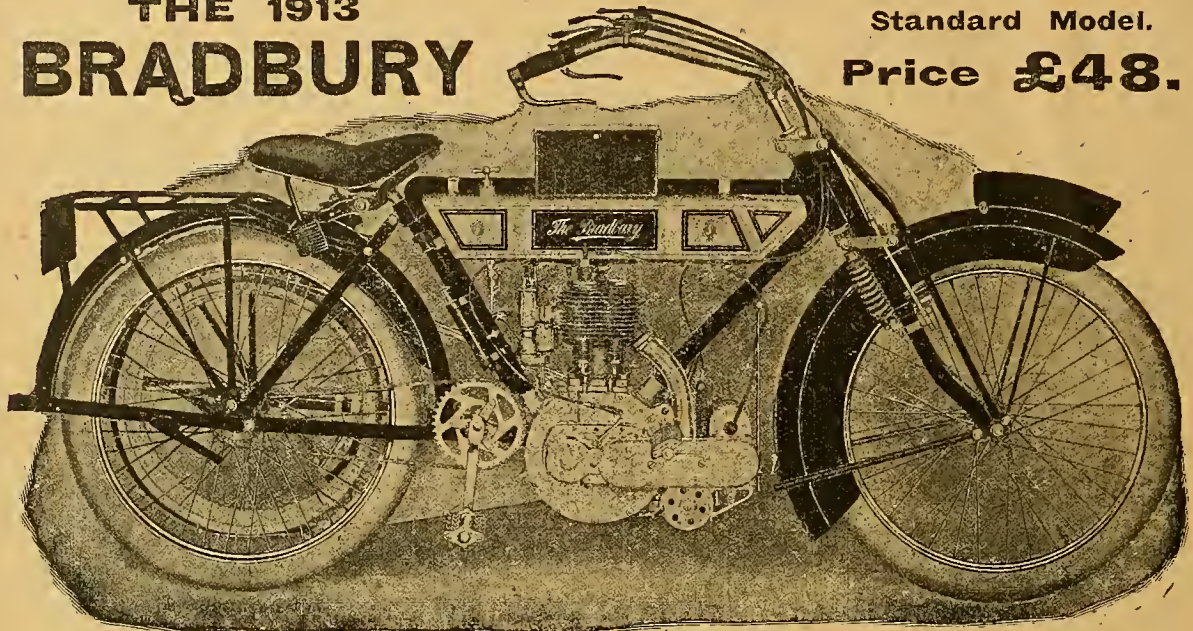
**THE PREMIER CYCLE CO., LTD., COVENTRY.**

20, Holborn Viaduct, London, E.C., & 64, Holdenhurst Rd., Bournemouth.



# THE 1913 BRADBURY

Standard Model.  
Price **£48.**



You get the Speed and Power of a Twin with the Economy and Simplicity of a Single in the 3½ h.p. BRADBURY.

Made in 7 different Models.

Send for Catalogue and Address of nearest Agent to—

**BRADBURY & CO., LTD., OLDHAM.**

We say it "means more mileage," and—the

## JOHN BULL MILEAGE COMPETITION

is designed to prove that statement, and—

**The Prize—any standard British-built  
Cycle Car not exceeding a total value  
of £125—**

is offered to encourage you to put it to the test.

To do so will reveal its value—prove the advantage of the compressed rubber tread, and—convince you that its use will ensure a tyre economy hitherto unequalled—and all that's worth while.

Anyway, ask us for particulars—

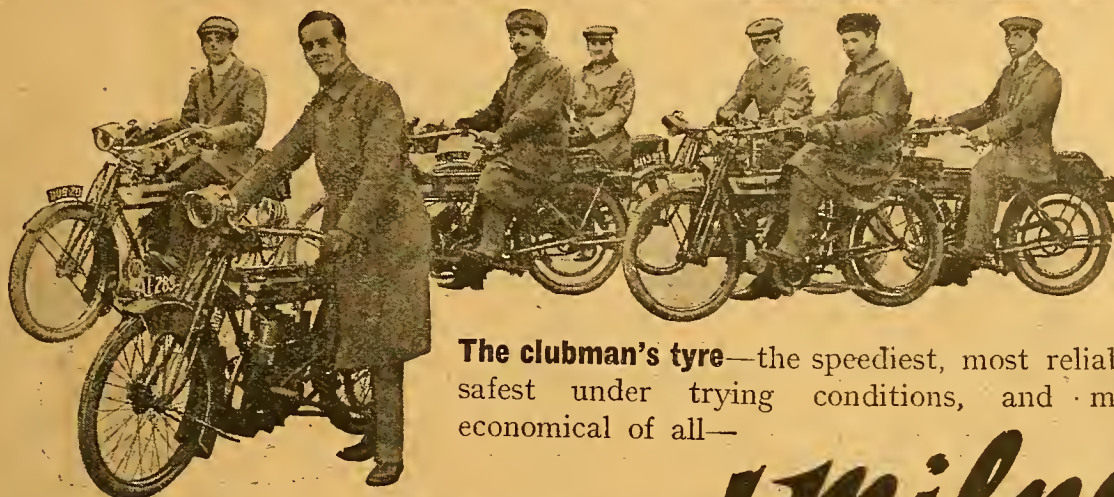
**Leicester Rubber Co., Granby Works, Leicester.**

LONDON STOCKISTS—

Armstrong and Co., 24, Goldhawk Road, Shepherd's Bush, W.; Harrods, Ltd., Brompton Road, S.W.; The Service Co., 292-3, High Holborn, W.C.; H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W.C.

**The Tread  
that means  
more Mileage**





The clubman's tyre—the speediest, most reliable, safest under trying conditions, and most economical of all—

"Wood-Milnes" are best under stress because they are—weight for weight—stronger than any competitive make.

**WOOD-MILNE LTD.,  
PRESTON, LANCs.**

Telegrams: "Comfort, Preston."  
Telephone: Preston 413.

LONDON, BRISTOL, - BELFAST,  
BIRMINGHAM, GLASGOW,  
DUBLIN, PARIS, VIENNA.

# Wood-Milne Motor Cycle Tyres

## G. Raws & Sons Motor Cycle Clothing.

**GREAT STOCKTAKING SALE, COMMENCING TO-DAY, AND ENDING 9th JANUARY, 1913.**

All Garments guaranteed absolutely waterproof.



### JACKETS.

Double-breasted, deep storm collar and throat tab. Inside and outside wind cuffs, etc.

In grey-green, fawn, or bronze Heavy Twill double-texture cloths.

	Usual Price.	Sale Price.
Guinea Suit ..	15/6	13/6
Standard ..	18/-	16/-
Untearable ..	22/6	19/6

All Sizes in Stock.

### LEGGINGS

To match Jackets.

	Usual Price.	Sale Price.
Guinea Suit ..	6/-	5/-
Standard ..	8/-	6/6
Untearable ..	10/6	9/-

### TROUSER-OVERALLS.

All latest improvements.

	Usual Price.	Sale Price.
Without Seat, in fawn or green	13/11	12/6
In bronze heavy twill ..	16/6	15/-
With Seat, fawn or green ..	15/11	14/6
Bronze twill ..	18/6	16/6

### "ALLSEASON" JACKET.

Double-breasted, deep storm collar and throat tab, inside and outside wind cuffs. Pockets lined. Fitted with Best Detachable Fleece Lining.

Price 25/-

Owing to superior quality, finish, and unique design of this Jacket, no reduction is possible, but if a complete suit is purchased, that is, "Allseason" Jacket and Trouseroveralls or Leggings, a sale discount of 10% is allowed.

A genuine opportunity of securing the best quality Suits at a reduced price. Don't let it pass you. Send your order at once.

**TERMS—Nett Cash with Order.** Goods sent promptly, carriage paid, and may be returned if not satisfactory in three days and money refunded.

Send chest measurement over ordinary Jacket and length required for Jackets, and inside leg measurement only for Leggings.

Illustrated catalogue and patterns on application to

**G. RAWs & SONS, Waterproof Clothing Specialists, LIVERPOOL.**  
The Albany, Oldhall Street . . .

In answering these advertisements it is desirable to mention "The Motor Cycle."



## and that's the Miller 29 H—

one of Miller's newest models—distinguished by all the Miller merit, and—unequalled in its quick detachability.

That latter feature will especially appeal for, when you know that by the simple unscrewing of two nuts you can lift away with a single movement Bracket, Lamp and Generator complete, you will recognise its value.

Other points are—

**THE NEW GIRDER CARRIER** made on an entirely new system from toughened rolled steel in two equal parts, and unrivalled in simplicity and strength.

**THE NON-SPLASH GENERATOR** with air vent in handle.

**SPECIALLY GROUND MANGIN LENS**  
**MIRROR** 4in. diameter.

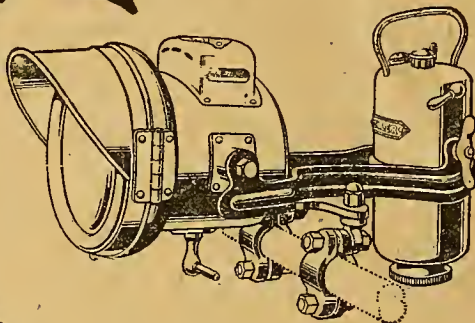
**5 1/2 in. DETACHABLE FRONT GLASS.**

**NEW TYPE BURNER** which cannot crack glass or reflector.

And lastly—"The beam that's better," and always unequalled in its penetrating power.

Those are its merits, and its price is 37/6.

Other models, together with the Miller Rearlite, are illustrated and described in our latest Catalogue—ask for copy.



**H. MILLER & Co., Ltd.,**  
55, Miller St., Birmingham.



## The BRITISH MADE *Watford* Speedometers

Various types from £3 8s. upwards are illustrated in our Catalogue. Please call or write for copy.

**MOTOR CYCLISTS—PLEASE NOTE!!!**

**COPY OF LETTER.**

From **THE NEW ROVER CYCLE CO., LTD.**, 86, Northumberland St., NEWCASTLE-ON-TYNE.

Messrs. Nicole, Nielsen & Co., Ltd., 14, Soho Square, London, W. Oct. 28th, 1912.

Dear Sirs—I have much pleasure in enclosing cheque in payment of the enclosed account.

I have now given your Speedometer a pretty severe test and must candidly say it is far superior to any other I have had, which include every speedometer of note. Where yours scores over the others is, the milometer is most accurate and the speed hand is as firm as a rock when running at any speed. With the other makes I have had it has been really impossible to know what speed you were going at on account of the hand shaking all over the place.

Yours faithfully (Signed) J. ADAMS.

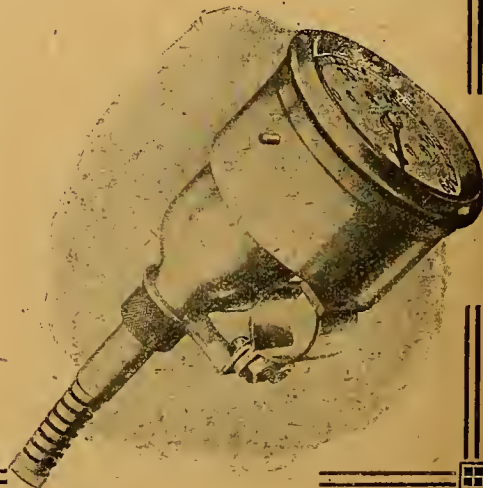
### PRICES—

Type 706, 3in. dial	£3 : 3 : 0
Indicates speeds to 60 miles per hour, with total mileage counter to 10,000 miles.	
Type 702 (as illustrated)	£4 : 4 : 0
Indicates speeds to 60 miles per hour, with total mileage counter to 10,000 miles	
Quickly re-set trip counter to 100 miles	
Type 700	£5 : 5 : 0
Indicates speeds to 60 miles per hour, with total mileage counter to 10,000 miles.	
Quickly re-set trip counter to 100 miles. Maximum speed hand.	

Manufactured by **NICOLE, NIELSEN & CO., LTD.**,  
Inventors and Patentees of the Chronograph, 1862; Split Seconds, 1871; and  
Speedometer, 1904.

**THE WATFORD SPEEDOMETER WORKS,**  
London Showrooms—14, SOHO SQUARE, W.  
Telephone—2835 Central. Telegrams—Niconieleco. London.

are the very latest conception of the well-known firm which has been manufacturing Speedometers in large quantities for the Trade since 1904. They are the outcome of the unique experience of a first-grade English watch manufacturing firm, established in London 1839.





# RUSHMORE LAMPS

**LTD**

In grace of  
outline, substantial  
build, great lighting effi-  
ciency; combining all the  
advantages of the world-famous  
Rushmore Car Headlights and Gen-  
erators, the **NEW RUSHMORE MOTOR  
CYCLE, CYCLE CAR, and TRICAR SET**  
has revolutionised all other similar lighting  
equipments.

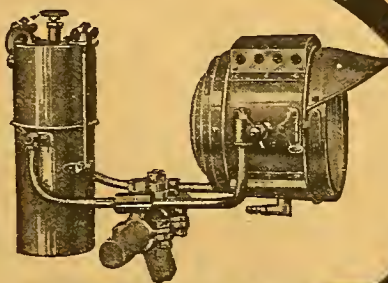
*Please send postcard for descriptive and illustrated booklet  
just published, mentioning "The Motor Cycle."*

**RUSHMORE LAMPS, Ltd.**

46, Brewer Street,

Piccadilly Circus, LONDON, W.

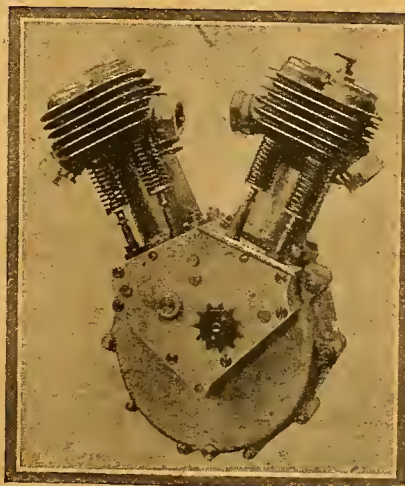
"Grams—" Aplanatic, London."  
"Phones—8834-8835 Gerrard."



## MOTOR CYCLE LAMPS

LJDN 13

# ENGINES



# ENGINES

**BLUMFIELD LTD., 70, LOWER ESSEX ST., BIRMINGHAM.**



# 1913 T.M.C.

Touring

Motor

Cycle.

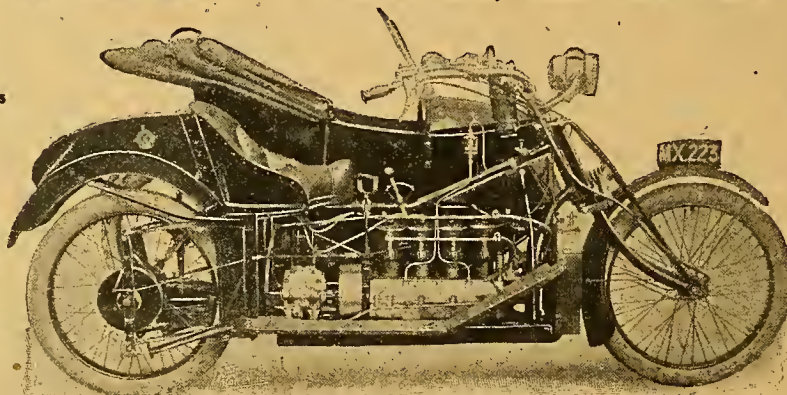
**FAST,  
SILENT,  
RELIABLE.**

**IDEAL** FOR ALL AGES, ALL CLIMATES,  
ALL ROADS, ALL WEATHERS.

Notice our Four  
Laminated Springs  
at back.

### Specification.

7 h.p., 4 cylinder, Water-cooled, M.O.I.V., 3-speed Gear Box, Bevel Drive, Automatic Carburetter, Automatic Lubrication, Frame sprung on Car Lines, and specially designed for Sidecar Work, Weather-proof Transmission, Hand Starting, Comfortable Bucket Seat, 7 in. Road Clearance.



The 4-cylinder  
Sidecar Machine.

### Qualification.

A silent machine, unfailing in its reliability, & remarkable for its efficiency, as comfortable as an armchair, and so economical on tyres, petrol, and oil - that it proves a revelation after the use of other machines.

The WILKINSON T.M.C. Co., Ltd., Oakley Works, Southfield Rd., ACTON, W.

For up-to-date machines with Free Engines  
the

# LUKIN

... IS ...

## THE IDEAL CARBURETTER.

Perfect Slow Running. Instant Acceleration.

Absolutely Automatic in any throttle position without the aid of dashpots, tuned springs, or other mechanical devices.

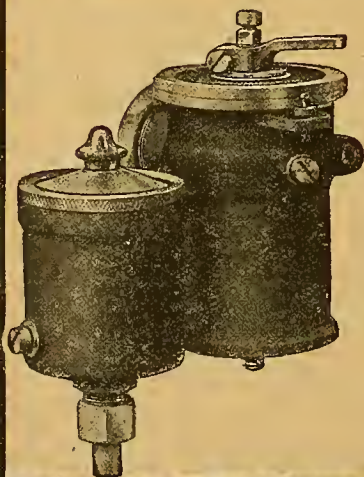
Write for particulars.

**LUKIN, LTD.,**

The Ride, Newcomen Street, Borough, S.E.

Telephone: 1083 Hop.

Telegrams: "Autocarbur, Sedist, London."





## Before Olympia

we were convinced that the Victoria value would cause a mild sensation—and it did.

## After Olympia

we hold the proof, for motor cyclists far and wide have not only shown appreciation, but filled our order books with practical evidence thereof—and when you think of it—when you study the specification of the

# VICTORIA MOTOR BICYCLE

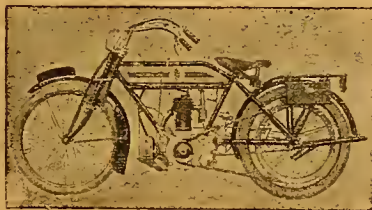
which is as under—

*Precision engine, single cylinder, 85 m/m bore x 88 m/m stroke, with mechanically-operated side-by-side valves, and variable pulley; specially designed Druid patent girder spring forks; Bosch high-tension magneto; chain driven; Brown and Barlow carburetter, with handlebar control; Dunlop rubber belt; Dunlop heavy rubber-studded tyres; Brooks B170 saddle, and an exceptionally full equipment—*

When you know its price—£38—you, too, should be convinced.

Anyway, we're here to fill that purpose, and we ask you to let us tell you more about "Victoria" value—write us.

**Victoria Motor and Cycle Co., Ltd., Victoria Wks., Dennistoun, Glasgow.**



**Price £38 0 0 complete.**



of every machine we make is placed our Trade Mark.

As will be seen, it is not a peregrinating placard of the MATCHLESS name, but a mark by which our machines are known from others, - just as their behaviour distinguishes them from the rest.

## Riders of the famous MATCHLESS MOTOR CYCLES

are proud of that mark because it indicates the possession of a machine that has made history. We are proud of that mark because it has been associated with performances in the motor cycle world that have never been equalled.

You can read about Matchless successes in the new art catalogue, which can be obtained free from the manufacturers—

**H. COLLIER & SONS, Ltd.**

Offices and Showrooms:  
44, Plumstead Road, London, S.E.  
Works—Burrage Grove.





## More World's **RECORDS**

At Brookland, Dec. 17th.

Mr. S. L. Bailey on a 2½ h.p. Douglas

**broke the Kilometre Record  
at 72 miles per hour, and  
the Mile Record at 70 miles  
per hour, Class B.**

NOTE.—The genuine "LYSO" Belt is marked "L.G.O." on one  
transverse flat—and the genuine "LYSO" Winter Belt is marked  
"O.W."—don't accept a substitute! Insist on a "LYSO."  
Obtainable of all good Agents, or direct.

**LYCET'S,**  
"The Saddlery." Birmingham.

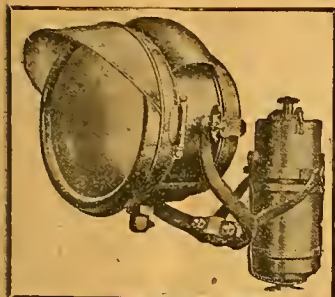
THROUGH

**THE NEW "LYSO"**

**LYCET'S LATEST BELT**

R.H.S.





# SERVICEABLE

## XMAS & NEW YEAR PRESENTS

appreciated by all Riders.

The suggestions below are selected

**BEST ACCESSORIES at LOWEST PRICES.**

### The Famous F.R.S. Lamp Sets.

Give a most powerful light. English made throughout, and best quality finish.

Standard Lamp Set, complete with Generator, Brackets, and Tubing	47/6
800ft. Beam Set, open back door	58/6
1000ft. " " " "	68/6
1200ft. " " " "	78/6
The Service Lamp Set, complete with Generator, Mangin Lens, Brackets, etc.	30/-

### MASCOTS.

BEST MAKES. BEAUTIFULLY FINISHED.

Gnome Engine, with Revolving Propeller Blade	18/6
Polieman, with movable arms and revolving propeller	15/-
Swastika Mascots	3/9
Teddy Bear Mascots	3/-

### Service Handle-bar Mirrors.

Best make, will not fall to pieces	5/6
Lucas Observation Mirror, adjustable in any direction	7/6

### Cowey Speedometers. A most useful Present.

Absolutely reliable and accurate, to register to 60 m.p.h.	
Price	£4-4-0
With trip and total mileage recorder	£5-5-0
Ditto to register to 80 m.p.h.	£6-6-0

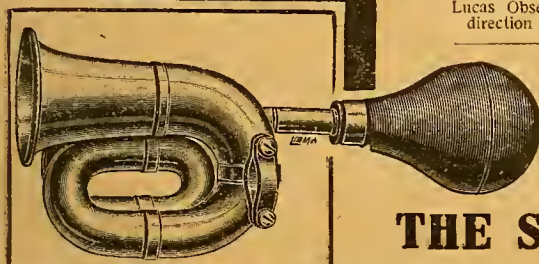
### Jones Speedometers.

Guaranteed 12 months	£3-3-0
With trip recorder	£4-4-0
Ditto, and with maximum hand	£5-5-0
Special watch for attachment to above	£1-1-0 extra.

### Service Handle-bar Watches.

Specially made to withstand vibration and rough usage.

5/6 each.	Cheaper quality, 3/9
Best quality, in strong case,	
Watches with best Movements,	
12/6 and 25/-	



### The Service Post Horn.

Undoubtedly the finest Horn yet produced. Best French Manufacture. Gives a loud, deep, and penetrating tone. 13/6

Or fitted with Dust Gauze 15/-

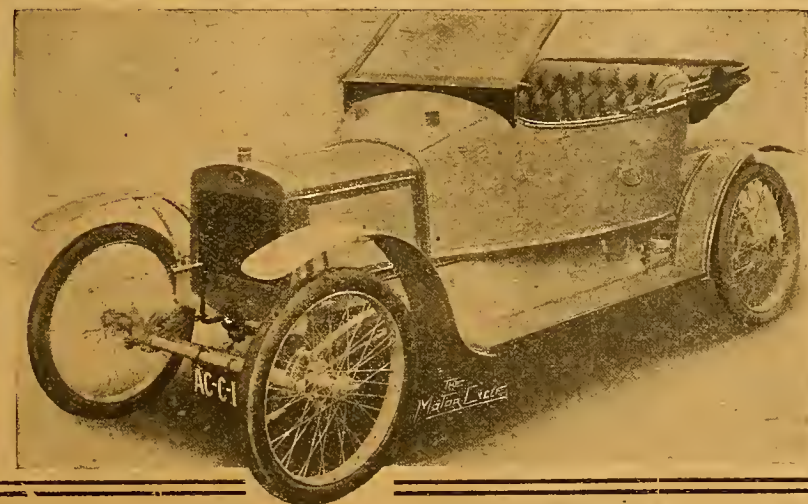
**THE SERVICE CO., LTD.,** 292-293, High Holborn, LONDON, W.C.  
(almost opposite First Avenue Hotel, going West).

"A very smartly designed cycle car."— "The Motor Cycle."

# The "INVICTA" Cycle Car.

45 miles to the gallon . . . . . 45 miles per hour.

Guaranteed to climb Stoneleigh Hill on Top Gear, and no breaking or burning valves.



### Note the Specification.

8 h.p. J.A.P. Water-cooled, Thermosyphon, Leather Cone Clutch, 3-speed and Reverse Gearbox through Bevel Box, with Chain to Back Axle and Slipping Clutch to one wheel.

**Built throughout on sound mechanical lines.**

### Price

complete, with hood, lamps, screen, tools, ready for road,

**£140.**

Before ordering a Cycle Car inspect the INVICTA.

Sole Manufacturer:

**H. CLARKE, 1, Clarendon Square, Leamington.**

Telephone—692.



# G.W.K.

**Olympia Show Opinion:**  
**That this car is absolutely**  
**IT.**

**G.W.K. Ltd., HOME WORKS, DATCHET, BUCKS.**

Telephone : 331, Windsor.

Telegrams : "Cars, Datchet."

## EMBODIES

*Comfort,  
Easy Starting,*



*Reliability,  
Flexibility.*

*Write for Illustrated*

*Catalogue, Post Free.*

**KYNOCH, LTD., - - - BIRMINGHAM.**

London Office :

20, BUCKLERSBURY, E.C.

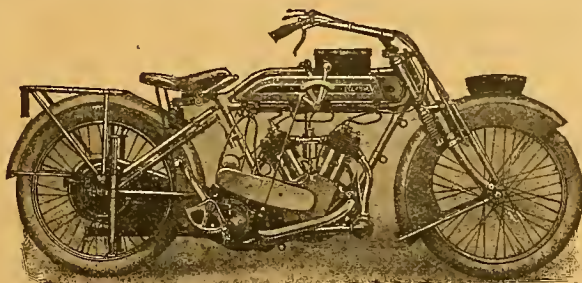


**FEATURES :**

Kick Starter on  
Right-hand Side.

Front and Back  
Stands fitted.

Low Riding Position.

**FEATURES :**

All Sidecar Lugs  
are made with  
the machine, thus  
ensuring perfect  
alignment always.

# THE CLYNO

## THE SIDECAR MOTOR CYCLE.

# For 1913

Recent improvements have made the CLYNO unquestionably the finest passenger machine of its time—the most reliable, the most comfortable, the best hill-climber, and the cheapest to run.

The 5-6 h.p. 1913 Model far surpasses all other machines for passenger work. It is fitted with Interchangeable Detachable Wheels and Three-speed Gear Box. Every detail has been carefully considered in the light of experience gained in practically every Open Trial of any kind held during the past few years, and consequently the design is **practical** throughout.

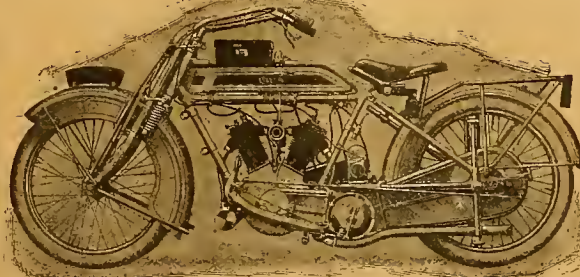
*Write for 1913 List and address of nearest agent. Nothing is so convincing as a trial, and any of our agents will be pleased to arrange for a test run.*

**The CLYNO ENGINEERING CO.,**  
**Pelham Street, - - - Wolverhampton.**

**FEATURES :**

Ample power for  
all occasions.

Entirely enclosed  
transmission.

**FEATURES :**

Increased Petrol  
capacity.

Pressure-fed Oil.

Multi-plate Clutch.



# The Singer "S"

*The letter "S" is just the nine.eenth in the Eng'ish Alphabet, commonplace enough when placed in that position, of no greater value than the rest—*

## but,

when you see it on the

## Singer Motor Bicycle

it becomes the SINGER "S" and, as such, it has a special value—a unique significance—

## then

it means service, satisfaction, and success, and each in a degree unequalled by any similar machine.

Olympia proved this—our order books are evidence and, in 1913, the MOTOR BICYCLE on which

**Stanley smashed the hour record  
and Harry Long (with passenger)  
put up that marvellous performance  
of 30,000 miles in 34 weeks,**

promises to be more popular than ever.

Now, you may not ask your Singer Steed to do anything like that, but you will ask of it that perfect service without which such performances could never have been chronicled.

Hence the value of the SINGER "S" to you.

And, remember, every model is capable of equal service—of these there are 14 varying in H.P. from  $2\frac{1}{2}$  to  $4\frac{1}{2}$  and in price from £38 to £80.

Let us send you List.

**SINGER & CO., LTD.,  
Coventry and London.**





# ROBERTSONS

## 1913 MOTOR CYCLE DELIVERIES

(At time of going to press, viz., Dec. 19th.)

A.J.S. . . . . DEC.	HUMBER. . . . . DEC.	ZENITH GREEN . . . . . JAN.
BAT . . . . . IN STOCK	INDIAN . . . . . DEC.	<b>CYCLE CARS.</b>
BROUGH . . . . . DEC.	IVY . . . . . IN STOCK	CROUCH . . . . . 3 WEEKS
B.S.A. . . . . DEC.	IVY LADIES MODEL . . . . . IN STOCK	WALL . . . . . IN STOCK
CHATER-LEA . . . . . JAN.	MATCHLESS . . . . . FEB.	G.W.K. . . . . 1 WEEK
CLYNO . . . . . JAN.	NORTON . . . . . DEC.	MORRIS . . . . . 1 WEEK
DUGLAS . . . . . IN STOCK	REX-JAP . . . . . DEC.	<b>SIDECARS.</b>
ENFIELD . . . . . DEC.	RUDGE . . . . . IN STOCK	BRAMBLE . . . . . IN STOCK
EDMUND . . . . . IN STOCK	TRIUMPH . . . . . IN STOCK	MONTGOMERY . . . . . IN STOCK
F.N. . . . . IN STOCK	WILLIAMSON . . . . . IN STOCK	MILLFORD . . . . . IN STOCK
HENDERSON . . . . . IN STOCK	ZENITH . . . . . IN STOCK	

(NO EXCHANGES ON THE EARLIEST DELIVERIES).

### TRADE SUPPLIED.

TO LONDON-EXETER COMPETITORS:  
ROBERTSONS WILL BE OPEN TILL 9 P.M. ON TUESDAY  
THE 24th INST. FOR SUPPLYING BELTS, TUBES, PLUGS,  
LAMPS, GOGGLES, OIL, CARBIDE, ETC., ETC., ETC.

### EXCHANGES—EASY PAYMENTS

A FEW BARGAINS FROM ROBERTSONS SECOND-HAND LIST.  
(WRITE FOR FULL LIST.)

1912.	1911.	1910.
1288 TRIUMPH, 3½ h.p. standard model, lamp horn, and tools, very little used . . . . . £39	1203 SCOTT, 3½ h.p., 2-speed gear, chain drive, two stroke, twin cylinder water cooled, lamp, horn, and tools . . . . . £38	1241 REX DE LUXE, 4 h.p., 2-speed gear and clutch, hand starter, spring seat, lamp, horn, tools . . . . . £29
1274 A.J.S., 5 h.p., twin cylinder 2 speed gear, chain drive, lamp, horn, and tools . . . . . £52	1251 HUMBER, 3½ h.p., 2-speed gear and clutch, hand starting, lamp, horn, and tools . . . . . £36	1289 V.S., 7-9 h.p. 2-speed gear and clutch, lamp, horn, speedometer, watch, tools, and cane sidecar, in very fine order . . . . . £48
1290 F.N., 5-6 h.p., 4-cylinder, clutch model, lamp, horn, and tools. Practically unused . . . . . £39	1236 MATCHLESS and Matchless sidecar, 6 h.p., 2-speed gear and clutch, twin belts, lamp, horn and tools. Beautiful order . . . . . £62	1269 CALTHORPE, 4 h.p., with 1912 2-speed gear and free engine, lamp, horn, tools . . . . . £24
1251 BRADBURY, 3½ h.p., 2-speed gear and free engine, lamp, horn, and tools . . . . . £42	1287 BAT, 5-6 h.p., twin cylinder, clutch model, lamp, horn, and tools . . . . . £36	1292 BROUGH, 5 h.p., twin cylinder lamp, horn, and tools . . . . . £26

**SOLE LONDON AGENTS FOR**  
**CROUCH & WALL CYCLE CARS. BRAMBLE & MONTGOMERY**  
**SIDECARS. BROUGH, EDMUND, IVY, AND HENDERSON**  
**MOTOR CYCLES.**

**157, GREAT PORTLAND STREET, W.**

Telephone: Mayfair, 5767.

# ROBERTSONS



# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. Series discounts and special terms to regular trade advertisers will be quoted on application.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor St., E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



## SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

## SECTION II.

York and Lancashire.

## SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

## SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

## SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

## SECTION VI.

Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

## SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

## SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

## SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

## SECTION X.

Scotland.

## SECTION XI.

Ireland and Isle of Man.

## A SELECTION THAT GUARANTEES SATISFACTION



The Kingdom's largest Show of Motor Cycles, Sidecars, and Cycle Cars of 1913 and 1912 Models, and splendidly renovated second-hand mounts certain to give most satisfactory service.

CAN BE SEEN TO-DAY AT

# WATCHOPES

ASK FOR

TO-DAY'S LIST, WHICH INCLUDES—

6276.	8 h.p. 1912	ZENITH and sidecar	£60 0
6265.	3½ h.p. 1911	standard TRIUMPH	£32 0
6264.	6 h.p. 1912	2-speed MATCHLESS and canoelet	£65 0
6262.	2½ h.p. 1912	DOUGLAS Model G	£32 0
6261.	3½ h.p. 1910	F.E. TRIUMPH	£32 10
6260.	3½ h.p. 1912	ZENITH GRADUA	£43 10
6259.	3½ h.p. 1909	2-speed HUMBER and sidecar	£25 0
6258.	3½ h.p. 1912	ZENITH and sidecar	£45 0
6257.	3½ h.p. 1911	free-engine TRIUMPH	£35 0
6256.	3½ h.p. 1911	standard TRIUMPH	£30 0
6254.	3½ h.p. 1912	2-speed P. & M.	£52 10
6253.	3½ h.p. 1908	2-speed N.S.U.	£20 0
6252.	5-6 h.p. 1909	4-cylinder F.N.	£20 0
6251.	3½ h.p. 1912	single-speed HUMBER	£35 0
6249.	3½ h.p. 1912	2-speed BAT	£40 0
6244.	2½ h.p. 1912	GINGER	£30 0
6239.	3½ h.p. 1911	2-speed N.S.U.	£30 0
6238.	3½ h.p. 1912	ZENITH-GRADUA	£40 0
6237.	5-6 h.p. 1911	A.C. SOCIABLE	£50 0
6234.	3½ h.p. 1909	TRIUMPH	£25 0
6232.	5 h.p. 1911	twin A.S.L.	£25 0
6229.	5-6 h.p. 1912	T.T. BAT	£37 10
6227.	6 h.p. 1911	2-speed MATCHLESS	£50 0
6226.	2½ h.p. 1912	2-speed DOUGLAS	£40 0
6212.	3½ h.p. 1912	T.T. BRADURY	£32 0
6211.	2½ h.p. 1910	DOUGLAS	£20 0
6255.	3½ h.p. 1912	F.E. TRIUMPH, New	£50 0
6205.	6 h.p. 1912	2-sp. F.N. and sidecar	£55 0
6204.	8 h.p. 1912	CHATER-LEA No. 7 and sidecar	£75 0
6202.	7 h.p. 1911	2-speed INDIAN and sidecar	£50 0
6200.	8 h.p. 1912	3-speed CHATER-LEA	£67 10
6199.	3½ h.p. 1911	free-engine TRIUMPH	£37 10
6195.	3½ h.p. 1911	2-speed HUMBER	£30 0
6189.	6 h.p. 1912	F.E. MATCHLESS	£47 10
6187.	6 h.p. 1912	ENFIELD and sidecar	£65 0
6180.	8 h.p. 1910	ZENITH-GRADUA and sidecar	£45 0
6179.	3 h.p. 1912	2-speed N.S.U.	£30 0
6176.	3½ h.p. 1912	free-engine RUDGE	£35 0
6172.	3½ h.p. 1911	standard TRIUMPH	£33 10
6170.	3½ h.p. 1911	tourist REX	£28 0
6169.	3½ h.p. 1910	BAT	£30 0
6163.	3½ h.p. 1912	RUDGE multi	£55 0
6161.	3½ h.p. 1912	free-engine RUDGE	£40 0
6160.	3½ h.p. 1912	free-engine TRIUMPH	£43 0
6157.	3½ h.p. 1910	free-engine TRIUMPH	£35 0
6155.	3½ h.p. 1912	2-speed P. & M.	£57 10
6156.	3½ h.p. 1910	2-speed P. & M.	£38 0
6152.	6 h.p. 1912	REX Sidette	£50 0
6147.	3½ h.p. 1912	tourist REX	£20 0
6143.	3½ h.p. 1912	3-sp. NEW HUDSON	£40 0
6282.	2½ h.p. 1911	DOUGLAS	£25 0
6286.	2½ h.p. 1909	DOUGLAS	£17 10

# WATCHOPES

9, SHOE LANE,  
FLEET ST., LONDON, E.C.

## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle, Coventry'; or if 'London' is added to the address, then to the number given, c/o 'The Motor Cycle,' 20, Tudor Street, E.C.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with 'The Motor Cycle,' both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe & Sons Limited.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the notice as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR BICYCLES FOR SALE.

### SECTION I.

Northumberland, Cumberland, Durham, and Westmorland.

1913 Douglas Zenith, New Hudson, Rover, Smith, Precision motors send orders now for early delivery.—C. W. Smith, Northgate, Darlington. [X177]

3½ h.p. Humber Motor Cycle, 2-speed gear, with close 32 cane torpedo sidecar; a bargain, £36; to clear without sidecar £30.—Turvey and Co., The Motor House, Sunderland. [X4324]

3½ h.p. Triumph Motor Cycle, free engine, 1911 model, sold new in May 1912, in grand running order; £37; with sidecar, only used twice, £42.—Turvey and Co., The Motor House, Sunderland. [X4328]

2½ h.p. Humber Motor Cycle, T.T. twin, 3-speed, 1912 model, extra large tank, practically new, not ridden 400 miles, very fast; a bargain, £42, to clear.—Turvey and Co., The Motor House, Sunderland. [X4326]

3½ h.p. B.S.A. Motor Cycle, 1912, T.T. model, has won 2 several prizes in speed trials, has done over 70 m.p.h. in perfect condition; a bargain, £40.—Turvey and Co., The Motor House, Sunderland. [X4327]

RUDGE, 1912, 3½ h.p., free engine, with horn, speedometer, Lucas lamp, only done 2,800 miles, engine in first-class order; £39.—Box No. 2,050, The Motor Cycle Offices, Coventry. [X5880]

### SECTION II.

York and Lancashire.

L.

HITCHINGS', Ltd.,

LIVERPOOL, 74, Bold St.

TRIUMPH, Matchless, and James motor cycles, and Crescent cycle cars; sole agents; courteous service and absolute satisfaction guaranteed. Your enquiries invited by Hitchings', Ltd., 74, Bold St., the pioneers of motor cycling in the north. (Established 35 years ago. No connection with any other firm.) [X1779]

MOTO-REVE, 1910, 2½ h.p., just thoroughly overhauled; £20.—P. Moon, 18, Bloomhall Rd., Sheffield. [X9360]

1907 Magneto Triumph, new Dunlop back, lamp, speedometer; £12.—Scott's Garage, Alice St., Keighley. [X9312]

ROYAL Enfield, 2½ h.p., free engine, 2-speed, 1911, excellent condition; £35.—Turnbull, Kirkcaldy, Thirsk. [X4998]

1912 Douglas H. in perfect condition, with many extras.—Dr. McManus, County Asylum, Lancaster. [X8948]

2½ h.p. J.A.P., excellent condition, has 2 new Dunlop tyres; bargain, £8/10; must sell.—168, The Moor, Sheffield. [X2224]

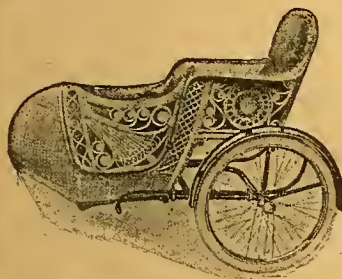
B.S.A.—Two 1912 machines, standard £36, 2-speed model £48; both splendid condition.—Darling, Sunnyside, Keighley. [X9086]



# CORONET SIDE CARS

are built of the finest materials by skilled workmen. Every car is as perfect as human knowledge and skill can make it.

The springing means riding comfort; the construction, freedom from sideslip. Every time you take the car out you can depend upon security, comfort, beauty, perfection. A CORONET IDEACAR embodies all the latest improvements; carries the fullest possible guarantee. Our free booklet explains why it will pay you to secure a CORONET. May we send it?



Prices from £6 : 6 : 0

Can be obtained from all dealers.

**TEE BEE LOW  
SEAT-PILLAR,  
5/- each.**

**NEW AMAG CARBURETTORS**  
fitted with variable jet and handle-bar control.

Price 17/6 each.

It is the time to obtain an up-to-date carburettor at a great reduction.

**Binks 2-Jet Carburettors.**

Increase your power by fitting a Binks. We will take your present carburettor in exchange. Write for quotation.

**Weather-Proof Magneto.**

Get rid of your out-of-date magneto, coil, or accumulator, and let us take them in exchange for the latest water-tight magneto.

**BOOTH'S MOTORIES,**

Keighley Mills, Bedford Street North,

**HALIFAX.**

Telephone 1062.

## MOTOR BICYCLES FOR SALE.

**3 1/2** h.p. Magneto Rex, splendid condition, recently overhauled; £15.—Runney, 73, Russell Rd., Whalley Range, Manchester. [X5870]

**1913** Triumphs, Ridges, Excelsiors, A.J.S., and Ford cars; book now for early deliveries.—Ridfern and Co.'s Garage, Rotherham. [X4397]

**1911** Douches, in fine order, £26; 1910 Triumph, £30; 1906 Triumph, mag. B. and B., £16; 1909 Triumph, £22.—Cross, agent, Rotherham. [X5910]

**1913** Clutch Triumph in stock, £55/10; 1913 3 1/2 h.p. Matchless, twin belts, 70 gns.; in stock.—Cross, agent, Rotherham. [X5911]

**6** h.p. Grandex-Precision, 1913, 3-speed, lamp, horn, tools, etc.; owner unable to take delivery; sacrifice £52.—R. Octoby, 9, Westbourne Av., Hull. [X5940]

**TRIUMPH**, T.T., 1910, little used, very fast, perfect; expert examination; all accessories; must sell, £27 cash, worth £35.—103, Rugby Place, Bradford. [X5914]

**PREMIER**, 3 1/2 h.p., 1911, Armstrong 3-speed, free engine, 1,500 miles only, new condition. Service inch belt; £38.— [X5487]

**3** h.p. Brown, Bosch, l.b.c., spring forks, adjustable pulley, Whittle, Cluecher and Palmer, unpunctured lamp, horn, spares; trial; £15.—Davidsen, 10, Swinton Av., Plymouth Grove, Manchester. [X5966]

**TRIUMPH**, 1912 Bowden 2-speed, Bosch, Triumph hub clutch, kick starter, all latest improvements, covers and tubes never been out machine as from makers; sacrifice £35.—Hebborn, 121, Falsgrave Rd., Scarborough. [X5955]

**MINERVA**, 3 1/2 h.p., Bosch, B. and B., complete l.b.c., new cylinder, rings, valves, and belt, also footboards, horn, spares, new Dunlop special, low, too powerful; £22/10; wanted, twin lightweight.—Ellicott, 149, Blenheim St., Hull. [X5941]

**PREMIER**, 1912, 2 1/2 h.p., Armstrong 3-speed gear, free engine, Cowey speedometer, Lucas King of Road lamp and generator, horn, extra toolbag, spare belt, unpunctured, excellent condition; £37/10.—Burgin, Hemsworth, near Wakefield. [X5907]

**ROVER**, 1912, Sturmer-Archer 3-speed, free engine, sidecar model, and grey Canoelet sidecar, apron, luggage grid, and lamp bracket, Antelope lamp, horn, spare new Dunlop belt and Dunlop butted tubes, plugs, etc., new end of October, not done 200 miles; £55, or separate.—Hatchings, Beer Shop, Cudworth, near Barnsley. [X5493]

## SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

**SCOTT**, 1913 model, for immediate delivery.—H. Braddock, motor agent, Marple. [X5879]

**ROVER**, 1912, free engine, as new, only soiled; £42/10.—Collyer, 14, Tamworth St., Lichfield. [X5928]

**1913** Scott, A.J.S., Triumph, James; book now for early delivery.—Nelson, Gloddaeth St., Llandudno. [X4392]

**DOUGLAS** and Williamson, 1913; immediate delivery of all models; Douglas Model R, actually in stock.—Moss, Wem. [X5901]

**1913** A.J.S., 3-speed, the perfect motor cycle, solo or sidecar; delivery January. — F. W. Salmon, Birmingham, Chesterfield. [X4481]

**TWO** Motor Cycles, 3 1/2 h.p. and 4 1/2 h.p., good engines; best cash offer the two; money wanted.—C.H., Sandford, Holmes Chapel. [X5929]

**1912** Scott, as new, delivered July, lamp, horn, and watch; £55.—A. Warrington, 163, Grange Rd., Birkenhead. Early delivery of 1913 Scotts.

**THE** North Wales Motor Exchange, Holt St., Wrexham. Tel. 283.—Why wait? 1913 models actually in stock, a deposit will secure.—1913 T.T. Douglas, £48; 1913 2 1/2 h.p. Singer touring model, £39. Show model; 1913 New Imperial, 3 1/2 h.p., J.A.P., 3 speeds, ideal sidecar machine, £54/7. Olympia Show machine: 1913 2 1/2 h.p. Humber Twin T.T. model, £43/10; we can deliver 6 h.p. A.J.S. in February, 3 1/2 h.p. 3-speed James January, 3 1/2 h.p. 2-speed Premier January, Ridges January, and Singers in January. If you require a 2nd-hand mount, get our list, we can sell you a good mount cheap, cash or easy payments. Cycle cars; we can deliver Humberettes in January and Singers in April. Exchanges a speciality; place your order at once, otherwise you will be too late. Sidecars we can deliver from stock. [X5913]

## SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

**MOTOSACOCHE**, 1909, mag., good running order; £15.—Glover Bros., Windsor St., Coventry. [X5948]

**TRIUMPH**, 2-speed, kick starting; £35; accept sidecar part.—32, Livingstone Rd., King's Heath. [X5949]

**1913** Matchless, Triumph, Scott, Zenith, Douglas; Bramble, Canoelet sidecars; immediate deliveries; get our prices.—Clifford's Motories, Eastwood. [X5933]

**TRIUMPHS**, new 1913 models, 3-speed £59/15, free engine £55; in stock for immediate delivery; also one brand new 1912 free engine Triumph, £50.—The Premier Motor Co., Aston Rd., Birmingham. [X5949]

# Premier Cycle Cars

**BEST VALUE FOR 100 GUINEAS.**  
If you wish to secure early delivery of one of these high-class cycle cars, it will be necessary to place order now. They will be going at a premium in another month. Save money by purchasing now.

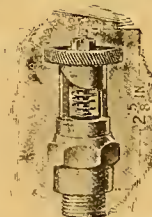
## BARGAINS IN REXES.

7 h.p. REX, M.O.V., 2 speeds, handle starting, complete with 140 sidecar (1911) .....	£42 10
5 h.p. REX, 1911, M.O.V., 2 speeds, complete with Rex spring wheel 112 sidecar .....	£40 0
5 h.p. REX, 1910, M.O.V., 2 speeds, handle starting .....	£32 10
5 h.p. REX, 1909, with 1910 engine .....	£18 10
5 h.p. REX, 1908, 2 speeds, handle starting .....	£22 0
5 h.p. REX, 1910, magneto, h-b. control .....	£18 10
5 h.p. REX, 1910, M.O.V., magneto, etc. ....	£19 10
5 h.p. REX, 1908, spring forks, magneto .....	£16 10

## VARIOUS BARGAINS.

3 1/2 h.p. PREMIER, brand new, 1912 model .....	£34 10
3 1/2 h.p. PREMIER, 3-sp. Sturmer, 1911, new .....	£44 10
3 1/2 h.p. PREMIER, 1912, 3-sp. model, run 1,000 mls. ....	£39 0
6 h.p. DOT, 1912, J.A.P. engine, M.O.V., 2 speeds, complete with sidecar; cost £60 .....	£47 10
3 1/2 h.p. BAT, 1910 model, J.A.P. engine, spring frame, speedometer .....	£22 10
3 1/2 h.p. P. & M., 1910, with speedometer, horn back rest, other spares, and sidecar .....	£40 0
3 1/2 h.p. TRIUMPH, 1911, free engine, complete with sidecar .....	£39 0
3 1/2 h.p. HUMBER, 1911, 2 speeds, handle starting, with Millford sidecar .....	£31 15
3 1/2 h.p. HUMBER, 1910, 2 speeds, handle starting .....	£31 0
3 1/2 h.p. N.S.U., 1908, M.O.V., magneto .....	£13 10
3 1/2 h.p. QUADRANT, magneto, spring forks .....	£13 10
2 1/2 h.p. Twin ENFIELD, 1910, lightweight .....	£17 10
2 1/2 h.p. WOLF, lightweight, 1911, magneto .....	£15 0
1 1/2 h.p. WOLF, lightweight, 1910 model .....	£8 10
3 h.p. R. & P., vertical engine, 26 in. wheels .....	£6 15
3 h.p. MINERVA, nice order .....	£6 10
3 h.p. ANTOINE, vertical engine, spray .....	£6 15
3 h.p. QUADRANT, vertical engine .....	£5 10
3 h.p. SAROLEA Tricar, twin, P. & M. gear .....	£8 10
3 1/2 h.p. PHENIX Tricar, Minerva engine, M.O.V., 2 speeds, fan-cooled, coach-built .....	£10 14

## EASY STARTING for 12/6



**ENDRICK (PATENT'S)  
DECOMPRESSORS**

Give easy starting at a walking pace and dead slow running when required. Suit all engines with cylinders over 50 c.c. standard plug thread. PRICE 12/6. Fits into valve cap or in lieu of compression tap. Boring and Screwing. Valve Cap 1/- each. Postage 3d. Y Adapters for engines with one plug hole. 2/6

## MISCELLANEOUS.

New Motor Cycle Drop Frame, Stand, Carrier, Pedalling Gear, Mudguards, etc. ....	£3 11 6
Bosch Magneto, suit Triumph .....	37/6
New Cane Sidecar Body, side door .....	45/-
Coronet Pistons, new, 81 mm. bore .....	2/6
New 26 x 2 1/2 in. Wood-Milne Cover .....	35/-
Shop-soiled High-tension Magneto .....	£2 12
New 26 x 2 1/2 Rubber Studded Cover, cost £2 5s. ....	27/6
Bosch Magneto, suit Twin Rex .....	57/6
Nearly New 1912 Senspray .....	19/6
Bradbury Pattern Handle-bars, rin. stems .....	4/6
Shop-soiled Sidecar, good make .....	£4 5
Sidecar, complete with art cane body .....	38/6
Long Handle-bars, dropped ends .....	5/6 and 6/6
Coronet Silencers, up to 5 h.p. ....	3/3 and 4/6
New Sidecar Basket, canoe front .....	21/-
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New Amag Carburettor, h-b. control .....	17/6
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New Sidecar Frame and Wheel .....	35/-
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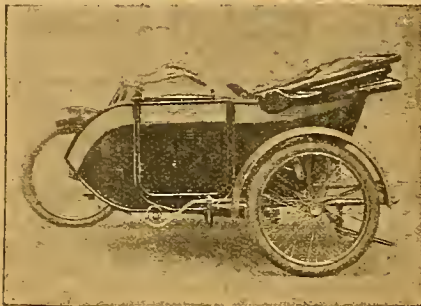
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Telephone: 1062.

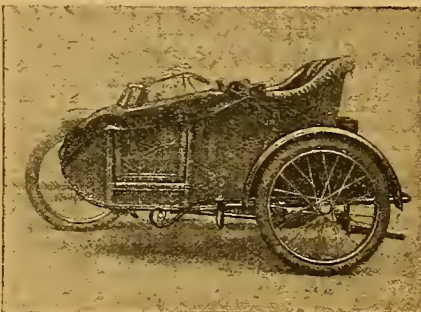


## THE PORTLAND SIDECAR

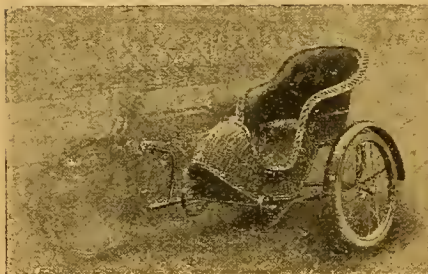
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## MOTOR BICYCLES FOR SALE.

ROVER, June, 1912, 3½ h.p., Sturmer-Archer 3-speed gear, only done 1,500 miles, owner leaving the district; what offers? appointment may be arranged.—Address, Box L339, The Motor Cycle Office, 29, Tudor St., E.C.

1912 Model 2½ h.p. Twin Humber (new at Whitsuntide), Armstrong 3-speed gear, 2½ in. rear tyre, double footrests, belt guard, spare belt, lamp, horn, and spares, splendid condition; new offer to £37.—Geoffrey Smith, Dunelm, Northumberland Rd., Coventry. [0141]

BARGAIN.—Triumph, 1907 model, with 1911 cyl. and piston, 1912 improvements, new belt, Dunlop tyres, Triumph lamp and generator, Jones speedometer, T.T. and touring handle-bars, spares and tools, in splendid running order; take £27/10, or new offer.—Box No. 1,435, The Motor Cycle Office, Coventry. [0167]

PLASTOW, Grimsby, has for sale a 1912 Douglas, Model G, brand new, £36; 1911 Douglas, Model K, £32/10; 1911 F.E. Triumph, £36; 1912 F.E. Triumph, £42; 1910 F.E. Triumph, £32; 1911 Premier lightweight, £21; 1910 twin Enfield, £18/10; 1911 Indian, 7 h.p., including new spare tyre, £42. [X5249]

BARGAINS in new machines.—I have managed to purchase a limited quantity of first-class shop-soiled, but otherwise new, machines at ridiculous prices. Now is your chance to secure one at equally astonishing prices. If you wait until the spring you will be unable to buy on anything like such terms. Do it now. Particulars of machines: new machines, cheap, absolute bargains. Blumfield, 4 h.p., Sturmer mar., B. and B. carburettor, Armstrong 3-speed, Dunlop tyres, price £40/10; Ilston-Smith, 2½ h.p., Bosch mag., B. and B. carburettor, B.H.K. free engine clutch, Dunlop tyres, price £30/10; J.A.P., 4 h.p., Bosch mag., B. and B. carburettor, B.H.K. free engine, Dunlop tyres, price £35/10; J.A.P., 4 h.p., Bosch mag., B. and B. carburettor, fixed gear, Hutchinson tyres, £23/10; also a new Bosch magnetos, price £3/10; and B. and B. carburettors, price 18/6. Write for any further particulars which you may require, or make an appointment.—D. Ashmore, 1, Newhall St., office 62, Birmingham. [0207]

## SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon and Bedford.

1912 3½ h.p. Twin Premier, as new; £39/10.

1912 3½ h.p. Zenith, grand order; £45.

1911 3½ h.p. Zenith; £38.

1911 Triumph, F.E.; £38.

1912 Rover, 3-speed; cost £63/12; been 200 miles; £50.

1912 3½ h.p. Bat, P. and M., 2-speed, as new; £45.—Knaster and Cox, 29, Green St., Cambridge. [X539]

1913 3-speed Triumph, ditto Bradbury, and free engine Triumph, just in.—Triumph Agent, King's Lynn. [X5301]

DOUGLAS, 1913 model R, 2-speed, kick start; in stock, immediate delivery; £52.—Robinson's, Green St., Cambridge. [0239]

DOUGLAS, 1913, model P, T.T. model; immediate delivery; £48.—Sole Douglas agents, Robinson's, Green St., Cambridge. [0241]

1912 Triumph, free engine, T.T. model, tyres and engine as new; £45.—Robinson's, Green St., Cambridge. [0242]

1912 2½ h.p. Brown Precision, Dunlop tyres, not ridden 200 miles; £25.—Robinson's, Green St., Cambridge. [0243]

DOUGLAS, 1911, 2-speed, racing model, tyres and engine first-class; £36.—Robinson's, Green St., Cambridge. [0244]

EARLY Deliveries of Triumphs, Matchless, Douglas, Enfields, Bradburys, B.S.A.'s, Humber's, Premiers, Ridges, Humberettes, Lamberts, Thetford. [X5002]

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1912 6 h.p. Enfield Combination, nearly new; £72.

1912 Scott, new Nov. 1-t.; £54.

1912 Scott and New Millford £14 Sidecar; £66.

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1911 2-speed Douglas; £28.

JENKES'S Motor Garage and Cycle Depot, 68, Lead St., Bowdley. [9083]

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ENFIELD, 1912, 2½ h.p., twin, £36

ZENITH, 1912, 6 h.p., Gradua gear, £57

HUMBER, 1912, 3½ h.p., 2-speeds, £41

PREMIER, 1912, 3½ h.p., twin, £32

REX, 6 h.p., 1912, sidette, like new, £56

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MATCHLESS, 8 h.p., 1911, 2-speeds, £60

REX, 1911, 3½ h.p., de luxe, excellent order, 2-speeds, handle start... £30

F.N., 1911, 5-6 h.p., four-cylinder, shaft drive, beautiful condition..... £28

REX, 1911, 3½ h.p., cone clutch, free engine, handle starting..... £26

PHOENIX, 8 h.p., duocarb, water-c., 2 speeds and reverse..... £32

MINERVA, 4½ h.p. Twin, spring forks, low built..... £16

ZENITH, 3½ h.p., 1911, Gradua gear, excellent order..... £36

ARIEL, 2½ h.p., handle-bar control, 26 in. wheels..... £12

A.J.S., 2½ h.p., twin, just been overhauled and re-enamelled..... £24

F.N., 5-6 h.p., four-cylinder, exceptionally good order..... £26

MOTO REVE, 2½ h.p., grey finish, 1910 model twin..... £22

ZENITH, 3½ h.p., 1911 model, Gradua gear, a bargain..... £32

N.S.U., 1½ h.p., 1908 model, magneto, low built, good order..... £12

F.N., 2½ h.p., shaft-driven model, two speeds..... £22

HUMBER, 1910 model 3½ h.p., 2-speeds, handle-starting..... £30

ENFIELD, 1910, 2½ h.p., twin, belt drive, khaki finish..... £20

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BRADBURY, 1912, 3½ h.p., 2-speed, all accessories, sidecar, speedometer..... £53

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1912 6 h.p. 2-speed Sidette de Luxe	£75 0	
1912 REX Cane Sidecar	£12 10	

Offers wanted. Cash or exchange.

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1912 Armstrong 3-speed Gear; new and complete;  
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RUDGE, 3½ h.p. Tourist, grand condition	£37 10
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PRECISION (Ivy), Druids, h.b. control	£32 10
1910 6 h.p. 2-speed N.S.U. & CHATER-LEA coachbuilt sidecar	£38 0
ROVER, 1911, clutch model; cost £55	£39 10
P. & M., 2½ h.p., h.b. control, bargain	£12 10
ANTOINET, 6 h.p., magneto, Saxon forks	£21 10
RDC, 5 h.p., 2-speed, wants attention	£19 10
P.F., special machine, 3½ h.p., vertical engine	£9 10
BROWN 3½ h.p., h.b. control, good order	£11 10
HUMBER, 3 h.p., chain drive, runs well	£8 10
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WOLSELEY 4-cylinder 2-seater Car	£39 10
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Easy Payments quoted on any machine.

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REX, 5 h.p., 1909, 2-speed, de Luxe	£29 10
REX, 5 h.p., 2-speed, and sidecar	£29 10
REX, 1912, Twin 2-speed, de Luxe	£24 10
REX, 5½ h.p., Twin, spring forks	£15 10
REX, 1912, 4 h.p., Tourist, done 200 miles	£38 10
REX, 7 h.p., twin very powerful	£29 10
REX, 3½ h.p., magneto, spring forks	£17 10
REX, 2½ h.p., magneto, lightweight, h.b. con.	£16 10
REX, 1911, 5 h.p., 2-speed, Rex de Luxe	£38 10
REX, 4½ h.p., free engine, h.b. control	£13 10
REX, 3½ h.p., light and low, h.b. control	£21 10
REX, 5½ h.p., Twin de Luxe, mag. ignition	£21 10

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1912 3½ h.p. Zenith, used very little, fitted with Hutchinson tyres, splendid condition, tools, etc.; any reasonable trial allowed, fully guaranteed; £43.

1912 2½ h.p. Hobart, with 3-speeds and free engine, in excellent condition; others invited.

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SOLE Agents for Scott, Zenith, Imperial and Morgan machines; good deliveries; deferred payments from 2½%.

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1912 Premier, in good condition; best offer over 15 gns.

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1909 Free Engine Triumph and Sidecar; best offer over 27 gns.

1912 2½ h.p. 2-speed Free Engine Enfield; best offer over 29 gns.

1912 2½ h.p. 2-speed Douglas, free engine, kick starter; best offer over 31 gns.

1911 (Dec.) Matchless; best offer over £24.

1912 Zenith-Gradua and Sidecar; best offer over 37 gns.

H. JULIAN, Motor Cycle Depot, 84, Broad St., Reading. [9345]

2½ h.p. New Hudson, new May, 1912; £36.—Warner, West St., Clipping Norton. [X5912]

1913 Douglas; earliest deliveries of all models.—Morris Garage, Oxford. [0203]

1913 Phelon and Moore; a few left for early delivery; secure one before it is too late.—Sole district agents, Morris Garage, Oxford. [0204]

1913 Triumphs; December deliveries of clutch and 3-speed models.—Sole district agents, The Morris Garage, Oxford. [0205]

3½ h.p. Roe, m.o.v., adjustable pulley, Bosch, complete; £6/10, or offer.—38, High St., Ventnor. [9330]

F.N., 4 h.p., good running order, just been overhauled by expert; £18.—Craig-Kelly, Manse, Newport Pagnell. [X5851]

1912 T.T. Bat, 5 h.p., not done 700 miles; £50.—Apply. W. G. Read, Wellington Cycle Works, Maidenhead. [9238]

1913 Douglas and Williamson; all models from stock.—Gibb, Gongb, and Son, Gloucester. [0250]

A.J.S., the thing for 1913; order now, early deliveries of all models.—Bristol and Bath agent, S. J. Fair, 201, Cheltenham Rd., Bristol. [X5324]

B.S.A. Motor Cycles, the best 3½ h.p. mount for 1913; early deliveries all models.—Sole Bristol and district agents, S. J. Fair, 201, Cheltenham Rd., Bristol. [X5323]

DOUGLAS, E., done only 10 months' easy work, grand condition, h.b. mag. control, spring pillar, horn, lamp, mud screen, free engine; £30.—Potter, 21, Frayne Rd., Ashton, Bristol. [X5480]

TRIUMPH, 1910, free engine, almost new tyres, engine overhauled, £32/10; Triumph, 1911, fixed, only run 5,000 miles. £32; new 3½ h.p. Singer, F.E., special clearance price; delivery 1913 B.S.A.'s and Humbers from stock.—Rowland and Sons, Salisbury. [9340]

DOUGLAS, 1913 models, from stock; A.J.S., 6 h.p., 3-speed, clutch model, delivery this week; Scotts in January; B.S.A., F.N., Bradbury, Rudge, Zeniths, Williamson, Butts, Ariel, Morgan runabouts, Ivy Precision, for early delivery, in some cases from stock.—A. G. H. Alsford, The Motor Cycle Depot, 43, Palmers-ten Rd., Boscombe. [9154]

1912 2½ h.p. Royal Enfield, 2-speed, new, clearance £45/10; 1912 Triumph, F.E., and Canoelet sidecar, mileage 2,000, 50 gns.; 1911 Triumph, F.E., in new condition, offers; 1911 late, Triumph, F.E., mile age 2,500. £37/10; 1910 Hunley, 2-speed, £25; 1910 Royal Enfield, belt drive, £15, Kerridge, Q.W.K., Triumph, and B.S.A. agent, Alton, Hants. [X5877]

### SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

1912 P. and M., little used, excellent condition; £50.—Potter, 33, Bigwood Av., Hove. [X5916]

1911 Enfield, 2½ h.p., 2-speed, F.E., chain drive, good condition; £27/10.—Hull, 56, West St., Hove. [X5875]

TRIUMPH, 1912, spares, and all accessories, complete, in first rate condition; £36; new Continents.

TRIUMPH, 1908, in unusually good order, lamp, and spares; £23.—Osman, 26, Mortlake Rd., Richmond.

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Side-entrance Models, Wicker, £7. Coach-built, £9 10s.  
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All complete with Hutchinson or Michelin 26 x 2½ in. tube and tyre, and quick detachable joints.

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MODEL D DE LUXE,  
£6 5s.

MODEL C,  
with Cane Body, £7.



MODEL E,  
with Reversible and  
Detachable Child's Seat,  
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MODEL D,  
with Coach Built Body,  
£8.

## OUR REED CANE BODIES

have undoubtedly hit the mark.

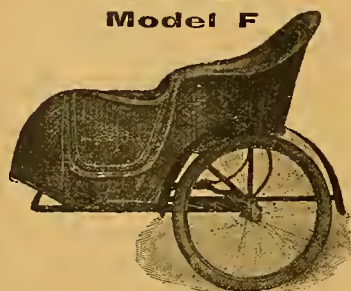
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wickerwork, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

### Model G



£7 10s.

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£8 8s.

All our Sidecars are supplied Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for List.

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Cowey Speedometer, done too, perfect	£3 10
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New Rubber-studded Covers, 26 x 2 1/2, beaded	17/6
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Triumph pattern Handlebar, new	6/3
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New Prested Trembler Coil	15/-
Lycett's "Top Tube" Toolbags	7/-
New Screw-cutting Lathe, 4in. centres	£6 10

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BAT, 3 1/2 h.p., R. and B., new tyres, lamp, horn, spares, Lyso belt; bargain, £10/10.—125, Tramore Rd., Earlsfield. [X5936]

TRIUMPH, Latest 1911, clutch model, magneto, nearly new; great bargain, £36/10.—1, Ehner St., Wandsworth. [X5904]

2 1/2 h.p. Quadrant, just re-enamelled and overhauled, 24 guaranteed perfect running; £6/10.—Dale, grocer, Broadway, Barking. [X5874]

2 h.p. Minerva, good condition, wants new back tyre only, 1912 B.B. carburetter; £3.—F. Nash, High St., Steyning, Sussex. [9518]

A.J.S., 6 and 2 1/2 h.p., chain-driven, 3 speeders; order now to avoid disappointment.—Crow Bros., 190, High St., Guildford. [8519]

EARLIEST Deliveries of Ariels, New Hudsons, Humbers, B.S.A.'s, James—Lamb's Motor Stores, 151, High St., Walthamstow. [X3717]

BUCK, 4 h.p., 1912, free engine, the engine with reserve power, accessories, and spares, little used; trial; £35.—Deneham, Foxley, Purley. [9327]

TRIUMPH, 1912, 3 1/2 h.p., free engine model; instant delivery; £55, cash, or deferred payments.—John Barker and Co., Kensington, High St., W. [0130]

T.T. Racing Triumph Motor Cycle, Sturmer-Archer 3-speed, special engine, only run 100 miles in T.T. race; £47.—S. Gaspar, Hawkhurst, Kent. [9331]

PRELON and Moore, Ltd., 4, Percy St., W., have several 2nd-hand P. and M.'s for sale; particulars on application, or can be seen at above address. [0131]

QUADRANT, 4 h.p., 3-speed, 1912, £59/10 machine, shop-soiled; will consider offers to clear.—Applique Bros., motor agents, Walthamstow. Phone: 517. [8260]

MATCHLESS J.A.P., 1912, 8 h.p., 2 speeds, free engine, only run 1,000 miles, also £20 coach-built sidecar, as new; £75.—Noel Mees-n, Battlesbridge, Essex. [9308]

6 h.p., 1912 (August) Zenith, lamp, horn, speedometer, drip feed, tools; trial run; just overhauled; good as new; £62.—Mac, 54, Bridgeman Rd., Teddington. [9300]

TRIUMPHS.—Immediate delivery of 1913 models; a few 1912 new Triumphs, clutch models, at special prices.—F. Spearman, Bridge St. Garage, Bishop's Stortford. [9224]

TRIUMPH, 1909, splendid condition, lamp, horn, spares, £25; with Millford sidecar, £28; or exchange for 2 1/2 h.p. Douglas.—Francis, 174, High St., Tooting. [9318]

TRIUMPH, 1911, clutch model, N.S.U., 2-speed, Watford speedometer, Brooke seat and rest, new belt perfect condition; any trial; £38.—Chatwins, King St., Richmond. [9355]

HUMBER, 3 1/2 h.p., 1911, 2-speed, and free engine just been overhauled by makers, tyres and bell nearly new; price £35.—Seen and tried, 2, Milner St., Cadogan Sq., S.W. [9307]

ENFIELD, 2 1/2 h.p., 1912 model, new August, 850 miles only, perfect condition, unused spare chain tools, etc.; owner going abroad; bargain, £37.—Stevens, Parkleigh, Farnham [9324]

TRIUMPH J.A.P.'s, 1913 models; catalogue upon application to Cass's Motor Mart, sole agents. The finest J.A.P.-engine motor cycles on the market; exchanges or extended payments.

CASS'S.—Scott, late 1911, 2-speed, free engine, kick starter, first-class condition; £45, or near offer.

CASS'S.—L.M.C., 1912, 4 h.p., 2-speed, Kempshall tyres, accessories, machine not run 700 miles; bargain, £42.

CASS'S.—Douglas, 2 1/2 h.p., Model E, 1911, clutch and free engine, accessories, splendid machine; £32/10.

CASS'S.—1913 new machines. Practically every make supplied. For prompt delivery book immediately. List of shop-soiled and second-hand machines upon application; splendid stock; inspection invited; exchanges or extended payments; also large stock of new and second-hand accessories, belts, tyres, etc.—Call or write, Cass's Motor Mart, 5, Warren St., W. (opposite Warren Street Tube Station). Tel.: 3624 Mayfair. [9368]

1913 Motor Cycles.—Why wait for deliveries? I can deliver Rovers, New Hudson, Bradbury, Premiers, Enfield, Douglas, Zeniths, Morgans, etc., etc., all in January; write for lists.—Butcher and Co., Kingston-on-Thames. [X5937]

INDIAN, 7 h.p., this year's 2-speed and engine model, only 5 months old, with about 215 spares, including race handlebars, for the ridiculous low price of £59; any trial and seen any time.—18, Hampstead Mill Gardens, N.W. [19193]

1912 Douglas, Model K, run 12,000 miles, lamp, horn, spares, overalls, new Rom buck, spare Hutchinson fitted, leather band, Jones speedometer, driving chain requires repair; £40.—Henderson, 17, Hampstead Lane, Highgate, N. [9315]

TRIUMPH, late 1911, T.T. roadster, splendid condition, very little used, Rex exhaust whistle, all spares, inner tube, new P. and H. lamp, generator, used twice only, wants seeing; £36.—Grimaldi, 5, Hill-side Mansions, Jackson Lane, Highgate. [9305]

TRIUMPH, 1907, fitted with 1911 cylinder, piston, ball bearings, Bosch hall bearing waterproof mag., B. and B. carburetter, Palmer rubber studied tyre, £20; 2 1/2 h.p. Larquin and Couderc, h.h. Amac, Dunlops, etc., £10, or near offer.—Hutchings, 502, Albany Rd., Cam- [9364]

## "IXION" says:—

"The MORGAN Chassis, weighing 2 1/2 cwt., with an 8 h.p. engine, has few rivals either in lightness, price, or general efficiency."

WE CAN GIVE EARLY DELIVERIES.

Price 85 guineas.

EXCHANGES QUOTED.

## 1913 A. J. S., New Hudsons, Swift Cycle Cars

EXCHANGES QUOTED.

### THIS WEEK'S BARGAINS.

3 1/2 h.p. 1913 RUDGE, new	£48
8 h.p. CHATER LEA Cycle Car, 3 speeds	£60
1912 3 1/2 h.p. NEW HUDSON, 3 speeds	£45
1912 3 1/2 h.p. RUDGE MULTI	£45
3 1/2 h.p. REX, vertical, M.O.V., good	£14
3 1/2 h.p. PREMIER, 2 speeds, new	£46
1 1/2 h.p. N.S.U., 2 speeds, Bosch, Druids	£24
1912 6 h.p. REX DE LUXE, 2 speeds, chain drive	£45
1910 5-6 h.p. REX DE LUXE, 2 speeds, M.O.V.	£30
1912 2 1/2 h.p. NEW HUDSON, 3 speeds, new	£42
1911 3 1/2 h.p. PREMIER, 3 speeds, new	£46
1910 SCOTT, a beauty	£32
1 h.p. 1911 QUADRANT, Roc 2 speeds	£33
1 h.p. WOLF, magneto	£15
1911 Lady's HOBART, Armstrong 3-speed	£32
3 h.p. TRIUMPH, vertical, M.O.V., good	£15
1 1/2 h.p. 1907 TRIUMPH, extra good	£25
3 1/2 h.p. 1910 TRIUMPH, very fine	£30
3 1/2 h.p. 1910 TRIUMPH, clutch model	£35

### SINGLE-CYLINDER REXES.

3 1/2 h.p. 1908 Tourist, 1909 engine	£23
3 1/2 h.p. 1909 Speed King, extra fine	£23
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17
3 1/2 h.p. 1910, fine goer	£25

### TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£20
5-6 h.p. Bosch, Lloyd's variable gear	£22
5-6 h.p. De Luxe, 1908, 2-speed model	£25
1910 5-6 h.p. Rex De Luxe, 2-speed	£30

### SIDECAR COMBINATIONS.

Brand new 3 1/2 h.p. 2-speed PREMIER and new 10 guineas sidecar	£55
5-6 h.p. 2-speed REX and sidecar	£30
910 5-6 h.p. REX, 2-speed and sidecar	£35

## £5 DOWN SECURES ANY OF THESE. BALANCE 30/- MONTH

3 1/2 h.p. REX, M.O.V., spring forks	£14
3 1/2 h.p. 1908 REX, Bosch magneto	£17
3 h.p. Twin REX, spring forks, h.b. control	£16
WOLF Lightweight, magneto, 26in. wheels	£15
1 1/2 h.p. WOLF Tricar, 2 speeds	£19

Discount for Cash down.

## MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker. Two styles to choose from.

PRICE 32/6 EACH.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

### MISCELLANEOUS BARGAINS.

Rex pattern foot brake, new	7/6
Belt carrying case	3/6
Cycle Car Clutch, leather to metal	12/6
Loop Frame, with forks	15/-
Cowey Speedometer, done 5,000	£3
New Lycett's Saddle, large size	9/6
F.R.S. Headlight, new	25/-
1912 B. and B. Carburetters, vary jets	27/-
1912 Senspray Carburetters	28/6
Sidecar Aprons, green or red, with studs	7/6
Mills-Fulford Sidecar, good	£4
One ditto, additional room for child	£4
Pair 3 1/2 h.p. Druid Forks	30/-

## Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane.

**HALIFAX** (Two minutes from G.P.O.)

Telephone 919.



**SCOTT'S**

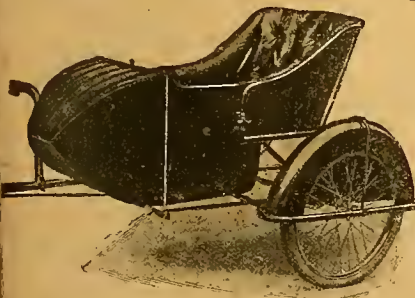
POWELL STREET, HALIFAX.

We can supply anything,  
especially

**RUDDGES**      **ZENITHS**  
**JAMES**        **DOUGLAS**  
**LEVIS**         **CLYNO**

ENFIELD, 1912, two-speed, \$52 worth for \$38, shop-soiled ..... \$50 0  
SCOTT, 1912 ..... \$50 0  
PREMIER, 1912, 2-speed, 3½ h.p., with 10-guinea sidcar ..... \$47 10  
RUDDGE-MULTI with sidcar, etc. .... £0 0  
PREMIER, like new, 1912 ..... \$36 0  
BAT, 1911-1912, J.A.P. engine, P. & M. two-speed ..... \$39 0  
HUMBER, 1911, 3½ h.p., two-speed, take sidcar ..... \$35 0  
RUDDGE Standard Record Breaker, 1912 \$34 0  
REX, 1911, 5 h.p., 101st, like new ..... \$23 0  
REX, 1910½, two-speed, 5 h.p., take sidcar ..... \$29 0  
TRIUMPH, 3½ h.p. .... \$19 0  
HUMBER, 1912, 2-speed, handle starting NEW HUDSON Lightweight, 2½ h.p. Jap. like new, 3-speed gear, a bargain \$32 0  
RUDDGE, Standard 1912, 3½ h.p. .... \$38 0  
NEW HUDSON, 3½ h.p., 1912, not done 300 miles, 3 speeds ..... \$46 10  
HUMBER, 3½ h.p., 2-speed and free engine, take a sidcar ..... \$36 0  
TRIUMPH, 3½ h.p., late 1908, a beauty \$25 0  
TRIUMPH, with 2 speeds and free engine ..... \$26 0  
RUDDGE-MULTI, like new ..... \$43 0  
CHATER-LEA-J.A.P. 5 h.p., free engine \$23 0  
REX, 1911, 3½ h.p., 2-speed, like new. \$36 0  
REX, 1908, 3½ h.p., h.b.c. .... \$16 0  
REX, 1910, 5-6 h.p., 2-speed and free engine, complete with sidcar ..... \$36 0  
P. & M., 1909 2-speed ..... \$28 0  
CHAMPION, 1911 like new ..... \$23 0  
F.N. Lightweight, 1911-12, shaft drive, shop-soiled, complete with 10 worth of spares ..... \$35 0  
F.N., 5-6 h.p., fitted with 2-speed gear and free engine at a cost of over £80, a bargain ..... \$36 0  
HUMBER, 3½ h.p., and forecar, P. & M. 2-speed. .... \$18 0  
MINERVA, 1908, 3½ h.p., spring forks etc. .... \$15 0  
REX, 2½ h.p., B. and B. .... \$8 0  
AUTO-MOTOR, 3 h.p., h.b.c., etc. .... \$7 10  
REX and forecar, complete, with free engine, h.b.c. .... \$14 0  
8-guinea Sidcar, second-hand ..... \$4 4  
4½ h.p. N.S.U. Engine, twin, like new \$5 10

We have a large quantity of Pedley Tyres and Tubes, 26in. x 2½in., 26in x 2½in., and 26in. x 2½in. to fit 2½in.



WRITE FOR CATALOGUE,  
And let us quote you.

SCOTT, Victoria Motor House,  
Powell Street, HALIFAX.

Telephone—433, National.  
Telegrams—"SCOTT, Powell Street, Halifax."

**MOTOR BICYCLES FOR SALE.**

**ZENITHS.**—Don't let Easter steal a march on you, it will soon be here; place your order now and ensure guaranteed delivery date of any model; come and see our selection of sidcars before ordering elsewhere. —Wimbledon Motor Manufacturing Co., 25, Imperial Parade, Wimbledon. [9181]

8 h.p. 1912 T.T. Twin Bat, new April last, finished grey, complete with J.A.P. overhead valve engine, mag., Brown and Barlow carburettor, adjustable pulley, spare belt, Dunlop and Bates tyres, adjust new, carrier, stand, spring forks, F.R.S. lamp and generator, Watford speedometer to 80 m.p.h., horn, tools. £55; also 3½ h.p. 1913 type T.T. roadster Ivy-Precision, new end (4 August, 1912, mag., spring forks, Dunlop tyres like new, F.R.S. lamp set, Avon forced induction, 2 brakes, stand, carrier, spare belt, tools, adjustable pulley. £40; winners of several hill-climbs; or near offers—Digby Johnson, Westmorland, Tunbridge Wells. [9302]

**MESSRS. PALMER and Kitson, South Eastern Garage, Heavey Hill, London S.E.** invite your attention to the following machines: Triumph, July, 1912, £48; Bat-Jap, Sept., 1912, 6 h.p., £48; Royal Enfield, 1912 as new, 2 speeds, 2½ h.p., £40; U.S.A., late 1911, £36; Rex, 1911, 5-6 h.p., 2 speeds, £26; Ivy-Precision, 1912 3½ h.p., £32; Triumph T.T., 1911, £35; Torpedo Precision, 2½ h.p., £32; 1908 Triumph, £25; N.S.U., 3½ h.p., 1911, £26; R.S. 3½ h.p., £25; Bat-Jap, 1911 3½ h.p., £25; F.N., 4-cyl., 1909, £22; Vindex Special, 5 h.p., mag., £23; Douglas, 1910, £21; Enfield Lightweight, 1910, £20; Rex 3½ h.p., £15; N.S.U., 3½ h.p., 1908, £14; two Moto-scoches, 1½ h.p., 1910, £14; Olympic, 3 h.p., £7; Minerva, 2-3 h.p., £6; Minerva 2 h.p., £6; Moto-scoche, £9; Bow-Jap 8 h.p., 1911 speed gear, coach-built sidcar, £35; Zenith-Gradua, 1911, 6 h.p., wicker sidcar, £50; 3½ h.p. Sociable cycle car, £32; 4½ h.p. tri-car, 2 speeds, £15; Mabon clutch, brand new, £2/10; Simms twin magneto, new, £3/10; J.A.P. car carburettor, new, £2; Ford car carburettor, £1; exhaust whistle; Rover back wheel, complete with clutch; Millennium 2-speed gear, £4; 26x2 buttoned end tubes, as new; cycle car generator, new, etc. Full details on request. Now is the time of the year to secure bargains. [9289]

**SECTION IX.**

Somerset, Devon, Dorset, and Cornwall.

EXETER Motor Cycle Co., 7, Bath Rd. Tel.: 975.

EXETER Motor Cycle Co.—Rudge Multi, 1912, as new, only 200 miles, many spares, and Canelet sidcar, £65.

EXETER Motor Cycle Co.—Zenith-Gradua, 1912 6 h.p., new tyres, £57.

EXETER Motor Cycle Co.—Free engine Bradbury, 1912, brand new, £47.

EXETER Motor Cycle Co.—N.S.U. 2-speed Bradbury, 1912, soiled, £42.

EXETER Motor Cycle Co.—Zenith-Gradua, 3½ h.p., 1912, good condition, £42.

EXETER Motor Cycle Co.—Centaur, 1912, 3½ h.p., 2-speed, fine order, £42.

EXETER Motor Cycle Co.—Douglas, 1911, 2-speed, fine order, £32.

1913 Centaur, 3½ h.p., 3-speed, and Canelet sidcar to match; £70; at the Show model from Olympia.

EXETER Motor Cycle Co. for Cycle Cars.

G.W.K., delivery January.

SWIFT, delivery March.

A.J.S. Motor Cycles, January; Zenith-Gradua, ditto; Enfield, ditto, all models.

EARLY Delivery Singer, Centaur, Bat. [X5757]

ENFIELD, 2½ h.p. twin, new July, 1912, unsaturated, £33.—Toyer, Torbay Inn, Paignton. [9380]

DOUGLAS, 1913, Model O., £48; Model R., £52; both in stock.—Morlat, Yeovil. 'Phone: 50. [5324]

1911 3½ h.p. Zenith, splendid condition, just overhauled; accept £35, bargain.—Sanctuary, Manager t n, Melplash, Dorset. [X5867]

DOUGLAS, Scott, Clyno, Bradbury, Singer; order now for immediate or early deliveries. — Edwards, Motors, Taunton. 'Phone: 191X2. [8973]

GUY and Reynolds, Weymouth, have started their clearance sale of motor cycles, all machines are guaranteed to be in sound condition, and will be sent on approval, deposit.

INDIAN, 4 h.p., clutch model, blue finish, guaranteed not run 400 miles, and as new, £35.

BAT, 4 h.p., fitted with P. and M. 2-speed gear, guaranteed perfect, would make a good sidcar machine, £35.

PREMIER, 3½ h.p., not run 100 miles, as new, £32/10.

F.N., 2½ h.p., 2-speed gear, free engine, in good condition throughout, £20.

MOTO-REVE, in very good condition, £12.

TRIUMPH, 3½ h.p., 1912 clutch model, as new, not begun run, more than 100 miles, £50. [0172]

## Collier's Motories,

Westgate, Halifax, England.

PLACE YOUR ORDER NOW FOR A

**1913 BRADBURY**

3½ h.p., tourist or speed model .....	£48 0
3½ h.p., free engine .....	£54 10
3½ h.p., 2-speed, belt drive .....	£37 5
3½ h.p., 2-speed, chain driven .....	£80 0
3½ h.p., 2-speed, belt and chain .....	£60 0
3½ h.p., Sturmev or Armstrong 3-speed .....	£60 0

EXCHANGE QUOTED.

**1913 REX-J.A.P.**

LIBERAL EXCHANGES.

**NEW REXES.**

1912 2½ h.p. 2-speed REX Junior de Luxe ..	£45 0
1912 4 h.p. tourist, 8½ bore x 35 stroke ..	£46 0
1912 4 h.p. REX Speed King .....	£46 0
1912 4 h.p. tourist, clutch model .....	£49 10
1912 4 h.p. 2-speed de Luxe, handle starting ..	£56 0
1912 6 h.p. 2-speed twin de Luxe .....	£62 10
1912 6 h.p. twin de Luxe, chain drive .....	£70 0
1912 6 h.p. 2-speed Sidecar de Luxe .....	£75 0

Discount to trade. Exchanges quoted Colonial orders—Half cash with order and balance against delivery.

**SINGLES.**

1911 3½ h.p. tourist REX, spring forks ....	£27 10
3½ h.p. IVY-PRECISION, Druid forks .....	£32 10
3½ h.p. N.S.U., magneto, spring forks .....	£17 10
3½ h.p. ROVER, 1911, clutch model .....	£39 10
3½ h.p. REX, magneto, lightweight .....	£16 10
3½ h.p. REX, spring forks .....	£14 10
3½ h.p. REX, h.b. control, very low .....	£11 10
1912 3½ h.p. RUDGE, grand condition .....	£37 10
3 h.p. HUMBER, chain drive .....	£9 10
3½ h.p. BROWN, h.b. control .....	£11 10
3½ h.p. magneto TRIUMPH .....	£18 10
1911 3½ h.p. 2-speed REX, new .....	£33 10
1912 2½ h.p. 2-speed REX Junior, as new ..	£34 10
5½ h.p. Twin REX, free engine .....	£17 10

**TWINS.**

1910 6 h.p. M.O.V. N.S.U., 2 speeds .....	£29 10
1910 late model SCOTT, 2-speed .....	£33 0
1911 5 h.p. 2-speed twin REX .....	£36 10
5½ h.p. free-engine twin REX .....	£18 10
7 h.p. REX, spring forks .....	£36 10
6 h.p. ANTOINE Saxon forks .....	£23 10
1909 5 h.p. Twin REX de Luxe, 2 speeds ..	£29 10
1911 Twin REX, free engine .....	£32 10
1912 6 h.p. REX de Luxe .....	£46 10

**SIDECAR COMBINATIONS.**

3½ h.p. NEW HUDSON, 3-speed Armstrong gear and Premier sidcar .....	£39 10
5 h.p. 2-speed twin REX de Luxe, and Montgomery sidcar .....	£29 10
3½ h.p. P.F. Motor Cycle, and rigid sidcar, bargain .....	£12 10
1909 5 h.p. 2-speed twin REX de Luxe, and new rigid sidcar .....	£34 10
1911 5 h.p. 2-speed twin REX de Luxe, and £12 12s. shop-soiled Montgomery sidcar	£40 0

**MISCELLANEOUS.**

New 3-speed Armstrong Gear, with controls .. £5 19 6  
New Sidcars; list on application; from .. £5 5  
Lycett's Large Size Motor Saddle, new .. 9/6  
New 800ft F.K.S. Lamp grid generator .. 35/-  
Cane Sidcar Body, shop soiled .. 12/6  
1912 Bradbury 2-speed Gear, NEW .. £7 0  
26x2 new Avon non-skid covers, Druid model .. 17/6  
26x2 new 3 Spire Covers, 15/6; 26x2 19/6  
26x2 Avon Tubes, new .. 6/-  
28x25 new Calson Covers .. 12/5  
28x25 new, extra heavy Covers, leading make .. 16/3  
24x25 Clipper Covers, 10/6; Tubes .. 5/9  
£12 12s. Montgomery Sidcar, almost new .. £6 5  
Myers' Motor Cycle Stand .. 3/3  
Fuller's 20-amp. Accumulators, NEW .. 11/9  
New Rex Tool Bags .. 5/6  
Mabon Free Engine Clutch, fits Twin Rex .. 34/-  
Twin Rex Frame and Tank .. 19/6  
Lomax Detachable Non-skid, 26x2½, shop-soiled .. 14/6  
Whittle Belts ½in., 2/- per foot. Inch 2/6 per foot.



# EVANS for

## HONEST DEALINGS

AND

## SATISFACTION.

Not a single dissatisfied customer after eleven years' trading. Every client brings repeat orders. Let me quote you for your new mount. I can give you

### IMMEDIATE DELIVERY of 1913

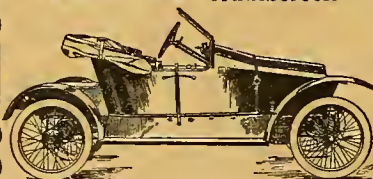
**HUMBERS ENFIELDS JAMES ZENITHS NEW-HUDSONS A.J.S.**

**TRIUMPHS CLYNOS ROVERS BRADBURY'S INDIANS ETC.**

MOTOR CYCLES, also MONTGOMERY & CANOELET SIDECARS.

### CYCLE CARS.

1913 MODELS Humberette



**Complete** Hood, Screen, Lamps, etc. **£125**  
GUARANTEED IN STOCK.

Also 1913

### G.W.K. and FORDS

Don't forget—IN STOCK.

I can guarantee delivery of the in March, price **PERRY Small Car 130 Gns., complete.**

### SPECIAL Tempting Offers.

#### NEW 1912 MACHINES.

TRIUMPH, clutch model .....	£48 15
TRIUMPH, standard model .....	£42 0
ZENITH, 3 1/2 h.p., Gradua gear .....	£48 0
JAMES, 4 1/2 h.p., Armstrong, 3-speed .....	£46 0
HUMBER, 2 1/2 h.p., twin, T.T. model ..	£35 0
HUMBER, 2 h.p., lightweight .....	£28 0
HUMBER, 2 h.p., with 3-speed .....	£35 0
HUMBER, lady's clutch model .....	£35 0

#### SLIGHTLY USED MACHINES.

1912 6 h.p. ENFIELD and coach sidecar .....	£65 0
1912 6 h.p. CLYNO and coach sidecar .....	£52 0
1912 3 1/2 h.p. HUMBER and coach sidecar .....	£48 0
1912 TRIUMPH, clutch model .....	£42 0
1912 GL NO, 6 h.p., 2-speed, as new .....	£45 0
1912 2 1/2 h.p. HUMBER, 2-speed .....	£38 0
1912 NEW HUDSON, 2 1/2 h.p., 3-speed .....	£35 0
1911 HUMBER, 3 1/2 h.p. 2-speed .....	£32 0
1911 ZENITH GRADUA, 3 1/2 h.p. .....	£32 0
1911 HUMBER Lightweight .....	£22 0

**P. J. EVANS.**  
**SPARKHILL, BIRMINGHAM.**

New Premises opened shortly:  
87, 89 & 91, John Bright St., B'ham.

### MOTOR BICYCLES FOR SALE.

MEAD-PRECISION, 1912, 3 1/2 h.p., free engine, Smith's speedometer, not ridden, 600 miles, unpunctured Michelin; best offer over £35; owner buying 3-speed same make.—Byron, Ottery St. Mary, Devon. [X5846]

1912 3 1/2 h.p. Free Engine Singer, £40; 1912 3 1/2 h.p. Lincoln Elk, £25; 1911 Triumph, £34; 1911 2-speed 5-6 h.p. Rex, £39; twin Werac, h.b.c., spring forks, £5/10; 2 1/2 h.p. Kerry, £5; latest 4 h.p. chain drive Rex, £50.—Holmes, The Motorcycles, Vauxhall St., Plymouth. [X5897]

### SECTION X.

#### Scotland.

ALEXR. Robertson and Son, Wick, agents for Triumph, Scott, P. and M. Douglas; early deliveries. [X9353]

ABERDEEN and District agent for Scott, Lewis & Co., P. and M. A.J.S., Suu, and Matchless.—Gunning, motor cycle agent, 165, Holburn St. [X6327]

3 1/2 h.p. Rex, thoroughly overhauled, everything first-class condition, lots of spares; £10, or nearest.—Graves, 746, Balmoral Terrace, Yoker Rd., Glasgow. [X9309]

### SECTION XI.

#### Ireland and Isle of Man.

1912 3 1/2 h.p. New Hudson, 3-speed, and sidecar, free engine, almost new; owner buying car.—D. J. Browne, 14, Pembroke St., Tralee. [X9350]

### CYCLE CARS.

EARLY Delivery of Humberettes.—Lambert, Thetford. [X5003]

SINGER Cycle Cars.—Order immediately for delivery in January.—F. Spearman, Bridge St. Garage, Bishop's Stortford. [X9225]

SINGER Cycle Cars.—Order immediately for early delivery. Guildford and Godalming agents, Crow Bros., 190, High St., Guildford. [X8320]

1912 Rollo Cycle Car, 2,000 miles, speedometer, complete; nearest £80 secures; drive 50 miles to purchaser.—Apply, 1,612, The Motor Cycle Offices, Coventry. [X0180]

ROLLO Cycle Car, 8 h.p. J.A.P. engine, like new; cost £120 last June; done 1,600 miles, complete with hood and screen, heavy Continentals, spare Kempshall, inner tubes, etc.; sell £85, bargain.—E. Morgan, Nag's Head Inn, West Bromwich. [X9219]

MONOCAR and Ducac Parts of every description manufactured to customers' special requirements. Worm or bevel-driven back axles of exclusive design, gear boxes, steering mechanism, and special Eagle munc engines for this class of work from 3 1/2 h.p., water or air-cooled; cars constructed to customers' own designs; also manufacturers of motor cycle air-cooled engines from 2 to 9 h.p.; alterations and repairs a speciality.—The Eagle Motor Manufacturing Co., Ltd., 1, Shepherd's Bush Ed., W. [X0080]

### TRICARS FOR SALE.

4 1/2 h.p. 2-speed Tricar: sell separately: what offers?—S. 42 2, Peterham Mews, London, S.W. [X9343]

A.C. Owens should write Bass, Insurance Broker Bishop's Stortford, for particulars of special policies [X0005]

A.C. Sociable, July 1911, hood, screen, lamps, speedometer, luggage carrier, spares, new condition; £65, or near offer.—Barker, Lanchester, Durham. [X5882]

RILEY Tricar, water-cooled, 2 speeds, very fast, perfect order; bargain. £25; photograph and full particulars.—Write, Superintendent, Baths, Plumstead, S.E. [X325]

SOCIABLE Tricar, 10 h.p., water-cooled twin, wheel steering, foolproof gears, perfect condition, fast, good climber, recently overhauled; bargain at £35; no exchange.—Williams, 6, Broad, Oxford. [X9326]

A.C. Sociable, Sept. 1911, fitted with hood and side curtains, screen, luggage carrier, head lamps, Lucas side and tail lamps, horn, tools, pump, jack, and spares, tyres are in excellent condition, non-skid on rear wheel; the car has not done 2,000 miles, and all working parts are perfect, will climb any hill; price complete for quick sale £65.—Sir Wm. Angus Sanderson and Co., Ltd., St. Thomas' St., Newcastle-on-Tyne. [X9313]

### SIDECARS AND FORECARS.

SIDECAR, Mills-Fulford, 1910, art cane, Continental tyre, all in good condition; £3/10.—Kerry, 96, Mandeville Rd., Belfield Wash. [X9374]

SOLE Makers of the famous Rey sidecar, from £5/5 to £10/10; send for catalogue; trade supplied.—Rev. S. Heath St., Hampstead, N.W. [X7169]

MIDDLETON'S, the trade house for sidecars: 20 models manufactured throughout in own factory.—Showrooms: 27, Stroud Green Rd., Finchbury Park, N. Hornsey 1584. [X7277]

COACH-BUILT Sidecars.—Advertiser, who is maker and designer of sidecars, will be pleased to quote lowest prices, or make to your own designs.—Langford, coachbuilders, Smethwick. [X5903]

SIDECARS De Luxe, from £4/15 complete, finest selection in London.—Call and inspect stock at new showrooms, 25, Imperial Parade, Wimbledon.—Wimbledon Motor Manufacturing Co. [X9182]

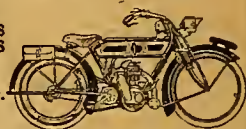
P.M.C. Sidecars from £5/17/6 to £10/10; write for catalogue fully illustrating the various models and patent P.M.C. quickfit couplings.—The Premier Motor Co., Ltd., Aeton Rd., Birmingham. [X0154]

# TAYLOR'S

## TOPICAL TALKS.

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1912 6 h.p. Zenith, Mills-Pulford 18 gn. sidecar, fully equipped; cost £95, accept £68.—A. Warrington, 163, Grange Rd., Birkenhead. [X5494]

1910 P. and M. with practically new sidecar, excellent condition; must sell, bargain, £38, worth £50.—168, The Moor, Sheffield. [X223]

ROYAL Enfield, 1912½, 6 h.p., and sidecar, only run 100 miles, perfect condition; owner buying car; £69.—Coppage, Gables, Brecon. [X9338]

BRADBURY, 1912 horn and piston, adjustable pulley, new Kempshall, Millford castor sidecar, all accessories; £25.—4, Croons Hill, Greenwich. [X9356]

CLYNO, 2-speed, 1912, coach-built grey sidecar, luggage grid, new spare Palmer, 2 lamps, 2 horns, all tools.—Ainscow, 32, Atherton Rd., Hindley, Wigan. [X5850]

CHATER-LEA No. 7 3-speed, torpedo spring wheel sidecar, plenty spares, tyres, etc.; cost over £100, sell £65.—Particulars, 46, Hamilton Rd., Oxford. [X5899]

1912½ Bradbury and Sidecar, 2 speeds, free engine, every accessory, perfect condition, fast, very powerful; £40.—Laurelmount, Churchfield Rd., Watlington-Thames. [X5118]

1912 Zenith-Gradua, 3 h.p., fitted complete and like new, £40; coach-built sidecar for same, £5; seen by appointment.—65, Douglas Rd., Handsworth, Birmingham. [X5917]

P. and M., 1909½, big valves, fine machine, everything just overhauled, guinea whistle, 2 lamps, all accessories, and Millford sidecar; any trial; £39.—103, Kingsby Place, Bradford. [X5915]

JAMES, 1912, 3 h.p., 2-speed, chain drive, free engine, kick starter, Canoelet sidecar, accessories, new April; £45, recently cost £80.—2, Wendover Rd., Bromley, Kent. [X371]

INDIAN, 6 h.p., clutch, late 1911, sidecar, Lucas, Cowey, 3 Palmer's cord, tools, accessories, spares, lamp, chain, tyre, condition new; £42.—Tantum, 43, Kestrel Av., Heine Hill. [X9346]

1912 Free Engine Triumph and sidecar; cost over £70 in September, not done 500 miles, 5 gn. speedometer, spare cover, tube, all accessories; accept £55.—A. Morgan, 2, Gerrard Place, W. [X5490]

6 h.p. 1912 Enfield Combination, new in August, run 600 miles, better than new, £65; another ditto, 60 gns.; 1911 2-speed Humber and Sidecar, perfect, £32.—Batchelor and Co., Kingston-on-Thames. [X5938]

CLYNO, 1912, and coach-built sidecar, painted grey, F.R.S. lamp, Jones' speedometer, exhaust whistle, all tyres brand new, in perfect condition; £65, or near offer.—Adams, Ashleigh, Bowness-on-Windermere. [X5758]

3½ h.p. 1912 Humber, 2 speeds, sidecar, with 4-point 32 attachment, spare belt, 3 spare inner tubes, Lucas lamp, horn, watch, mirror, all accessories, condition good; £44/10, no offers.—Sutton, Denmark Rd., Walsall. [X9310]

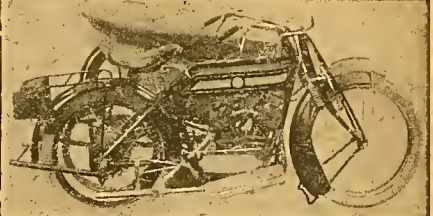
CLYNO, 1912, 5-6 h.p., first-class condition, F.R.S. lamp, Cowey speedometer, spares, £52; absolutely new 1912 2-speed Humber and Canoelet sidecar, greatly reduced price.—Rowland and Sons, Salisbury. [X9359]

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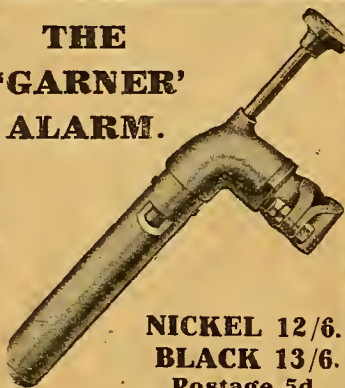
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## PERSONAL.

**WILL** Anybody who can give information about Rudge Multi, engine 4530, frame 664083, communicate with Garage Victor, 85, Avenue de la Grande Arme, Paris. [X5872]

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**1912 Bradbury,** 2 speeds, brand new... £50

**1911-12 Bradbury,** speedometer, meter, lamp, horn, etc., quite new £35

**1911 Triumph, F.E.,** speedometer, meter, lamp, horn, etc. £40

**1911½ Sabella Cycle Car,** 8 h.p., J.A.P. engine, new service belts, new spare tyre, hood, screen, etc. £60

**1911 Clynos & Sidecars** £45

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MOTOR Cycle, with or without sidecar, must be cheap. (Gledbolt, Hall Cottage, Huddersfield. [9349]

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WANTED, sidecar, good condition, fit Rex, 1911, for cash.—Penny, Woodlands Cottage, Harrow Weald. [9316]

WANTED Triumph crank case, flywheels, and connecting rod.—Page's Garage, Acre Lane, Brixton. [9307]

2-SPEED Gear wanted, any condition, or incomplete, must be cheap.—Vondale, Roman Rd., Chesham. [X5852]

WANTED, 1hp. engine, outside flywheel, m.o.i.v., magneto.—89, Cambridge Rd., Southend-on-Sea. [X5122]

WANTED, B. and B. carburettor, h.b.c., also Whittle and magneto.—Mechanic, Barghead, N.B. [9336]

GOOD Late 1912 Combination, perfect, cheap.—D. J. Shepherd and Co., Motor Garage, Enfield Highway. [X5483]

WANTED, pair spring forks, cheap, 26x24 wheel, 8in. stem, 1in. handlebars.—Vatcher, St. John's, Jersey. [X5869]

WANTED, magneto, suitable for 48° twin, 6hp., anti-clockwise; approval.—49, Russell St., Loughborough. [X5951]

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1912 Torpedo Sidecar, suitable for 34hp. Humber cycle, Millford or other good make.—Hare, 147, Victoria Dock Rd., E. [9341]

WANTED, high-class engineer's lathe, in exchange for brand new free engine Triumph (255).—Wray, Triumph agent, Southport. [X5893]

TRIUMPH, 1912, T.T., good condition imperative; state price and full particulars.—Baker, 11, Denry Rd., West Bridgford, Notts. [X5909]

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WANTED, 1912 Triumph free engine wheel, complete with rods, fittings, etc., must be in good condition; deposit, approval.—Long, Malahide, Co. Dublin. [X5854]

WANTED, modern motor cycle and sidecar, for cash; might lend few pounds if allowed use of motor cycle.—Scud full particulars, Lee, 702, Fulham Rd., London. [9363]

MOTOR Cycle Covers to retread, special heavy 17/6, heavy 12/6, medium 10/-; rubber studded.—Elite Rubber Co., 260, Coldharbour Lane, Loughborough Junction, S.W. [9379]

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WANTED, back numbers, complete with advertisements, of "The Autocar" and "The Motor," up to and including 1935; also "The Motor Cycle," 31/3/03 to 31/12/09, and "Motor Cycling," from November, 1909, to Mar. 1910.—Address, Box No. 2,049, The Motor Cycle Offices, Coventry. [X5866]

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31hp. Miberva, running order, accumulator low, for 32 5hp., cash adjustment.—Shurey, Lancaster Rd., Enfield. [9358]

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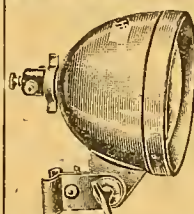
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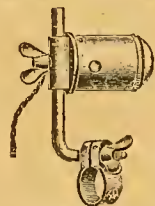
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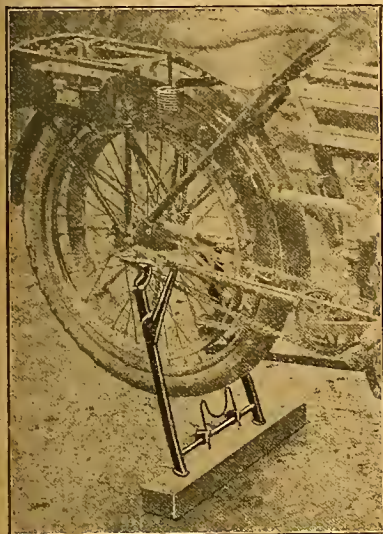
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DOES NOT DRY UP IN TIN.  
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IN CIGARETTE CASES OR PACKETS  
1/-, 1/6, 3/-, & 5/-, EACH.

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**BANCROFTIAN Accumulators**, Fullers, 20 amperes, 10/11, usual 21/-. Lamps, with generator, Rushmore pattern, 15/6; voltmeters, 3/3. Handle-bars, all shapes, from 4/11; silk goggles, 1/-, usual 3/6; rubber, 9/d. pair, 1/6 line; watches, in cases, 3/7; handle-bar mirrors, 3/6; exhaust whistles, 1/10; usual 3/6; mudguards, 3/6. Close 1.30 Saturdays.—The Bancroftian Co., 64, Bishopsgate, E.C. 2A.; Chaikel, London. Tel.: 9397 London Wall. [0074]

**BINKS 2-jet Carburettor**, 18/6; 2-speed reverse box, 35/-; 3-speed and reverse, 25/-; 9ft. leather 1in. belt, 7/-; Ilkington, Beeston, Kendal. [X5900]

**EXCEPTIONAL Bargains** in tyres, belting, accessories, magnetos. Get our list: save money.—Armstrong Co., 24, Goldhawk Rd., Shepherd's Bush, London. [0192]

**Do You Photograph?**—Try a sample of either P.O.P., self-toning, or gaslight paper or cards, 2 stamps; cameras bought for cash or exchanged.—Martin, chemist, Southampton. [0222]

**DON'T** pay fancy prices just because you ride a motor; send P.C. for my motor cycle tyre and sundries list and save money.—H. Fitzpatrick, Dept. A2, Burnley. [0231]

**MOTOR Cycle Covers** re-treaded, special heavy 17/6, heavy 12/6, medium 10/-; rubber studded.—Elite Rubber Co., 260, Coldharbour Lane, Loughborough Junction, S.W. [9378]

**FOR Sale**, 4hp. Coronet engine, 24; one Watawata 1 belt, 7/6; two Michelin covers, 5/- each; one new 51/6 Bates, 30/-; all in good order.—Harding, Hill View, Fore St., Tiverton. [X5847]

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**A HAPPY New Year** assured to all by using 1913 type Extractor silencers; the best; remarkably silenced; power increased; illustration Triumph fitted; lists free.—Dawson, Whittiesea. [X5906]

**NEW Motor Cycle Cover**, studded, 26x21, accept 18/6; new cycle car cover, 26x21, 4-ply, diamond tread, accept 15/-; Dunlop butted tube, new, accept 7/-; Jones, Orchid Nurseries, Kenilworth. [X5947]

**MOTOR Rng**, handsome, 28/8, black fur, very large, 22/2; also set furs, with fox heads, tails, paws, perfect condition, both new this year, 22/2; approval willingly.—Hamilton, 19, Oxford Terrace, Hyde Park, W. [X5113]

**BARGAINS**.—12hp. Werner, 23; 3hp. Triumph, 22; 3hp. Rex, 29; 4hp. Forward, 28; 3hp. Quadrant, 213; drilling machine, 30/-; all in good order.—The Conway Cycle and Motor Agency, Woking Village. [X5952]

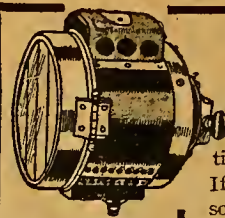
**HANDLE-BAR Muffs**, "better than others advertised same price" (testimonial), 2/9 pair: V.S. frame, complete, Truffants, 2-speed and free, tyres and tubes as new, minus engine, only 26/10, worth double.—B. R. Stranger, Tavistock. [9354]

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**2,000 Pairs of Motor Leggings** (strap or spring front), new, 4/11, 5/6 per pair; any Bedford cord riding breeches, 4/6, 5/6; new whipcord breeches, 6/6, 8/6. Send for price list.—Auscomb, Gt. Contractor, 14, London Rd., Southwark, S.E. [7626]

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MATCHLESS, all models	January
BRADBURY, all models	January
NEW HUDSONS, all models	January
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**31-4hp. Motor Cycle**, free engine, etc., worth £30, 32/- sacrifice £23, or near offer: Dunk-P Warwick extra heavy rubber studded, 26x2, beaded, 15/6; Watawata, 3, 7ft. 6in., 8/6; Continental rubber, 3, 7ft 7in., 7/-; all new; genuine bargains.—38, Welmeadow Rd., Hither Green. [8927]

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**1912 Senepar Carburettor**, good order, accept 17/6; Brown Barlow, variable jet model, 1912, 17/6; Jones speedometer, not done 2,000 miles, accept 21 15; Stewart speedometer, quite new, accept 22/2; 12 volt generator, 2-way outlet, accept 6/-.—Dene Motor Cycle Co., Haymarket, Newcastle-on-Tyne. [X5486]

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**BASTONE'S**—Miscellaneous Soiled Covers: Continental 24x21 B.E., 15/-; Continental rubber-studded 26x2 B.E., 17/6; Spencer-Moulton 26x2 B.E., very heavy, 18/-; Hutchinson Vanorie 26x21 B.E., 18/-; John Bull rubber studded B.E., 26x2 18/-; 28x21 20/-, 28x21 20/-; Hutchinson Tourist Trophy rubber studded 26x21, 28/-; a few only soiled Continental tubes, 26x21 5/6, butt ended 7/-.

**BASTONE'S**.—Clearance line of soiled Michelin covers: Beaded edge, 26x2, 26x21, 28x2, 12/6 each; 28x2 wired edge, 12/6 each; heavy Michelin Trident 26x21, beaded edge, 27/- each

**BASTONE'S**, 228, Pentonville Rd., King's Cross, London, N. Phone: 2481 North. Telegrams: Bastone's, London. [X5944]

**MARON** Clutch, complete, with spare discs and spring. Rt. Bradbury, just overhauled by makers, and new flanges fitted, 25/-; Whittle belt, 9ft.x1in., 15/-; Bradbury 1in. plated handle-bar, with grips, 3/6; Bradbury back wheel, 26x21, with belt rim and free-wheel, 7/6; Frankonia separate generator lamp, complete, 7/-; Bradbury back wheel brake complete, 5/-, all certified good condition; £3 buys the lot.—Oliver Bergh, Tyrone. [X5942]

**WHAT Offers?**—Sidecar, Liberty, extra well sprung, upholstered red pegmatoid, aprn, toolbox, etc., complete, 40/-; motor cycle frame, low built, tanks, complete, 20/-; back wheel and hub brake, with tyre, 12/6; handle-bars, with switch, 6/-; J.A.P. and R.O.M. contact breakers, for twin, 7/6 each; Auto lock levers, three for 5/6; J.A.P. silencer, 4/-; head light, by Worsnop, 6/6; horn, flexible tube, 6/-; Longuemare pattern H. carburettor, 8/6, etc., rider clearing out oddments.—Apply any evening, 11, Natal Rd., Bowes Park, N. [X5755]

**WRITE** a postcard for our catalogue, 124 pages, 700 illustrations, all the latest motor cycle accessories, lower prices than any other house in the trade. Several shop-soiled 1912 fixed and free engine models at bargain prices to clear. Supplementary catalogue just issued with reduced autumn prices and new models of sidecars; accessories value 25 or over supplied on monthly payments; 10/- allowed on old tyres in part payment for best makes of tyres; pillion seats from 10/-; sidecar shock absorbers, 12/6 set of 4; adjustable pulleys, to fit any engine, 12/6; screw-cutting lathes, 29/2/6 cash, or 17/6 monthly; double texture fawn waterproof suits, 24/6; seamless waterproof trousers, 12/6; double-breasted oilskin jackets, 5/11; oilskin leggings, 4/11; leather leggings, 5/11; blue engineers' overalls, 6/6 suit; lamps and generators, sixteen patterns in stock, the college mudshield, 20/-; roller blind mudshield 15/-; leather mudflaps and mag. shields, from 2/9; handle-bars, 7 patterns stocked; exhaust whistles, 6 patterns, from 2/6; sidecar gongs, 7/-, 8/-, 3/9, and 11/6; handle-bar mirrors, 3/6; rear sidecar lamps, 10/6; Blumfeld sidecar screen, 35/-; leather gauntlet gloves, 5/6; rubber-covered footboards, 12/ pair. 2nd-hand machines bought, sold, or exchanged. Repairs, enamelling, plating.—M.C. Dept., Metropolitan Machineists' Co., Ltd., 248, Bishopsgate, London, E.C. Phone: 12857 Central. Telegrams: Quills, London. [0040]

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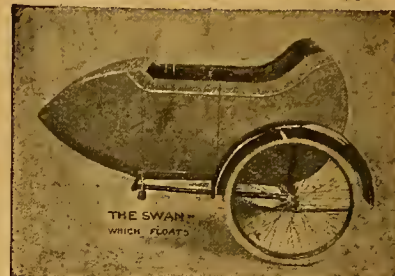
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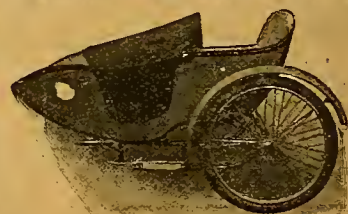
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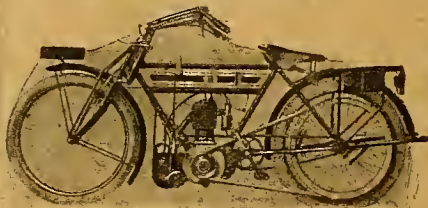
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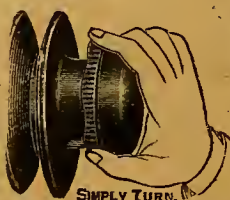


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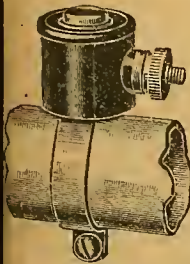
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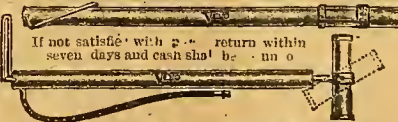
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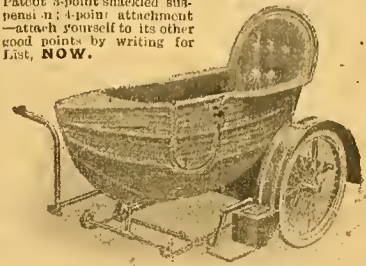
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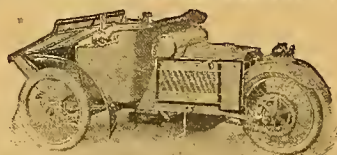
4 h.p., £45.

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is made with the same skill which has always distinguished the Campion pedal cycle. As strong and reliable as if made all in one piece, it is a glutton for work, and takes the steepest hill like a bird.

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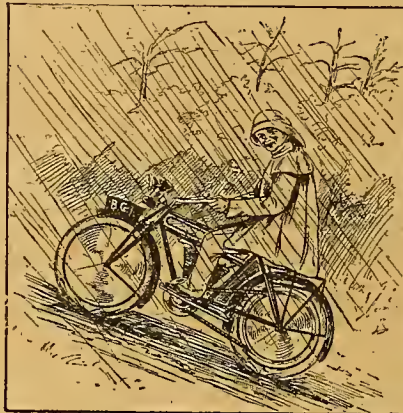
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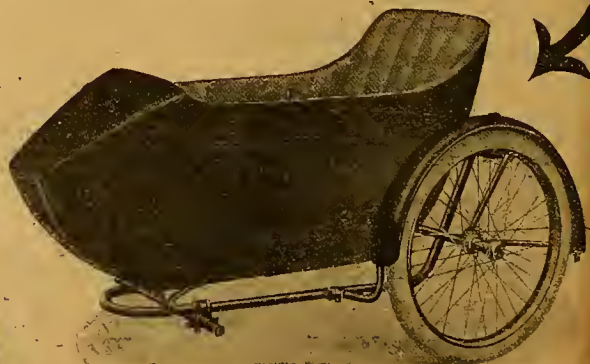
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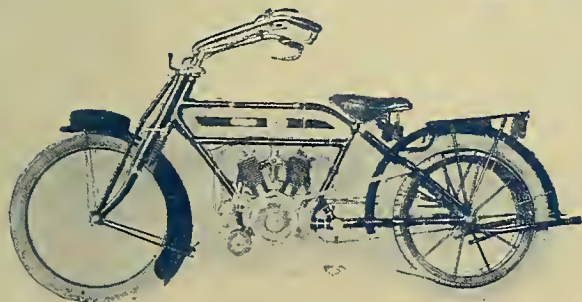


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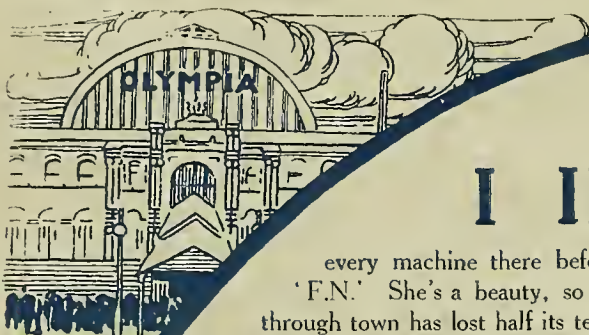
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